Journal of Positive School Psychology http://journalppw.com
2022, Vol. 6, No. 9, 2225-2237

Absorbing The Religious Identity Values Through Woven Fabric Motif Digitization To Preserve Indonesian Identity And Culture

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Abstract

One-sided claims of cultural wealth are common due to the transformation caused by migration from one region to another and the weakness of the database system on related assets. Therefore, this study aims to develop the application of woven fabric motif digitization to absorb the religious values needed for preserving valid, practical, and effective Indonesian identity and culture. The method used is Research and Development (RnD) version 4-D (Four D), which is an extension of Define-Design-Develop-Disseminate. Furthermore, the product development stage adopts the System Development Lyfe Cycle (SDLC) approach, with the Waterfall type consisting of Communication, Planning, Modeling, Construction, and Deployment. The results were declared valid with a value of 0.80 which means stakeholders can use the resulting product. Furthermore, the test results showed a practicality value of 93.33, which is practical or easy to use. With a value of 0.92, the effectiveness test revealed that the product can produce information related to the woven fabric motif. Other results indicate that the motif has significance for local knowledge and the content of religious values as symbols in the people's lives.

Keywords: Weaving Motives, Digitization, Religious Values, National Culture, National Identity

A. INTRODUCTION

Diversity is the hallmark of the Indonesian nation in terms of culture, religion, race, ethnicity, and language. This constitutes wealth in addition to the gift of natural beauty bestowed upon the world by God. Therefore, it is a shared responsibility to preserve Indonesia's diversity for future generations.

Diversity and wealth can sometimes trigger mutual claims between regions and countries. Incidents of mutual or unilateral claims against the culture of a region can trigger divisions. This condition can be prevented when the region has strategic and planned stages to avoid claims against the culture, customs, or peculiarities.

One-sided claims of cultural wealth are common due to the transformation caused by migration from one region to another and the weakness of the database system on related assets. The case of claiming the Reog Ponorogo dance and Indonesian batik motifs is an example of this claim. This case can

certainly be avoided by completing or perfecting the database system related to the culture and wealth of identity.

Determination of cultural identity is highly dependent on 'language' as a non-material element. It relates to how language representation explains the reality of all detailed and compared identities. The identity of someone or something always follows the concept of using language, especially to understand a word denotatively and connotatively. Cultural identity is a quality that distinguishes a nation or community group from others. In this case, Indonesia, with various ethnic groups, also has different cultures with uniqueness (Suantara et al., 2016).

Songket woven fabric is one of the wealth of the Indonesian people. It is nearly possessed by all regions, with motifs and patterns that are distinctive to each. The motifs are heavily influenced by Chinese and Indian cultures, as well as religious segments such as Islam, Hinduism, and Buddhism (Nurdin et al., 2018). Values in songket woven fabric motifs such as religious, cultural, and ethnic identities have meaning. Therefore, the motif is not just a pattern, variety, or decoration on cloth but has noble and dignified meanings. Over time, songket woven fabrics have become the result of Indonesian culture and identities.

The efforts to maintain and preserve the woven motifs, which contain noble meanings and Indonesian cultural identity, are to identify, document, and provide a digital identity of songket by building a database-based information system application (Zakir et al., 2019).

Lev Manovich, a Professor of Visual Arts at the University of California San Diego, identified five digital characteristics, namely numerical representation, modularity (the principle of assembling larger units from smaller ones), automation; variability, and transcoding (the relationship between computing and everyday culture) (Aji, 2016). From the five digital characteristics above, the effort to record the woven fabric motifs mostly produced in the archipelago is a transcoding process combined with the religious identity values attached to the community. These values will further define Indonesia's cultural and religious diversity. An application that can document the values of religious identity and identify the woven fabric motifs of several regions as the wealth of the Indonesian nation was designed in this study.

B. METHODOLOGY

Research and Development (R & R&D) method is used to produce certain products and test their effectiveness. This is a method used to develop or validate products used in education and learning (Khomarudin & Efriyanti, 2018). The applied Research and Development stages are the 4-D (Four D) version because this is appropriate for making the information system that will be created. The stages are easy to follow, and the product distribution allows repeated trials and revisions of the information system.

Thiagrajan stated that the research and development stages are abbreviated as 4-D (Four D), which is an extension of Define-Design-Develop-Disseminate (Fadila et al., 2019). The 4D

model does not include implementation and evaluation because it contains rational considerations. Furthermore, the development process includes activities conducted at each stage of development, as seen in the following figure (Sutarti & Irawan, 2017) :

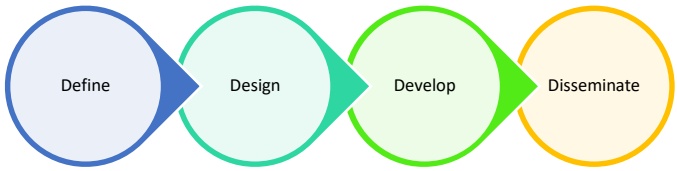

Figure 1 Development of 4D Model (Sutarti & Irawan, 2017)

The description of the 4-D (Four D) Stages is as follows (Sutarti & Irawan, 2017) :

1. Define Stage (Define)
   This is the first stage of the research method. It conducts the definition and specifications of the product to be developed.
2. Design Stage (Design)
   The stage aims to design a product after the observations.
3. Development Stage (Develop)
   This stage is carried out to produce product development through (1) expert appraisal followed by revision and (2) development testing.
4. Dissemination Stage (Disseminate)
   The objectives of this deployment stage are:
   a. Knowing the use of tools developed on a wider scale.
   b. Testing the effectiveness of using the device.

This study uses a system development model adopted from the SDLC (System Development Life Cycle). SDLC is a traditional method used to build, maintain and replace an information system. Furthermore, it is the creation or modification of a software system adopting the same models and methodologies that were previously used. SDLC describes the main stages' analysis, design, and implementation (Khomarudin & Efriyanti, 2018). It has several models, including waterfall, spiral, rapid application development (RAD), prototyping, and incremental modes. According to Pressman, the waterfall model used in this study is a classical, systematic, and sequential design in building software. Some benefits include a more consistent process sequence from one stage to the next. The work schedule also becomes more certain because the schedule for each process can be determined with certainty (Sutarti & Irawan, 2017). The phases in the Waterfall Model, according to Pressman, are as follows (Setiawan et al., 2015) :

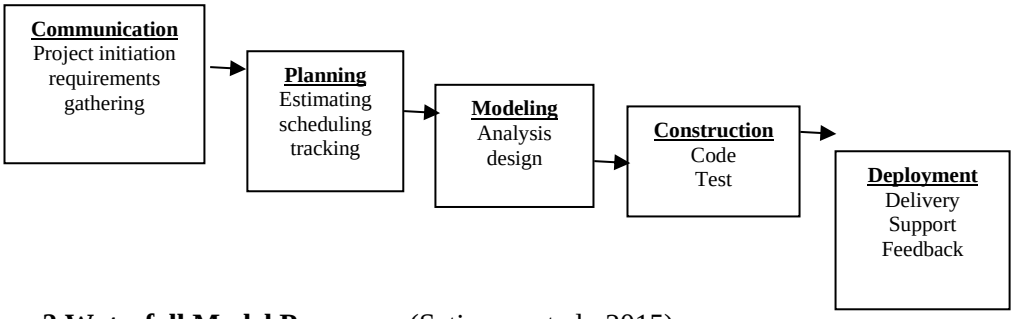

Figure 2 Waterfall Model Pressman (Setiawan et al., 2015)

1. Communication
   Communication is a discussion process between development and system users to equate perceptions related to the developed system.
2. Planning Establish a plan for software work, including technical tasks, risks, required resources, results, and work schedule.
3. Modeling At this stage, the requirements are translated into a software design that can be estimated before coding.
4. Construction Construction is the stage of the code generation process. Coding is a method of translating a design into a language understood by computers. The programmer will translate the user's request in this stage. Subsequently, testing is conducted with black-box testing, which is software for functional specifications. Black box testing works by ignoring the control structure, and its attention is focused on domain information (Jaya, 2018).
5. Delivery of the system to customers/users (Deployment) This is the final step in developing software or a computer system. After analyzing, designing, and coding, the end-user will use the system, and the software should be updated regularly.

After the creation, the product is subjected to a product validity, usability, and effectiveness test. A validity test describes the extent to which an instrument can measure its content (Hendryadi, 2017). In addition, it determines the extent to which the accuracy of a product is produced or tested. A product can be said to be valid when it fulfills the criteria that have been set.

The validity test is conducted by referring to the statistical formula of Aiken's V as follows:

$$V = \frac{\sum s}{n(c-1)}$$

Description:

s : r – lo

lo : The research value of the lowest validity.

c : The highest number of research validity.

r : The number given by an assessor.

n : Number of raters.

Determination of the validity of the number "V" is obtained between 0.00 to 1.00. The validity category stated that a product is valid when Aiken's V value ranges from 0.60 – 1.00 and is invalid when smaller than 0.60 (Lewis, 2015). A product practicality test is a testing process to determine the practicality of the resulting product. Assessing the practicality of a system or application is conducted by analyzing the ability of the user to understand and use the final system or application. The assessment is based on a questionnaire that has been filled out and analyzed by the practitioner. The data from the practical analysis used the formula proposed by Riduwan (2013) as follows:

$$N = \frac{BP}{BM} \times 100\%$$

Description:

N= Value obtained

BP= The value given to the questionnaire

BM=Maximum value for each item in the questionnaire.

The following Likert scale criteria measure the final result from the sum of the indicator values:

Table 1 Percentage of Practicality Value (Riduwan, 2013)

Percentage (%)	**Criteria**
0-20	Not Practical
21-40	Less Practical
41-60	Practical enough
61-80	Practical
81-100	Very Practical

The effectiveness test is carried out to examine the suitability of the product with the predetermined goals. According to Reigeluth, the effectiveness of a product is very important to determine the application level of the relevant theory (Haviz, 2013). Nieveen stated that the model's design is consistent in its use between expectations and actual (Haviz, 2013). The expectation is that the product will be developed in accordance with the requirements of the outcomes. Therefore, this study shows the product's effectiveness with the response and whether this system can be used. The Moment Kappa formula is as follows (Sagita et al., 2017):

$$k = \frac{\rho - \rho e}{1 - \rho e}$$

Description:

k = Moment kappa, which indicates the product validity.

ρ = The realized proportion is calculated by dividing the number of values given by the

validator and the maximum values.

ρe= The unrealized proportion is calculated by subtracting the total number of maximum values by the validator divided by the maximum number of values with the following conditions:

Table 2. Decision Category Based on Kappa Moment (k)

Interval	Category
0,81 – 1,00	Very high
0,61 – 0,80	High
0,41 – 0,60	Moderate
0,21 – 0,40	Low
0,01 – 0,20	Very low
≤ 0,00	Invalid

C. RESULTS AND DISCUSSION

The presentation of the results follows the 4D approach, namely Define, Design, Develop and Disseminate. Define is a needs analysis that aims to determine the extent to which users' developed system is needed. Government agencies (government), weaving industry activists, and weaving observers identify users. The interview conducted on Wednesday, August 2021, showed that Katik Mansyur is an activist in songket weaving in Nagari Pandai Sikek. A way to maintain or at least introduce culture (songket weaving) to the next generation is the existence of a system that can be easily accessed (Katik Mansyur, 2021). Mrs. Ratna supports this as the songket weaving entrepreneur from Sawahlunto, who emphasized that it is difficult for the current generation to find comprehensive information related to the development of weaving in West Sumatra (Ratna, 2021). The interviews were conducted on Wednesday, September 12, 2021.

The analysis related to readiness in managing applications does not require special abilities or certain skills to manage this system because of a user-friendly paradigm. Looking at the recent development of information technology in Indonesia, it can be concluded that the system will be able to run in an adequate environment. However, it may not be classified as very adequate to support application operations.

System design begins with utilizing Use Case, Sequence, and Activity Diagrams. Use Care Diagram illustrates the interaction between use case and actor. Use Cases represent system functionality and requirements from the user's point of view. Meanwhile, the actor represents the person or system that provides or receives information from the system. The use case diagram of the system for digitizing woven fabric motifs is as follows:

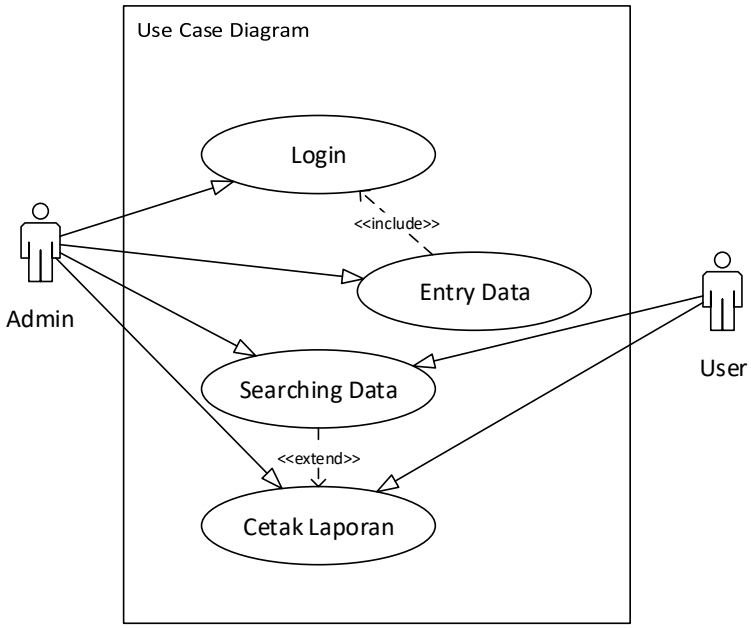

Figure 3. Use Case Diagram Application

The Use Case Diagram of the woven fabric motif digitization system in Figure 4.1 showed that there are 2 actors involved, namely: admin and user. Furthermore, the four aspects are login, data entry, searching data, and printing reports. The details of the diagram above are as follows: Admin; An admin can do login cases, enter data weaving, search data, and print reports, with the condition that they need to log in first. Users; Users can perform various activities in this application, including logging in, searching data, and printing reports.

Sequence Diagrams describe the interactions between objects and indicate their communication (Maiyana & Mengkasrinal, 2017). This diagram also shows a series of messages, and the sequence of the weaving motif digitization system is as follows:

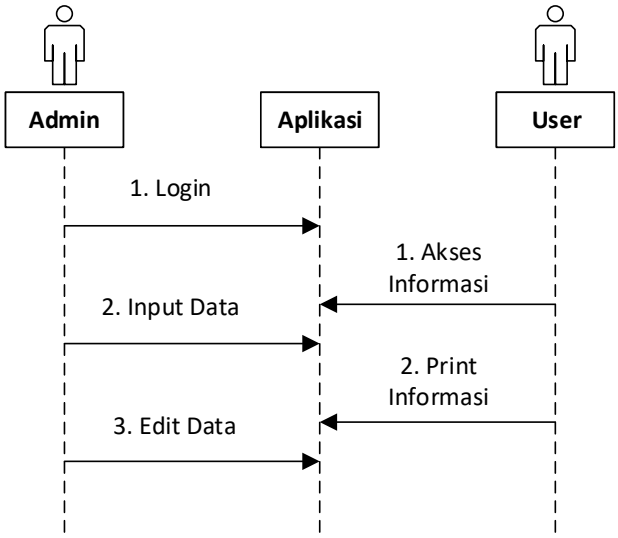

Figure 4. Sequence Diagram

The two objects involved in the Sequence Diagram of the woven fabric motif digitization system in Figure 4.2 are admin and user (Zakir, 2016) (Maiyana & Mengkasrinal, 2017). In addition, an activity diagram is a graphical modeling tool that can describe the activities conducted by actors in the system. It describes how the designed application program modules work (Zakir & Hidayat, 2018).

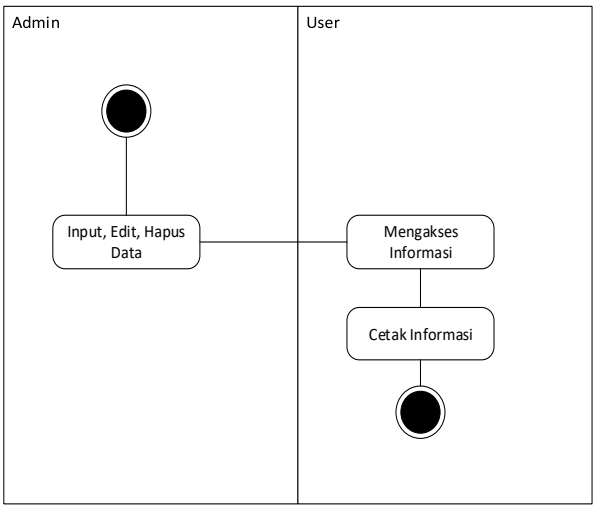

Figure 5. Activity Diagram

Development translates the design into a programming language, namely the PHP/MySQL programming language. The program for connecting menu and display items and their databases is entered at this stage. The following is an example of translating design into a

programming language (Annas et al., 2021).

```
<!DOCTIPE html>
<html>
<head>
<meta charset="utf-8">
   <meta http-equiv="X-UA-Compatible" content="IE=edge">
   <meta name="viewport" content="width=device-width, initial-scale=1">
   <!-- The above 3 meta tags *must* come first in the head; any other head
content must come *after* these tags -->
   <meta name="description" content="">
   <meta name="author" content="">
   <link rel="icon" href="assets/img/icon.png">

   <title>Ijazah QR Code</title>

   <!-- Bootstrap core CSS -->
   <link href="assets/css/bootstrap.min.css" rel="stylesheet">

   <!-- Custom styles for this template -->
   <link href="assets/style.css" rel="stylesheet">

</head>
<body>
<nav class="navbar navbar-default">
  <div class="container">
    <div class="navbar-header">
      <button type="button" class="navbar-toggle collapsed" data-
toggle="collapse" data-target="#navbar" aria-expanded="false" aria-
controls="navbar">
        <span class="sr-only">Toggle navigation</span>
        <span class="icon-bar"></span>
        <span class="icon-bar"></span>
        <span class="icon-bar"></span>
      </button>
      <a class="navbar-brand" href="./">APLIKASI DIGITALISASI MOTIF
KAIN TENUN INDONESIA dengan QR Code</a>
    </div>
  </div>
</nav>

<div class="container">
          <div class="col-md-4 col-md-offset-4">
```

```
                    <div class="panel panel-primary">
                            <div class="panel-heading">
                                    <h3 class="panel-title"><span
class="glyphicon glyphicon-lock" aria-hidden="true"></span> LOGIN
ADMIN</h3>
                            </div>
                            <div class="panel-body">
                                    <?php
                                    ……….
</body>
</html>
```

Dissemination is the final stage of product development. This stage aims to see whether the system for digitizing the woven fabric motifs has been running well and as desired. This implementation test is accomplished by testing the functions. Implementation is carried out with limited trials and relevant parties, such as weaving activists, weaving entrepreneurs, and parties related to culture (Zakir et al., 2021).

The validity testing phase is intended for computer system specialists, specifically the conclusion that a product with a value of 0.80 is valid. The conclusion obtained is that the product design is valid under the attachment of the validity questionnaire.

The practical test for the woven fabric motif digitization system was obtained based on a practicality sheet filled out by the examiners, namely the users, weaving activists, weaving entrepreneurs, and the government. With a score of 93.33, this scoring system determines that the product is usable and practical, in accordance with the questionnaire attachment.

The effectiveness test on the student, extracurricular activity assessment system, was obtained based on the examiners' sheet, namely the users, weaving activists, weaving entrepreneurs, and the government. Therefore, the general product assessment of this system is that it can be used and is practical, with a value of 0.92 under the attachment of the effectiveness questionnaire.

The effectiveness of an information system can be seen from the positive effect in the form of product quality. The test showed that the aspects of effectiveness that an information system needs to fulfill are experts and practitioners who state that the system is effective. Operationally, the information system provides results as expected.

The digitization process found that the woven fabric motifs were used in various regions of Indonesia. Besides motive, it has meaningful symbols for the life of the local community.

D. CONCLUSION

The application of Woven Fabric Motif Digitization was declared valid with a validity value of 0.80, meaning that stakeholders can use the resulting product. In addition, the test obtained a product practicality value of 93.33 which means the product is practical or easy to use by stakeholders. The effectiveness

showed that the resulting product effectively produced information related to woven fabric motifs and the values contained therein, with a value of 0.92.

In conclusion, the woven fabric motif has meaning for local wisdom and religious values that symbolize the people's lives.

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