Development of Dhungkrek Dance Learning Application to Preserve Local Culture Existence

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Abstract: This paper discuss about the development of Dhungkrek Dance Art learning application, where Dhungkrek Dance is one of Madiun local culture that needs to be preserved the existence, as one of Indonesian cultural. A way to participate the preserve these cultures is using information technology to introduce and share knowledge, by adding several multimedia components will add attractiveness and the effectiveness of information delivery. The application will be developed using IGN SDK Framework, which is available in open source platform, so the application can be publicized freely and be further developed by the other developer. The research methodology used in this research is using methods research and development method wich is multimedia development procedure, which focused on product development application. This research expects that the Dhungkrek Dance Art could be raised again and well known by the general public society so it will keep the sustainability of the Madiun local culture.

Keywords: Learning, IGN SDK, dhungkrek,multimedia, Open Source

I. INTRODUCTION

Dhungkrek Art Dance is one of traditional art in kabupaten Madiun that almost extinct and now tried to raise again as a special art and local seeded. Dhungkrek dance itself originates from mejayan village caruban in 1867 , when it led by Raden Ngabehi Lo Prawirodipuro. This dance the answer of Raden Prawirodipuro meditation on Gunung Kidul Caruban. Over the time, Dhungkrek dance less popularity, especially among young generation. Although there are some paguyuban trying to preserve this art, but not enough to raised Dhungkrek popularity. And this art are drowning by other culture such as reog ponorogo , campursari, and single electone entertainment.

Along with the development of information technologies, computer and internet media can be an alternative used to introduce back Dhungkrek Dance Art. Information technology can combine various media covering text, picture, audio, video, and animation for learning and education purpose [1] . Besides that the development of open source based applications are also getting faster, in Indonesia begins with the declaration of Indonesia Go Open Source or often known with the term IGOS, shown by mutual agreement of five minister in 30 june 2004, namely the minister of research and technology Mr. Hatta Rajasa, minister of The Communication and Information Mr. H.Syamsul mu' arif, minister of Administrative Reform Mr. H.M. Feisal Tamin, minister of The Justice Secretary and Human Rights Mr. Yusril Ihza Mahendra and minister of The National Education Mr. Abdul Malik Fadjar [2].

One of programming framework application wich developed by Indonesia was IGN SDK, the development of IGN SDK itself is part of the development of Indonesia national operating system "igos nusantara" during it's consistently developed by LIPI. It is expected by this application would be more application developers unnecessary troubled by the issue of license or application usage piracy.

Therefore in this study will be developed an application that can help the introduction and study of Dhungkrek Dance Art. Application will be developed using programming application IGN SDK, so that developers not bothered to the issue of license and also provides developers opportunities for further development. And the application would be developed with multimedia components, thereby increasing the attractiveness of the developed application as shown by [3] and on the development of earthquakes mitigation learning application by [4]

Result of this research is an application that can be used as an introduction and learning media of Dhungkrek Dance Art for general public, and the applications will be developed as open source so users can disseminate and modify the application without have to worry about the license issue, in addition also allows next developer for further develope.

II. LITERATURE REVIEW

Learning media plays a big role in a learning process. According to Latuheru [5], that media is all forms of an intermediary used by humans to share idea. If the media was carrying messages or information that aims to instructional or containing potential teaching media it is called a learning media. Benefits of learning media is to help people learn optimaly and to facilitate interaction between people and fasilitator so as the purpose of learning achieved. According to Kusumah [6], benefits of learning media among others clarify the presentation of a message so as not too verbalistic, overcome to the limited number of space, time and resources the senses, and can give rise to same perception against an issue. Then, based on theory from Supriyanto [7] the application of is a having activity processing command it takes to execute user request with a certain goal. According to Simarmata [8] the application of is a or a group of program designed for use by the user the end (end user). Application can be used for the purpose of learning to students recalling to a learning there should have been interactions among components learning. One

approach learning that allows between the components learning was learning interactive.

Before the 1980s or in the 60, according to Sunaryo [9], multimedia are defined as a collection of of tools of different media used to presentation. After the 1980s, multimedia is defined as the delivery of information interactive integrated which includes text, a picture, sound, video or animation [10]. Multimedia can be used to learning so that it can be stimulate the mind, feeling, concern for and interest students to achieve a purpose learning. In general multimedia learning have benefit to to facilitate interaction teachers and students would attract students in learning.

In developing interactive multimedia based learning media takes many ways to generate good media. One way is to apply the procedure of instructional media development. According to [11], the development of instructional media is divided into six steps: analyze the needs and characteristics of users, formulation of instructional objectives, Formulation of material content, Developing score parameter, Script media content, and Conducting tests and revisions. According to Criswell [12] there are ten stages of the development of multimedia learning, it is Conduct environmental analysis, Conduct knowledge engineering, Establish goals and instructional objectives, (Sequence topics and tasks, Write courseware, Design each frame, the computer program, Produce Accompanying documents, Evaluate and revise, Implement and follow up. Meanwhile, according to Ariesto [13] there are six stages as learning multimedia development steps, it is concept, design, collecting materials, assembly, testing, and distribution.

The term Open source is now familiar in the community, because now many open source based application build and no need license to use it, so that could be an alternative solution for licensed applications. From Gozali and Lo [14], definition of Open Source is a software development method that utilizes inputs from developers scattered all over the world with different backgrounds and transparent process, so that anyone could and allowed to make modifications or develope. With open source expected would be more software build which is have a good quality, reliable, flexible, cheap and no longer paid to a particular vendor. Some licenses are often found in open source software include: GNU Public License (GPL), the Apache License, the Mozilla Public License (MPL), and many others. And an application can be said to be open source if meet the following criteria:

1. Applications can be distributed free of charge, does not forbid to sell or give away the software as a component of other software development.
2. Applications development must include source code and are allowed to be distributed, including compiled code.
3. Prohibit to distribute the source code in a form that has been modified, without the original source code from the manufacturer.
4. Prohibit discrimination program usage for individuals or groups.
5. Prohibit discrimination program usage for specific fields (business, research, education, etc.).
6. The license does not require that all programs distributed on the same medium must be open source software [14].

The development of applications using open source technology is much faster, more effective, and less cost when compared with other software engineering that requires a license in use, product development and innovation will be easier to do [15][16][17].

III. DEVELOPMENT METHOD

The research methodology to build the application used in this research was Research and Develop Methods, where this research oriented to product development application. Into the products research be tested for the extent of the development effectiveness level. For procedure the development of which used referring to once used to research [13]. Where there is six stage, it is concept, design, collecting material, assembly, testing, and distribution.

Concept—At this stage arranged the development concept to performed, started by literature study from former research and later concluding problems concerned about how to preserving the local culture. And how to implement the open source platform to build the learning application.

Design—After doing the problem analysis from the concept stage before, then arrange the design the Dhungkrek Dance Art learning application. Started by creating user interface design and interface structure for the application to be built. Next preparing the IGN SDK framework to build the application.

Collecting Material—After doing design, the next step is to do the acquisition items on Dhungkrek Dance Art which include history, figures, videos, and a musical instrument used.

Figure 1. **Material Data (Action Figures Photos)**

Assembly—When design and data acquisitions completed the next step is to do a material compilation that has obtained into the application. And then it was uploaded to a server for the website version.

Testing—After the application had finished to built, then it tested and reviewed by the media expert especially about the content. Testing carried out in two stages, namely alpha and beta testing testing. In the alpha phase of testing conducted feasibility validation by media experts and material expert. Validation of the application in terms of learning media performed by 3 experts media. Validation is

done by filling out a questionnaire assessment of applications with a choice of five ratings ranging from very decent to very unfit. Aspects assessed on a media expert validation and coloring are aspects of language, multimedia design, and programming. Validation of the material performed by 3 experts material, two person lecturer of communication departement from Merdeka Madiun University and one from Dungkrek Dance performer.

Validation is done by filling out a questionnaire assessment by taking relevance of the material content in the application. Assessed aspects by material expert on this validation is the material aspects of learning, interaction, presentation materials, and feedback. Revisions to the learning application is done according comment or advice from media experts and material expert.

At the stage of beta testing, applications tested to the respondent. Testing the application of interactive learning to know about Dungkrek

Dance is done in dancing study group at Merdeka Madiun University. Respondents of this application is the student of Merdeka Madiun University as many as 30 students with an age range of 19-22 years. Aspects considered that the programming aspect, the security aspects of the program, aspects of user interaction and reaction, and aspects of learning.

Distribution—When the testing stage is clearly eligible, then the application build into rpm version so that the application could installed on rpm based Linux operating system.

IV. RESULT AND DISCUSSION

From the research activities according to development method, so at the time was successfully build Dhungkrek Dance Art learning application on website version and rpm version, where it can be accessed by internet browser or application menu at Fedora-based operating system. The main page is shown in the picture below, at main page it has several menu and submenu such as history, philosophy, character figure, music tools, Madiun city, videos.

The overlay history page dance dhungkrek presented in box form with scrollbar on the right side as seen in figure 2. The history content of Dhungkrek dance can be read from top to down by pulling scrollbar. At this page displayed story complete story about the early history of Dhungkrek Dance Art.
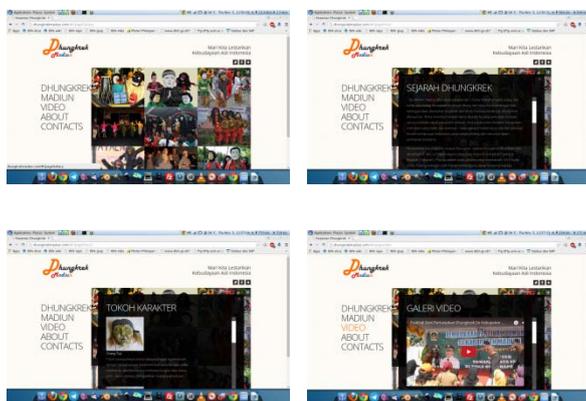

Figure 2. **Application Interface**

Then for analysis measurement from the result of application developed, this research uses quantitative data obtained from feasibility assessment. There are three measurements which are eligibility assessment from media experts,

Then for analysis measurement from the result of application developed, this research uses quantitative data obtained from feasibility assessment. There are three measurements which are eligibility assessment from media experts,

eligibility assessment for the content material, and eligibility assessment for general public. Quantitative data derived then calculated using the formula adapted from rizkiansyah [1] research. Then converted into qualitative value by comparing a score from the reviewer with an ideal score calculated from conversion table reference as follows :

Score	Category
$x > Xi + 1,80\ Sbi$	Very Feasible
$Xi + 0,60\ Sbi < x \le Xi + 1,80\ Sbi$	Feasible
$Xi - 0,60\ Sbi < x \le Xi + 0,60\ Sbi$	Quite Feasible
$Xi - 1,80\ Sbi < x \le Xi - 0,60\ Sbi$	Not Feasible
$x \le Xi - 1,80\ Sbi$	Very Not Feasible

Table 1. **Scoring Criteria**

where (Xi) was Ideal Average Score which is 1/2 x (Maximum Score + Minimum Score), (Sbi) was Ideal Deviation Score which is 1/6 x (Maximum Score – Minimum Score), and X was Average score from implementation.

after we have count the quisioner result we have score as follows :

No	Respondent	Score	Category
1	Media Expert	70,34	Feasible
2	Material Expert	82,00	Very Feasible
3	Students	87,76	Very Feasible

Table 2. **Scoring Result**

Application of Dhungkrek Dance Learning are able to use as a medium of learning. Development is done in accordance with procedures in research and develope method. Testing is done with two stages of testing, namely alpha testing and beta testing. Thus based on the assessment from experts and students, this application fit for use as a medium of learning in Dhungkrek Dance learning conveying about history and dance performance.

V. CONCLUSION

Based on the results of this research with research and development method it can be concluded as follows:

- The development of Dhungkrek Dance Learning application performed by five stages of development procedures, it is (1) concept, (2) design, (3) material collecting, (4) assembly, and (5) testing.
- Feasibility level study by media experts reviewed based on validation and test results to users. The average appraisal of material expert which is 82,00 in the category very feasible, a feasibility assessment of media experts is 70,34 in the category of feasible, and from Dance Study Group of Merdeka Madiun University get the average value of 87,76 in the category of very feasible. Thus the application of Dhungkrek Dance learning Application fit to use as a medium of learning that can be used for independent learning for general public.

VI. ACKNOWLEDGEMENTS

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