

# Developing Interactive Multimedia for Macramé Learning for Grade VIII Students of SMPN 1 Ngemplak

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**Abstract**—This research and development study aimed to develop a model of interactive multimedia for macramé learning for Grade VIII students of SMPN 1 Ngemplak to satisfy their needs in macramé learning. The research procedure was as follows. The first was a preliminary study through observations, interviews, and documentation to collect materials to determine macramé learning materials for Grade VIII by analyzing competency standards and basic competencies in the School-Based Curriculum, lesson plans, and textbooks. The second was the product design by making a flowchart, storyboard and story plot, navigation structure, design visualization, and product construction. The third was the product validation by the materials expert, media expert, skills teacher, and students as tryout subjects. The data analysis technique in the study was the qualitative analysis technique. The data trustworthiness was enhanced by triangulation involving the media expert, materials expert, teacher, and students. The result of the study is a product of interactive multimedia for macramé learning for Grade VIII students of SMPN 1 Ngemplak in the form of DVD, processed by using Adobe Flash CS6, the product design using Corel Draw X7, and the tutorial video using Corel Video Studio Pro X5. The interactive multimedia contains introductory materials, i.e. definition and history of macramé, main materials, i.e. sample macramé works, tools and materials in macramé making, macramé basic knots, and macramé bracelet making equipped with a tutorial video, and evaluation in the form of multiple-choice items. The materials display design is completed by color pictures audio music which can make the learning atmosphere more enjoyable. The interactive multimedia product was validated by the materials expert assessing the aspects of learning and materials/contents, the media expert assessing the aspects of display design and programming, the skills teacher assessing the four aspects, i.e. learning, materials/contents, display design, and convenience of use. Finally, the experts stated that the multimedia product was appropriate to be used as learning media. Then, it was tried out to Grade VIII students, i.e. Ludvia, Manggar, Drastian, Fina, and Lutvia. In the tryout implementation, it was found that the use of pictures, texts, audio and video in the interactive multimedia for macramé learning was capable of improving the students' attention. Trough the interactive multimedia for macramé learning the students' found it easier to understand the contents of the materials.

*Keywords*—interactive multimedia, macramé

## I. INTRODUCTION

Modernization of technology becomes a trigger medium for the faster information that will be obtained every time people, and also become one of the tools used to achieve more educational goals effective and efficient. Basically, the

achievement of educational goals will go through a process interaction between teachers and students will be more dominant, therefore relationships reciprocity that occurs between teachers and students must be able to take place conductively and mutual support. Education is a stage carried out by humans to change attitudes, behavior through learning.

The curriculum in Indonesia has always prioritized the role of students in activities teaching, learning and obtaining broader information of knowledge. Role of a person educators become facilitators and tutors of students are more important. Basically, active role students in learning in this modern age are a major need, how students can search, understand, process and interpretation their knowledge or knowledge get with themselves. But it is unfortunate if you only rely on student activity in the learning process, especially if there are passive students, because they will tend to get bored and forget about the material that has been delivered.

The process of helping students to understand and master a number of abilities, knowledge, and the skills taught by teachers are learning activities. As stated by Komara [1] learning is "assistance provided by educators to occur the process of acquiring knowledge and knowledge, mastery of skills and character, and the formation of attitudes and trust in students "Similar opinion was also expressed by Suhana [2] who stated that, "The learning process is a process of collaboration between students with students, between students and their teachers, and between students and their environment ", in other words, learning will not run without the presence of educators, students, and the message component itself is the subject matter.

Various problems arise in the learning process, one of them is when the teacher delivers subject matter cannot be understood by students to the fullest, it is caused by limitations of learning media used by teachers Developing quality in the field of education need to take steps in the learning process, one of which is with the media learning [3, 4, 5]. The use of good learning media has a relationship with the subject matter delivered by the teacher must be more creative in developing learning strategies, by utilizing modern technology the teacher can choose the right media so that the learning process can work with maximum Ability to utilize modern technology in the effort to develop education of course only very much depends on the number and ability of experts in the field of educational technology [6].

In helping the learning process, modern technology continues to develop, but strategies are still needed to find the right learning media so that the learning process teaching can run more effectively, interactively, and independently Learning activities Skills at SMPN 1 Ngemplak, especially in class VIII, teachers tend to use the lecture method and training, as well as presentations with projectors to display power point slides and videos. The training method used by the teacher also still uses common methods Lack of media innovative and creative learning will make students as passive individuals. Other than that, the absence of interactive media that can trigger students to learn and understand learning about makrame.

Based on these problems, researchers develop interactive multimedia as a solution can be used to study, both at school and learning. Multimedia is a tool that can display interactive presentations that combine text, graphics, animation, the audio and video [7, 8]. Interactive Multimedia learning makrame this is one of the innovations media learning makrame [9]. A Media-based computer is shaped an arranged and processed in such a way for the sake of learning makrame [10]. This app gives understanding of the material through the interactivity and the provision of video tutorials. To facilitate the students in understanding the material in the form of shapes and images, the researchers developed learning media multimedia interactive that can be used for learning mandir, so that the learning process should not be done in hours school lessons, but it can be done at another time and in another place.

Based on the results of observation in the school and hasi interview with Mr. Supriyanto as a teacher skill in SMPN 1 Ngemplak, learning media used during this already using facilities in the form of a projector to display power point slides and video. However, the barriers when the learning process takes place, namely the limitations of the time allocation of 2x40 minutes each week, time is less so that the student's difficulties in terms of practices. Then the required media that can facilitate the teacher to learning independently. The author tries to do research and development that aims to facilitate teachers in the teaching and learning process well in school and outside of school hours, so the learning time becomes more effective and efficient. The development of interactive multimedia as a learning medium makrame for the students of class VIII SMPN 1 Ngemplak is also easier for students to learn independently and work through the application, so that students can arrange time and place as desired.

The rest of this paper is organized as follow: Section II describes data and proposed methods. Section III presents the obtained results and following by discussion. Finally, Section IV concludes this work.

## II. MATERIAL AND METHODS

Type of research used in this study is research and development (R and D). Research was conducted in SMPN 1 Ngemplak and done in the month of April s/d September 2016 done in the first semester of the school year 2015/2016. Subject this research is students of class VIII SMPN 1 Ngemplak. Object the research is a multimedia interactive learning makrame or the results of the development.

## III. RESULTS AND DISCUSSION

### A. Preliminary Study

Material need obtained from the results of observation, and interviews with teachers the skills that give the conclusion that the belunm available multimedia interactive that can be used as learning. Media that is used when learning in classes are still limited, namely by the method of lectures, use of power point slides and the use of media learning the general form of the material props. When learning with the lecture method and using power point slides the students were less enthusiastic so do not pay attention to the material delivered. Furthermore, an interview with some of the students of class VIII found the problem that the media of learning that is used today is less fun, and a variety of reasons that makes the student saturated in the classroom, so that students are less enthusiastic in following learning delivered by teachers. The scheduled time in the learning skills also limited, because the time must be divided by the hours of theory and practice. Therefore, it takes a media that can help teachers explain the material becomes easier and to meet the the needs of students who can help and can be used for independent learning.

### B. Design Product

Design product is the development through various stages, from the design flowchart, storyboard and storyline, structure of navigation, design visualization, and drafting. Results the draft is then incorporated in the form of interactive multimedia applications. Making multimedia is done using the software Adobe Flash CS6 to create animation and button-the menu button of the application. Display design using the software Corel Draw X7, and for editing video tutorial on using the software Corel Video Studio Pro X5.

### C. Product Validation

#### 1). Material Expert Assessment

Expert material assessment process by Ismadi, S.Pd., M.A. lecturer of the Kriya Education Faculty of Language and Arts Yogyakarta State University. Assessment includes two aspects, namely aspects of learning and aspects of content / material. The assessment process lasted twice and then the media was declared to be feasible to be tested.

#### 2). Media Expert Assessment

Media expert evaluation process by Drs. Kuncoro Wulan Dewojati, M.Sn. lecturer of the Language and Arts Faculty of Arts Education Yogyakarta State University. Assessment includes two aspects, namely programming aspects and design aspects. The assessment process takes place once and then the media is declared to be feasible to be tested.

#### 3). Skills Teacher Assessment

An assessment of interactive multimedia was conducted by Skills teacher at Ngemplak 1 Junior High School, Supriyanto, because the Skills teacher was a teaching figure who was considered to know the state of learning in the field. Assessment is done by running an interactive multimedia application of makrame learning, then giving advice and input through the interview phase based on interview

guidelines that contain four aspects, namely: learning aspects, material / content aspects, design aspects and programming aspects. Multimedia is considered capable of making a new innovation in makrame learning that can motivate students in learning. This is also supported by comments in the interview stating that, this multimedia material has fulfilled the success of the indicator and is appropriate to be used as learning, as well as making students easier to understand, because basically this media is interactive so students can repeat the material by running the application. Based on the results of the interview, it was concluded that interactive multimedia learning makrame eighth grade students of SMPN 1 Ngeemplak can be used as a medium of student self-learning.

#### *D. Product Trial*

The product testing phase is a stage to find out the student's response. The assessment was carried out on VIII grade students of SMPN 1 Ngeemplak in a limited amount. The trial phase is carried out by the number of students of five children. Trials with students were conducted only once for five eighth grade students. Students are randomly selected by skill teachers, these students are, Ludvia Prameswati from class VIII F, Manggar Vona AS from class VIII A, Drastian Mihatma Sari from class VIII A, Fina Ania Mufida from class VIII E, and Lutfiana Maulida R. from class VIII C. The trial session begins with introducing interactive multimedia to and then explain how the application was used Initially students felt confused in operating multimedia, it was because they had never used multimedia interactive learning. But after being directed, they were able to easily run the multimedia. Diving the multimedia application makrame students look cool and actively ask questions, and pay attention to the material presented. One student asked, why is the sheep used as a mascot? The researcher explained that, the fleece is one of the ingredients for making yarn, while the main ingredient for making makrame is yarn or rope, so that the sheep are chosen as mascots because they are able to represent the elements in makrame, besides that the mascot is also made with funny characters. Next is the interview session, there are 15 questions that must be answered by each student.

The results of the trial in the form of responses to interactive multimedia from the five students found that this multimedia was interesting, cool to use as a learning medium. They are very interested in the components presented in multimedia in the form of pictures, audio and video. Their input regarding interactive multimedia is to disseminate multimedia learning to schools. In addition, students also provide input, it is better to add music to be more diverse, but not good. The researcher did not follow up on this suggestion because background music was chosen by adjusting the background design, so that there was unity between the background and music. When using this multimedia simultaneously audio or music will make it noisy, because all laptops make their own voices and make the learning atmosphere less comfortable. Researchers suggest that learning with multimedia like this uses tools such as headsets so that students will not be disturbed by other sounds outside of multimedia. In the implementation of the experiment.

On the trial of test, was found that the use of images, texts, audio and videos in multivmedia interactive social lessons

more increasing students'attention. Through the multiactive media of interactive training this realm turned out a student could be easier understanding the contents of the matter. It can be seen from the response that the fifth of the students were given by the five students, who gave the response that they were multiply learning this massive media social media, and the multimedia media social - training is easily used because this media is easier to use this online multimedia to be equipped with the use of the use of the use of the new infatuating instructions and the following of the users to understand material. Multi Media is also able to motivate student to work more creative with makrame techniques as he wants.

According to the data results, media media media is worth more and can be used by students, given the result in the field that achieves the purpose of this research destination. Students can choose the ingredient who wants to be learned by pushing the button from the aed pattern that's been provided. Multitmedia is an application used for independent instructions so students can operate it according to the place and the desired time. After learning material, the next student can work on some of the multiple choices that have reformed at the murvity as the successes of student study.

#### IV. CONCLUSION AND RECOMMENDATION

Based on the results of research and development of interactive multimedia products learning makrame VIII grade students of SMP 1 Ngeemplak, it can be concluded that the need for making interactive multimedia learning makrame that has been done through three steps of development, namely preliminary study, conducting studies and gathering information in the form of interview data with a teacher of SMPN 1 Ngeemplak, and grade VIII students, who concluded that the unavailability of interactive multimedia learning makrame that can facilitate teachers and help students to learn independently, and can be used as an effective medium for learning, because the time allocation limited and must be divided into hours of theory and practice. Therefore, it is necessary to develop interactive multimedia learning makran class VIII SMPN 1 Ngeemplak which can help teachers in learning, as well as facilitate students to learn independently.

2) Product design, multimedia products produced using interactive multimedia applications that are packaged in DVD form. The application is designed using Adobe Flash CS6, product design using Cor Draw X7, and video tutorials using Corel Video Studio Pro X5. The application contains material introducing makrame namely, understanding and history of makrame. The core materials are examples of makrame works, tools and materials for making makrame works, makrame basic nodes, and creating makrame bracelets that are equipped with evaluation video tutorials in the form of multiple-choice questions. The material display design is equipped with colored images, and audio music that can make the learning atmosphere more enjoyable.

3) Validation of the product, the product validation stage involved the role of the material expert by Mr. Ismadi, a lecturer at the UNY Craft Education, the assessment process took place twice until finally the media was declared feasible to be tested. Media expert by Dr. R. Kuncoro Wulan Dewojati, a lecturer in UNY Fine Arts Education with a one-time assessment and then the

media was declared to be feasible to be tested. Assessment according to Mr. Supriyanto the teacher of SMPN 1 Ngeemplak skills with the conclusion that this multimedia is right to be used as learning. Whereas the trial of the eighth-grade students concluded that this multimedia was fun to use as learning, and made it easier for students to learn

#### A. *Suggestions*

Based on the results of research and development of interactive multimedia, the makrame learning is obtained, the suggestions given are: 1) For SMPN 1 Ngeemplak, it is better to utilize this interactive multimedia learning as an alternative in the learning process and add more collections of other multimedia products. 2) For skill teachers, it is better to overcome the problem of learning time by using this interactive multimedia that has been validated. 3) For students, to be more active in accessing and utilizing interactive multimedia that has been given to study independently.

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