DEVELOPMENT OF MULTIMEDIA APPLICATION STUDIO VIRTUAL KARAWITAN SUNDA USING CONCEPT MULTIPOINT CASE STUDY SMK N 10 BANDUNG

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ABSTRAK

SMKN 10 Bandung is the Vocational High School which is devoted to the art of Sundanese culture that has Karawitan Art Skills Program since 1958. Students are also required to understand how to play instruments and materials musical knowledge. Where things can only be done by laboratory work in a studio that provides the means to support learning Sundanese gamelan musicians. The process of musical learning at SMK N 10 Bandung, where teachers deliver material musical arts with the lecture method. But there are some material in musical arts can not be taught by lecture method. And the involvement of students in the practice of playing a musical instrument gamelan Sunda, where the number of students in a class average of 45 people, led to a group with a maximum of members of 6 people, so that in one meeting 5 groups play a musical instrument musicians and their groups can not play a musical instrument Sundanese gamelan in one meeting. Lecturing done by teachers felt less effective. It is expected the tools to support the process of group learning which can simulate the activity in the studio to add value to learners. Conclusion The development of multimedia applications Sundanese gamelan virtual studio can assist learners in understanding the musical arts and learning materials to help learners play a simulated musical instruments.

Keywords: *multipoint, Studio Virtual, Sundanese musical, Multimedia Application*

1. PRELIMINARY

1.1 Background

The learning process Karawitan Art Skills Program at SMK 10 Bandung requires that students understand how to play instruments and materials musical knowledge. Where things can only be done by laboratory work in a studio that provides the means to support learning Sundanese gamelan musicians.

The process of musical learning at SMK 10 Bandung, where teachers deliver material musical arts with the lecture method. But there is some material in musical arts can not be taught by lecture method. And the involvement of students in the practice of playing a musical instrument Sunda. Lecturing done by teachers felt less effective. Development multimedia application virtual studio musicians Sunda can assist learners in understanding the learning material musical arts and Helping learners play simulation tools karawitan for learners who could not play instruments karawitan significantly by using the concept of Multipoint used to build applications education for schools that have limited technology infrastructure to support the learning process in groups..

1.2 Purpose and Objectives

The purpose of this research is to develop a multimedia application virtual studio Sundanese gamelan as a musical learning support for students of class X in SMK Negeri 10 Bandung. While this research aims to:

1 Helping learners in understanding the learning material musical arts.
2 Helping students play simulated musical instruments for students who could not play musical instruments significantly.

2. RESEARCH CONTENTS

2.1 Literature Review

2.1.1 Multimedia

Multimedia comes from the word and multi media, multi or in Latin called nouns meaning many and media or in Latin is called a medium which means the intermediary or conductor. Understanding other multimedia objects into the multimedia section is divided into several types, namely [1]:

1. Text

Text is the basis of word processing and multimedia-based information that aims to deliver / present information to the user.

2. Image

Image is one excellent means to present information for the user (human) is strongly oriented towards visual / sight.

3. Animation

Animation is a series of images arranged in sequence, otherwise known as frame. The composition of the image displayed composed and with a certain time then the composition of the image will appear to move.

4. Audio

Audio or sound may also explain the characteristics of an image such as sound effects.

5. Video

Video is the most complex multimedia elements for delivery of information is more communicative than the regular image.

6. Interactive Link

Combining several multimedia elements to create integrated information for accessing information on multimedia (linear and non-linear).

2.1.2 Virtual Studio

According to Big Indonesian Dictionary (KBBI), the school laboratory rooms under the supervision of an educational institution to conduct practical exercises.

Virtual Studio is a set of media that is packaged in an integrated and interactive, which is operated by a computer and can simulate the activity in the studio as if the user is at the actual studio.

Virtual Studio included in the interactive multimedia can be defined as a combination of various media are packed (programmed) in an integrated and interactive way to present messages specific learning [2].

According Suprihanto (2009) are two important components in the virtual studio, namely: simulation and animation. Simulation aims to describe the real environment in a system. Through simulation the participants can experiment with how the replacement value of parameters, giving rise to different behaviors which are then displayed through animation [3].

2.1.3 Sundanese Karawitan

"rawit" which means smooth, beautifuls (Prawiroatmodjo, 1985: 134). And "ngarawit" word which means a work of art that has the properties of a subtle, intricate, and beautiful (Soeroso: 1985; 1986). Of the two it can be interpreted that the musical arts in touch with something subtle and complicated. Subtlety and complexity in the musical arts are apparent in the musical offerings as well as other accessories.

Raden Angga Machyar Kusumadinata, Sundanese musical expert. He created the theory and a new term to describe the tone and tunings. The existence of two kinds, namely pelog pelog pelog seven five tones and tone on the instrument pelog were imported from Java.

2.1.4 Windows MultiPoint SDK

Microsoft MultiPoint SDK is a framework that provides a development environment where developers can develop applications that allow up to 25 simultaneous mouse works in one computer. MultiPoint SDK is mainly used for building educational applications for schools that have limitations in terms of technological infrastructure so that more learners-learners who may come into contact with computers. The pilot program has been tested in India by Microsoft Research shows the benefits of this technology for some subjects, such as collaborative learning technology Multipoint enhance the learning process when compared to the scenario of the learners of the computer [4].

According to Microsoft Research in a large class, not all learners to participate in classroom discussions. This makes it difficult for teachers to accurately measure whether students understand the material presented. MultiPoint presents a unique opportunity for teachers to periodically poll the students to determine the level of understanding at a certain time. The poll can take the form of a quiz in which the correct answer is given points. Usage scenarios above present MultiPoint application examples that you can build to help the learners to have fun and learn while utilizing computing resources available to them [4].

2.2 Discussion

2.2.1 Summary of Multimedia Application Studio Virtual Karawitan Sunda

1 Application can replace the mouse cursor learners up to 6 different cursors.
2 Applications can present the material Karawitan Knowledge Base.
3 applications can present the material Karawitan Basic Techniques: Gamelan.
4 Applications can present material Karawitan Basic Techniques: Titilaras.
5 Application can show you exercises and assignments that are already on the system randomly.
6 Applications may correct answers from the exercise and assignment immediately after the exercises and assignments have filled all of the learners.
7 Applications can display video musical: how to play the instrument.
8 Applications can display directly play musical instruments that do learners.
9 Applications can display instructions for using the application.

2.2.2 Problem Analysis

Analysis of the problem is the elaboration of any problems that existed before the construction of applications and intends to help teachers, students of class X in conducting learning activities Karawitan Art Skills Program at SMK N 10 Bandung. Existing analysis includes the following:

1. Method of teaching teachers in presenting the material where it remains fixated on the lecture method makes it difficult for learners to understand the material musical arts.
2. The involvement of a group of learners who can not play a real musical instrument in one meeting practicum.

2.2.3 Applied System

Teaching and learning activities among students of class X SMK 10 Bandung future will be written the running system. The current system can be seen from the description of teaching and learning activities as follows:

1. Processes Material

The process of giving material that received the students of class X SMK Negeri 10 Bandung with the lecture method performed by the teacher heard and recorded by learners. Teachers can interact with students by asking all material unfamiliarity described later clarified for learners who do not understand the explanation of matter to understand the students and then teachers can end a lesson. The process of giving the material can be seen in Figure 1.

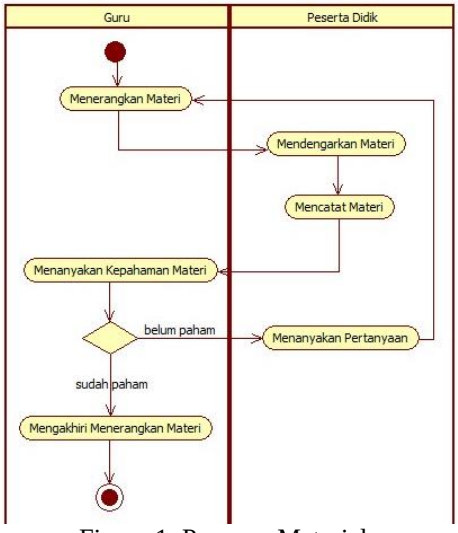


Figure 1. Pressess Material

On the implementation of the program to be built the provision of material taken from the subject matter Karawitan Basic Sciences and Engineering Karawitan base class X with reference to source material from RPP SMK N 10 Bandung.

2. Processes Exercise and Assignment

The process of assigning exercises and assignments have accepted the teaching and learning activities of students of class X SMK Negeri 10 Bandung with questions and tasks that have been created by a teacher, then worked learners to complete. Teachers assess the results of exercises and tasks and then announce to the students, and make recaps of the value that has been done learners. The process of assigning exercises and assignments can be seen in Figure 2.

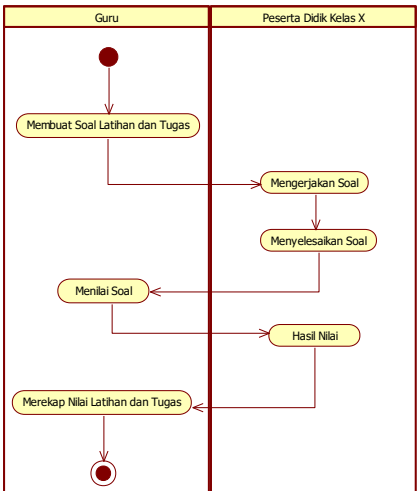


Figure 2. Processes Exercise and Assignment

On the implementation of the program to be built process of training and tasks took questions from the subjects of Basic and Engineering Sciences Karawitan Karawitan on the basis of class X with reference to source material from RPP SMK N 10 Bandung. Where the matter in the form of multiple choice with 10 questions, with details 3 about subjects Knowledge Karawitan Basic and 7 about Mechanical Karawitan Basic consideration input from Mr. Maman Suryaman as Chairman of the Department of Art Karawitan at SMK N 10 Bandung, he said is more effective when it matters These exercises and tasks that include multiple-choice Subjects Karawitan Basic Sciences and Engineering Basic Karawitan

3. Process Written Exam

The process is a written exam test activities conducted both learners Middle Semester Exam and Final Exam received students of class X SMK Negeri 10 Bandung with questions that have been created by a teacher, then worked learners to complete. Teachers assess the results of the exam and then announce to the students, and make recaps of the value that has been done learners. Written examination process can be seen in Figure 3.

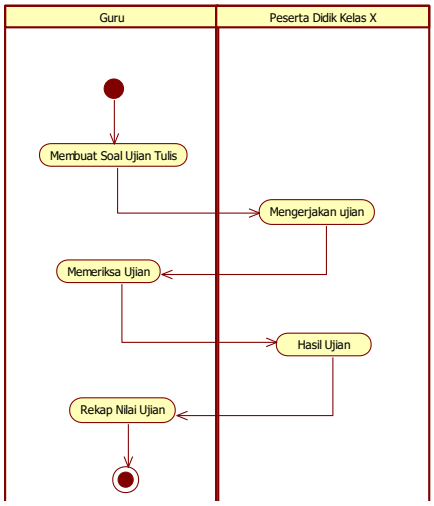


Figure 3. Process Written Exam

On the implementation of the program to be constructed process of Written Exam Written Exam is not included due to being carried out simultaneously in with predetermined and look at the condition of the stretcher is not possible to do a written exam on the program to be built.

4. Practical Examination Process

The practical examination process is conducted activities learners exam conducted by a group of musicians perform basic lab work, judging from the unity and harmony of the group's value is taken as a group and also individually. Practical examination process can be seen in Figure 4.

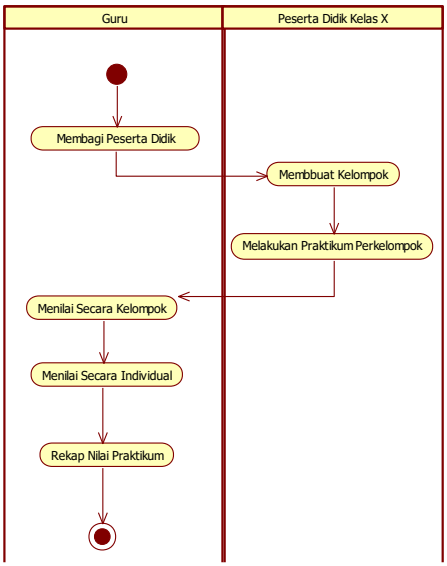


Figure 4. Practical Examination Process

On the implementation of the program to be built the lab test is not included because the lab test performed in a predetermined time and look at the condition does not allow it to perform lab tests on the program to be built

2.2.4 General Overview of the system

General overview of the system is a depiction of the stages of use of the application to be built. The stages as follows:

1. Learners are divided into 7-8 groups in the same class as consisting of a maximum of 6 people.
2. One group received 6 mouse for each member of the group holding the first mouse to be able to play a musical instrument Sundanese gamelan.
3. Each group will be presented subject matter of basic musical knowledge and basic musical techniques.
4. Each group will be presented video Sundanese musical instrument use.
5. Each group will play a musical instrument Sunda one learner holding an instrument made in one group plays six musical instruments Sunda maximum because one group has 6 members.
6. Each group was given exercises to answer the practice questions provided by the application in the form of multiple choice is expected to help the value of the group.
7. Each group can see the instructions of the application, the sources used in building this application on the user menu.
8. The learners get a mouse that could play a Sundanese gamelan musical instruments in one group.

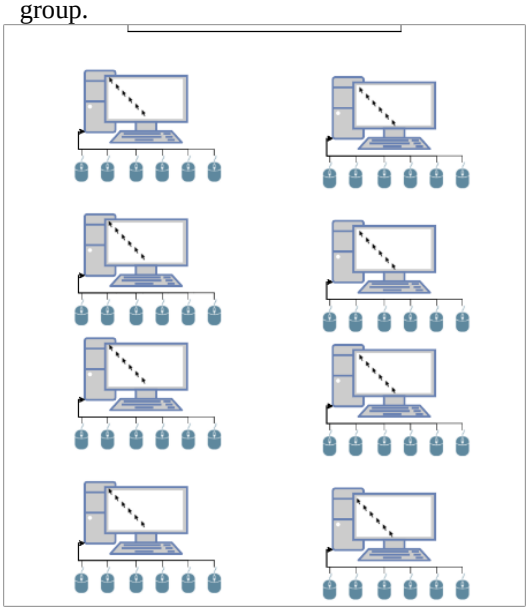


Figure 5. A General Overview of the System

2.2.5 Use Case Diagram

Use Case Diagram is the highest part of the functionality of the present system which will describe how a person or actor will use and exploit the system. The diagram also describes what will be done by the system. Use Case consists of three parts,

namely the identification of actors, identification Use Case and Use Case scenario.

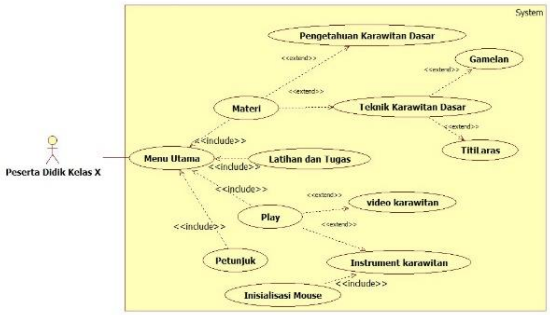


Figure 6. Use Case Diagram Studio Multimedia Applications Virtual Karawitan Sunda

1. Actor Definitions

Table 1. Actor Definitions

No	Actors	Specifications
1	Peserta Didik kelas X	Learners class X is the type of users who can use Access feature material features Karawitan Knowledge Base, Access Features Mechanical Karawitan Basic, Access feature exercises and assignments, Access Play feature Instruments, Accessing the video play, Access Directive

2. Use Case Diagram Definitions

Table 2. Use Case Diagram Definitions

No	Use Case	Deskripsi
1	Inisialisasi Mouse	Register at the library multipoint process, calculates and display how many mouse
2	Menu Utama	The process of selecting Menu Initialize Mouse, materials, Exercises and tasks, Play, and Hints
3	Materi	Showing page Material Karawitan
4	Pengetahuan Karawitan Dasar	Showing page Karawitan Basic Materials Knowledge
5	Teknik Karawitan Dasar	Showing page Karawitan Basic Materials Engineering
6	Titi Laras	Showing page Material Titi Laras
7	Gamelan	Showing page Material Gamelan
8	Latihan dan tugas	Showing Exercises and assignments Karawitan
9	Play	Showing page Play
10	Instrument Karawitan	Playing a musical instrument by learners
11	Video Karawitan	Showing video how to play musical instruments
12	Petunjuk	Showing Instructions for use application

2.2.6 Class Diagram

Class Diagram is a picture of the structure and relationship of each objects running on the system. In this diagram depicted attributes and methods that exist in each class. Adapaun overview class diagram of the Multimedia Application Studio Virtual Karawitan Sunda built can be seen in Figure 7.

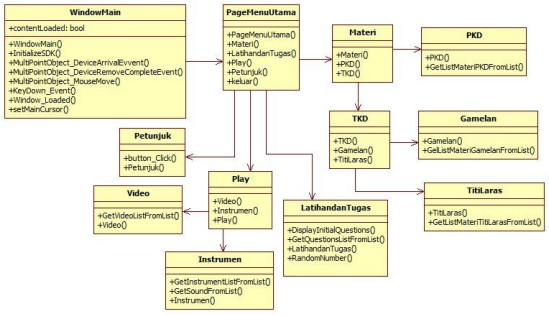


Figure 7. Class Diagram Studio Multimedia Application Virtual Karawitan Sunda

1. Class Diagram Descriptions

Table 3. Class Diagram Description

Class	Descriptions
WindowMain	Is the main class that contains some common functions when the form is opened, the function of the introduction of the mouse is in this class.
PageMenuUtama	A class that handles display Home
Materi	A class to display a Material
PKD	A class to display a material Karawitan Basic Practicum
TKD	A class to display material Karawitan Basic Techniques
Gamelan	A class to display material Karawitan Basic Techniques: Gamelan
TitiLaras	A class to display material Karawitan Basic Techniques: TitiLaras
LatihandanTugas	A class for displaying Exercise and Assignment
Play	A class to display the Page Play
Instrumen	A class to display the instruments that can be played learners

Video	A class for displaying video that can be watched learners
Petunjuk	A class for displaying user application usage

2.3 Research Result

At this stage, the application interface design results in a system built using software that has been described in section software implementations. Here are some of the user interface has been implemented.

1. Implementation Interface Main Menu Page



Figure 8. Implementation Interface Main Menu Page

2. Implementation Interface Materi Page



Figure 9. Implementation Interface Materi Page

3. Implementation Interface Pengetahuan Karawitan Dasar Page



Figure 10. Implementation Interface Pengetahuan Karawitan Dasar Page

4. Implementation interface Teknik Karawitan Dasar Page

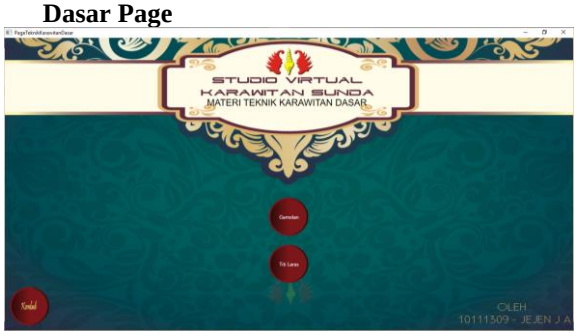


Figure 11. Implementation interface Teknik Karawitan Dasar Page

5. Implementation interface Gamelan Page

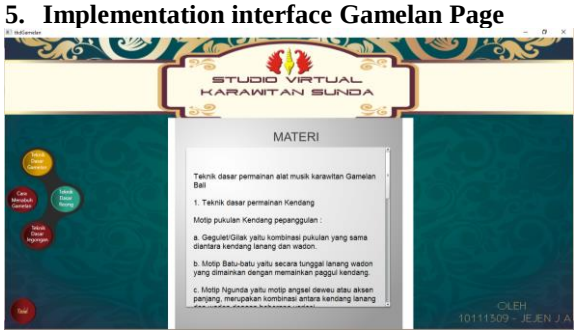


Figure 12. Implementation interface Gamelan Page

6. Implementation interface Titi Laras Page



Figure 13. Implementation interface Titi Laras Page

7. Implementation interface Latihan dan Tugas Page

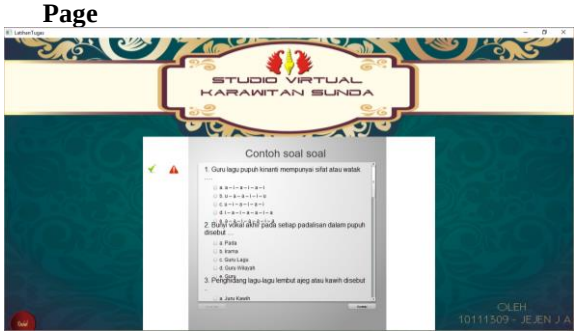


Figure 14. Implementation interface Latihan dan Tugas Page

8. Implementation interface Play Page



Figure 15. Implementation interface Play Page

9. Implementation interface Play Instrumen Page

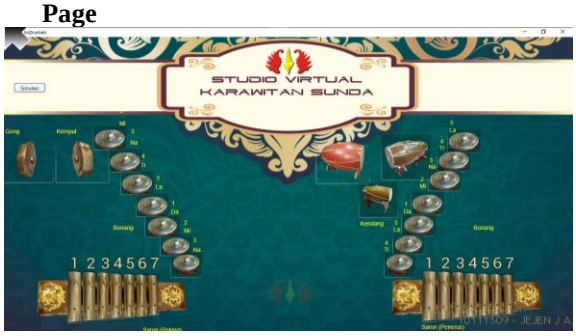


Figure 16. Implementation Interface *Play* Instrumen Page

10. Implementation Interface Play Video Page

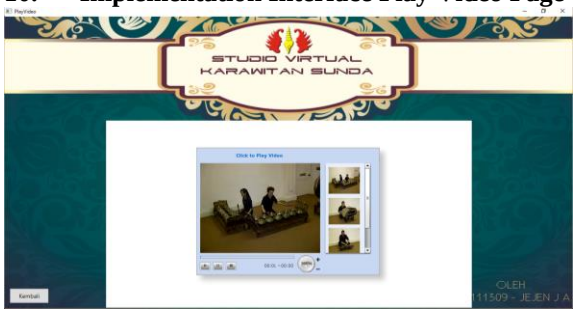


Figure 17. Implementation Interface Play Instrumen Page

11. Implementation Interface Petunjuk Page



Figure 18. Implementation interface Petunjuk Page

3. CLOSING

3.1 Conclusion

Based on test results, the author can draw the following conclusion:

1. With the multimedia application, virtual studio Sundanese gamelan as a musical learning support for students of class X in SMK N 10 Bandung can help the students to understand the learning material musical arts.

2. With the multimedia application, virtual studio Sundanese gamelan as a musical learning support for students of class X in SMK N 10 Bandung can help the students play simulated musical instruments for students who could not play musical instruments significantly.

3.2 Suggestion

Multimedia application virtual studio musicians Sundanese as supporting learning musical for students of class X in SMK Negeri 10 Bandung was built with the concept Multipoint used to build educational applications for students of class X in SMK Negeri 10 Bandung which have limitations in technology infrastructure to support the learning process in groups, As for suggestions for the development of this software are as follows:

1. Adding more variety of questions and exercises.

2. Adding more interactive elements in the simulation game gamelan instruments.

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