A DEVELOPMENT OF INTERACTIVE MULTIMEDIA LEARNING APPLICATION ON FIKIH SUBJECT FOR FOURTH GRADE AT DESKTOP BASED MI MIFTAHUSSALAM BANDUNG

Dwiwidya Winaryono[1], Eko Budi Setiawan[2]

[1] Teknik Informatika – Universitas Komputer Indonesia
Jl. Dipatiukur 112-114 Bandung

E-mail : dwiwidya.winaryono@gmail.com[1], ekobudisetiawan@ymail.com[2]

ABSTRACT

Madrasah Ibtidaiyah and Elementary School differ in curriculum, especially in Islamic Education subject, because the subjects delivered are more in-depth and specialized. *Madrasah Ibtidaiyah* is now under the Ministry of Religious Affairs of the Republic of Indonesia, thus the syllabus given slightly different; particularly the syllabus of *Fikih* subjects.

As in the *Fikih* curriculum of fourth grade *Madrasah Ibdtidaiyah*, which is presented by the teachers from the syllabus into lesson plans in an effort to achieve Basic Competencies, explains that at the end of each lesson, students are required to simulate worship practices in order to understand the concept of the lesson as a whole and in detail. The problem lies in the availability and the limitation media to simulate *Fikih* lessons at the school. In effort to overcome the problem mentioned, interactive multimedia learning provides a solution to simulate *Fikih* lessons, besides, this can also overcome the limitations of teaching media and present interaction during the simulation performed by the students. In developing the Learning Media Application, the writer uses tutorial and simulation models. The tutorial models are used as a model in developing materials which will be presented to users. While the simulation models are used in simulating *Fikih* practices as provided in the *Fikih* curriculum of fourth grade *Madrasah Ibtidaiyah*.

According to the tests conducted and research results, the conclusion can be drawn that the learning media application is able to help students in understanding the simulation of *Fikih* practices. This application also helps the school to overcome the media limitations of *Fikih* subject and helps teachers explain the concepts of *Fikih* thoroughly and tangibly, therefore the students understand more.

Keywords : *Fikih*, Simulation of Worship Practices, Tutorial Model, Interactive Learning Multimedia.

1. INTRODUCTION

Islamic Elementary School (MI) Miftahussalam Bandung is located in Jalan Sukamulya In 3 RT 06 RW 09, Village Sukaasih District of Bojongloa Kaler Bandung, has stood since 1979. MI Miftahussalam public education programs to the particularities of Islam which consists of six (6) the level of basic education. Government Elementary School curriculum is different from elementary school subjects mainly Islamic Education (PAI), because the subjects were given a more in-depth and specialized. Government Elementary School now under the Ministry of Religious Affairs of the Republic of Indonesia, so the syllabus given slightly different. In particular syllabus of Islamic education subjects who developed into into four groups of subjects that the Qur'an-Hadith, Morals Aqeedah, Fiqh, Islamic Culture and History.

As in the fourth grade curriculum Fikih Ibdtidaiyah Madrasah, which is presented by the teachers of the syllabus into lesson plans in order to achieve basic competency. Explained that at each end of the matter of Fikih, students are required to simulate the practice of worship, in order to understand the concept of the material as a whole and in detail. The props are a series of equipment needed in practice to simulate the concept of a lesson. In fiqh lessons to practice simulated props idain prayer, zakat and donations and alms quite diverse and complicated to be provided schools and it is difficult to directly practiced in class. In addressing the problem of learning with interactive multimedia provide a solution to simulate materials Fikih, this addition can replace a tool to practice also presents interaction during the simulation performed by the students.

Based on interviews with Ms. Yuli Marlina, S.Pd.I as teacher of the fourth grade Fikih in MI Miftahussalam Bandung, obtained information that the teacher had difficulty in explaining abstract concepts of Fikih, so that the material Fikih elusive in full by the student. The Fikih in this case because

the material contains ordinances of worship were difficult to understand, without any media present the material in a concrete and detailed.

Based on the results of data processing questionnaires conducted on a random sample of 40 fourth grade students in Bandung MI Miftahussalam we concluded that 34 of 40 samples of students, or 70% of students had problems in understanding the concept of Fikih material intact. This is because the delivery of content Fikih done using conventional methods such as listening to the teacher's explanation and reading textbooks, so students have a hard time understanding the concept of religious practices such as worship and reading religious movement. Those problems can be solved by learning media presents an example of religious movements and religious readings are concrete and detailed.

Seeing these problems so that the need to increase media learning support. The learning media should be able to clarify the existing material, works to help improve the understanding of the religious practices of Fikih, as well as teachers' aids in the learning process. One of them is by building a multimedia interactive learning. Multimedia interactive learning is selected, because there is interaction between students and the system to be built. So that students are more active role in learning with the media. With active participation is expected, increase the students' understanding of the materials that were previously elusive Fikih.

Based on this background, it takes an Interactive Multimedia Applications Development Learning Subjects Fikih Class IV in Bandung Miftahussalam MI-Based Desktop. As for the consideration of using Desktop-Based Applications is because the user is done offline and used in classrooms. While the objectives to be achieved in the development of interactive multimedia learning applications are:

1. Produce a learning medium that is expected to be a support facility in order to improve the processes of teaching and learning activities and serves to simulate the material Fikih regarding the procedures that the practice of worship, as a substitute for addressing media unavailability props simulation practice of Fikih.
2. Generate interactive multimedia learning by helping teachers to explain concepts in a concrete and detailed Fikih, through the example of the procedures for the practice of worship, to be easily understood by students of class IV MI.
3. Produce media that help students understand the simulation about the manner of religious practices through examples and explanations through real and detailed approach.

2. CONTENT OF RESEARCH

2.1 Basic Theory

2.1.1 Understanding Learning

Learning is an interaction between teachers and learners that involve multiple components to achieve the goal of improving the understanding and achievement of learners. The study is the accumulation of the concept of teaching and learning concepts, penekannnya lies in the fusion between them, namely to increase the activity of the subject learners. The concept can be seen as a system, so in this study contained system components consisting of learners, objectives, materials to achieve the objectives, procedures and equipment or facilities that media should be prepared.

2.1.2 Definition of Learning Media

Learning is a two-way communication between teachers and students carried out aimed at improving the understanding and student achievement. In presenting the teaching materials to students, is required to use the media as intermediary during the learning process. Media plays an important role in achieving the learning objectives.

2.1.3 Benefits of Learning Media

The benefits of learning media in the learning process is as follows:

1. Describe the learning material or abstract objects become more concrete, through the application of simulation in teaching media.
2. Provide a real and direct experience because learners can interact with instructional media, and receive feedback from the learning media.
3. Drawing the attention of learners, thereby increasing interest, activity and creativity of learning.

2.1.4 Definition of Multimedia

Multimedia is an integration that consists of a combination of several digital media such as electronic text, graphics, moving images, and sound into digital computerized structure that allows users to interact and navigate, with a specific purpose.

2.1.5 Multimedia Component

As in multimedia technology, there are several components that can be used and combined, the multimedia components as follows:

1. Text

   The text is a combination of letters that form a word or phrase that describes an intent or pembejalaran material that can be understood by those who read it. Text is the basis of word processing and multimedia-based information.

Text is a form of multimedia data is most easily stored and controlled. The use of text in multimedia need to consider the type of font, font size, and style letters.

2. Image

Pictures are delivering information in a visual form. Raster image also means the image (halftone drawing), one of the photos. Image elements used to describe things more clearly. Images can summarize complex data in a way that is new and useful.

3. Video

Video is essentially a tool or media that can display real objects simulation. According to Agnew and Kellerman defines video as a digital media which shows the arrangement or sequence of moving images and can give the illusion [1]. Video is also the information presented in a unified whole object is modified so that it looks mutual support portrayal as if seen alive.

4. Animation

Animation is a display medium that combines text, graphics, and sound in a movement activity. Animation is the rapid display of image frames to produce a motion in the picture.

5. Audio

Audio defined as some sort of sound in digital form. The use of multimedia can be either audio narration, songs, and sound effects.

6. Interactivity

Interactive aspect of the multimedia can be a navigation, simulation, games and exercises. If in a given multimedia applications an ability to control the elements are there, then it is called the interactive multimedia multimedia

2.1.6 Multimedia Interactive Learning

Multimedia technology itself can be classified into two categories: linear multimedia and interactive multimedia. As for the definition of interactive multimedia by Elaine England and Andy Finney is integration consisting of a combination of several digital media such as electronic text, graphics, moving images, and sound into digital computerized structure that allows users to interact and navigate, with the specific purpose [1]. One of these objectives is the use of multimedia technology as a medium to support the learning process. As for multimedia for learning according to Robinson can be defined as the presentation of learning / instructional display that combines text, graphics, video and audio and can provide interactivity [2]. Interactive multimedia learning can be used to distribute information such as subject matter, increasing the attention and interest of learners so as to produce better learning process. Presentation of the subject matter information, through interactive multimedia facilitate learners to understand abstract concepts become more concrete concept. Interactive Multimedia also provides flexibility to the user to select the information to be presented, to interact with the system built, and provide a response to the system to perform the next function. There are several characteristics of the use of interactive multimedia as follows:

a. Capable of providing an opportunity to participate from the user in the form of a response as answers to questions, the selection of material information, and the trial of the object in the system.
b. Able to present an interactive process between the system and presents the user with feedback.
c. Able to provide systematic control in the learning process.

2.2 System Analysis

Systems analysis is a process to classify the components of the system / application, which aims to identify the problem and explain the need to build the system.

2.2.1 Similar Applications Analysis

Analysis of similar applications is the discussion of the application of the reference building an application. The analysis of similar applications discussed about how to use the applications and components that exist in the application, so it can be concluded needs in application development. As for the type of application being analyzed is Marbel Application (Let's Learn While Playing) Salah and Application Let's Learn IND Multimedia Interactive Learning For Students Class IV SD / MI. The results of analysis of the application let's learn to pray multimedia interactive learning for students of class IV SD / MI are as follows:

1. This multimedia application is an application discusses the procedures for prayer comes with a sense of prayer, the legal basis for prayer, prayer legitimate requirement, harmonious prayer, sunnah prayers and things canceling prayers. The material presented concise, clear, concise and easily understandable.
2. This multimedia applications delivered material using two-dimensional animated images that are equipped with a voice to explain about the material presented so penyampain more interesting material.
3. This multimedia application is an interactive multimedia means that the user can freely choose the menu in accordance with the desired learning.

2.2.2 A Development Of Multimedia Application Analysis

Applications Interactive Multimedia Learning Fikih Class IV MI, is a multimedia application that is built aims to:

1. Produce a learning medium that is expected to be a support facility in order to improve the processes of teaching and learning activities and serves to simulate the material Fikih regarding the procedures that the practice of worship, as a substitute for addressing media unavailability props simulation practice of Fikih.
2. Generate interactive multimedia learning by helping teachers to explain the concept of Fikih in the concrete, detail and by way of example procedures for religious practices, to be easily understood by students of class IV MI.
3. Produce media that help students understand the simulation about the manner of religious practices through examples and explanations through real and detailed approach.

2.2.3 Tutorial and Simulation Model Analysis

In the learning process using multimedia technologies, applications built based on the model of multimedia learning accordingly. As for the construction of the fourth grade learning applications Fikih MI, multimedia learning model used is a tutorial learning model and learning model simulation.

2.2.3.1 Tutorial Model

In the tutorial teaching model, the information presented to the user in the form of grooves and are grouped into separate sections. With this tutorial models, the user can select learning material to be studied in accordance with the wishes of the user.

In building a multimedia application that uses a learning model-making tutorial takes a draft specification of the application architecture, style, appearance and material requirements / materials for multimedia applications. The draft is illustrated with storyboards multimedia tutorial models. Storyboard is a series of clear picture of the multimedia components as well as the culprit that illustrates a story. Storyboard is a guideline of the flow of work to be done by the developers of multimedia [3].

2.2.3.2 Simulation Learning Model

The learning model is a simulation of a state / artificial situation created resembles the condition of the actual situation. In the simulation model is equipped with manual instructions for their use which serve as instructions to learn (learning guides). The format of the learning model simulation learning applications Fikih class IV MI as follows:

1. Material Simulation

   The material and information that will be presented in this simulation model is a simulation of zakat material which is divided into a simulated material tithes and zakat mal material simulation, simulation of material donations and alms were divided into material donations simulation and simulation materials alms, prayer and material simulations idain are divided into material idain Eid prayer simulation and simulation materials idain Eid al-Adha prayers.
2. Giving Response

   The provision of a control response and control of users by performing activities and actions against the existing system. In this simulation models the user has the ability to take action in accordance with the wishes of the simulation options were granted.
3. Giving Feedback

   The provision of feedback is a response from the application when the user performs the action and command of the simulation activities. In this simulation model provides a feedback system which changes the movement against the existing animation, and notification of the system if the steps taken is right or wrong.

2.3 Non Functional Requirement Analysis

The analysis of non-functional requirements is an explanation of the needs outside the system, in order to process the system to be built. With the application of the analysis system built customized based on their needs.

On the Application of Multimedia Interactive Learning Fikih Class IV MI analysis of non-functional requirements, including hardware requirements, software requirements and system users that will be using the system.

The minimum hardware requirements specification, to be able to process applications Multimedia Interactive Learning Fikih Class IV MI can be seen in Table :

Table 1. Minimum Spesification Hardware Requirement

No	Perangkat Keras	Spesifikasi
1	Processor	Processor dengan minimal kecepatan 1.8 Ghz
2	Monitor	Monitor dengan resolusi 1024 x 768 pixel
3	Graphic Card	VGA dengan Kecepatan minimum 64 MB
4	Harddisk	Free Space minimum 500 MB
5	Memori	Minimum RAM 256 MB
6	Mouse	Standar
7	Speaker	Standar

As for the software requirements specification for processing applications Interactive Multimedia Learning Fikih can be seen in Table :

Tabel 2. Minimum Spesification Software Requirement

No	Perangkat Lunak	Spesifikasi
1	Sistem Operasi	Minimal Microsoft Windows XP Pro
2	*Tool Compiler*	Minimal Adobe Flash Player 11

User needs analysis is an analysis of the user who will use the system to be built. The needs of users are involved in the use of Interactive Multimedia Applications Fikih Learning Class IV MI, can be seen in Table :

Tabel 3. User Requirement Analysis

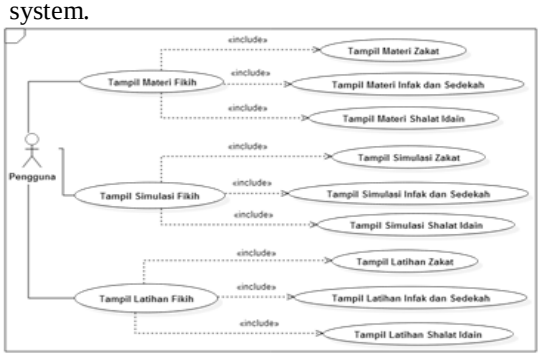
Pengguna	Guru Kelas IV MI Miftahussalam Bandung	Siswa Kelas IV MI Miftahussalam Bandung
Hak Akses	Menggunakan Pembelajaran Multimedia Interaktif	Menggunakan Pembelajaran Multimeida Interaktif
Pengalaman Pengguna	1. Guru dapat menggunakan komputer 2. Guru dapat menggunakan *software* aplikasi	1. Siswa dapat membaca 2. Siswa dapat menggunakan komputer 3. Siswa dapat menggunakan *software* aplikasi
User Job & Task	Guru dapat menggunakan komputer untuk menjelaskan materi pembelajaran	Siswa dapat mengerti perintah atau instruksi
User Physical Characteristic	1. Tidak memiliki hambatan fisik 2. Motorik tidak terlalu kaku 3. Menggunakan tangan kanan	1. Tidak memiliki hambatan fisik 2. Motorik tidak terlalu kaku 3. Menggunakan tangan kanan
Jenis pelatihan yang harus diberikan	Pelatihan mengenai tata cara menggunakan Aplikasi Pembelajaran Multimedia Interaktif tersebut.	Pelatihan mengenai tata cara menggunakan Aplikasi Pembelajaran Multimedia Interaktif tersebut.

2.4 Functional Requirement Analysis

Analysis of functional requirements is an analysis of the needs of the system / application to be built. As for the development of multimedia applications MI teaching fourth grade this Fikih, the system modeled using object-based modeling analysis that can be described through diagrams UML (unified modeling language).

2.4.1 Use Case Diagram

Use Case diagram is a diagram of the planned functionality for system / application is built. As for the Use Case diagram is the case of integration between actors with the system.



Picture 1. Use Case Diagram

The explanation of the Use Case diagram interactive multimedia learning applications Fikih class IV MI that has been described is as follows:

1. Definitions Actor

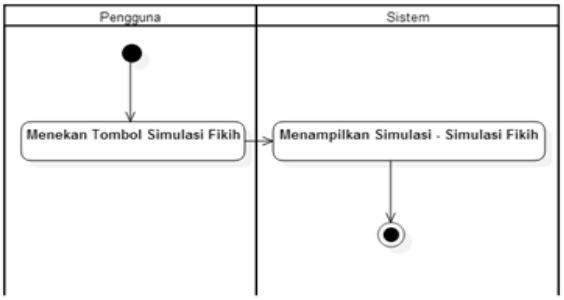
   As for the definition of actors in interactive multimedia learning applications Fikih MI IV class are users of the system. In an interactive multimedia learning applications Fikih class IV, the users are people who use and operate applications / systems.

2. Identify Use Case Diagram

   The identification of Use Case diagram in interactive multimedia learning applications Fikih class IV MI is a description for each piece that is in the Use Case diagram.

2.4.2 Activity Diagram

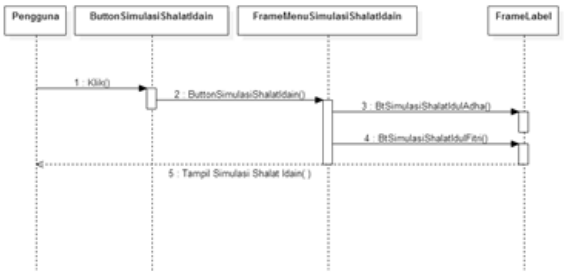
Activity diagram is a diagram that explains the relationship activities that occur in a system or application, described the relationship between users who access the system with a system or application used.



Picture 2. Activity Diagram

2.4.3 Sequence Diagram

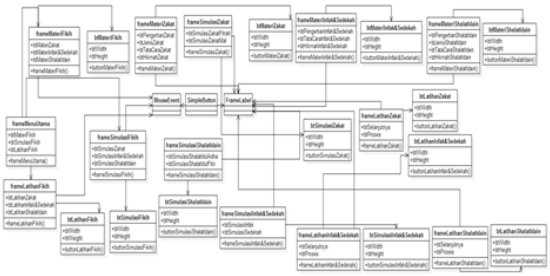
Sequence diagram is a diagram that explains the interaction between the Use Case to one another. The Use Case diagram illustration on an interactive multimedia learning applications Fikih class IV MI as follows.



Picture 3. Sequence Diagram

2.4.4 Class Diagram

The Class Diagram is a description of a class structure that builds a system. With classes that are interconnected to one another. In the Class Diagram is a list of class analysis is as follows :



Picture 4. Class Diagram

2.5 System Implementation

Discuss environmental systems implementation phase of implementation and interface implementation. The implementation environment describes hardware requirements and software requirements, where the system will be implemented. While describing any interface implementation interface found in the system.



Picture 4. Main Page Application



Picture 5. Subject Fikih Page



Picture 6. Subject Zakat Page



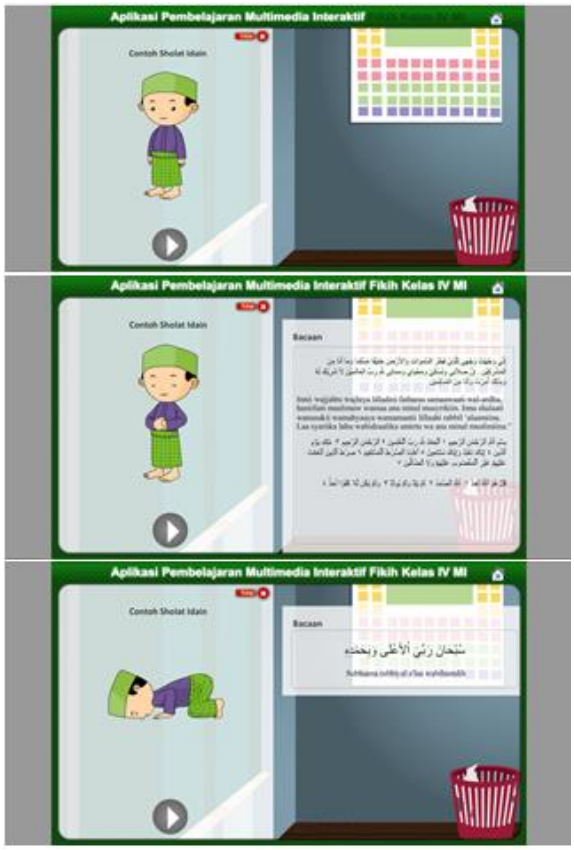
Picture 7. Infak and Sedekah Subject Page



Picture 8. Simulation of Zakat Page



Picture 9. Simulation Of Infak and Sedekah Page



Picture 10. Simulation Of Shalat Idain Page

3. CLOSING

1.1 Conclution

Based on the analysis, design and testing of research conducted in developing applications Multimedia Interactive Learning Fikih Class IV MI can be concluded as follows:

1. With the Application of Multimedia Interactive Learning Fikih Class IV MI, has helped schools, especially teachers in overcoming the limitations of props Simulation Fikih.
2. With Interactive Multimedia Learning Applications Fikih Class IV MI, has helped teachers in explaining abstract concepts Fikih material, through concrete learning media.
3. Increasing students' understanding of the Fikih of Worship Practice Procedures and experience in conducting simulations Worship Fikih.

1.2 Suggestions

As based applications that have been built, there are suggestions that are useful in the development of further applications, as follows:

1. Submission of Simulations Fikih presented still less varied and diverse.
2. Submission Material submitted Fikih is still less attractive, there are some examples that can be used to enhance understanding of the material.
3. The animations are presented relating to Fiqh, not all available in the system.

REFERENCES

[1] Munir. (2013). Multimedia Konsep dan Aplikasi dalam Pendidikan. Bandung : Penerbit Alfabeta.
[2] Munir. (2001). Aplikasi Multimedia Dalam Proses Belajar Mengajar. Bandung : UPI Press.
[3] Ariesto Hadi Sutopo (2005). Multimedia Interaktif Dengan Flash. Yogyakarta : Penerbit Graha Ilmu.