

CHAPTER III

RESEARCH METHODOLOGY

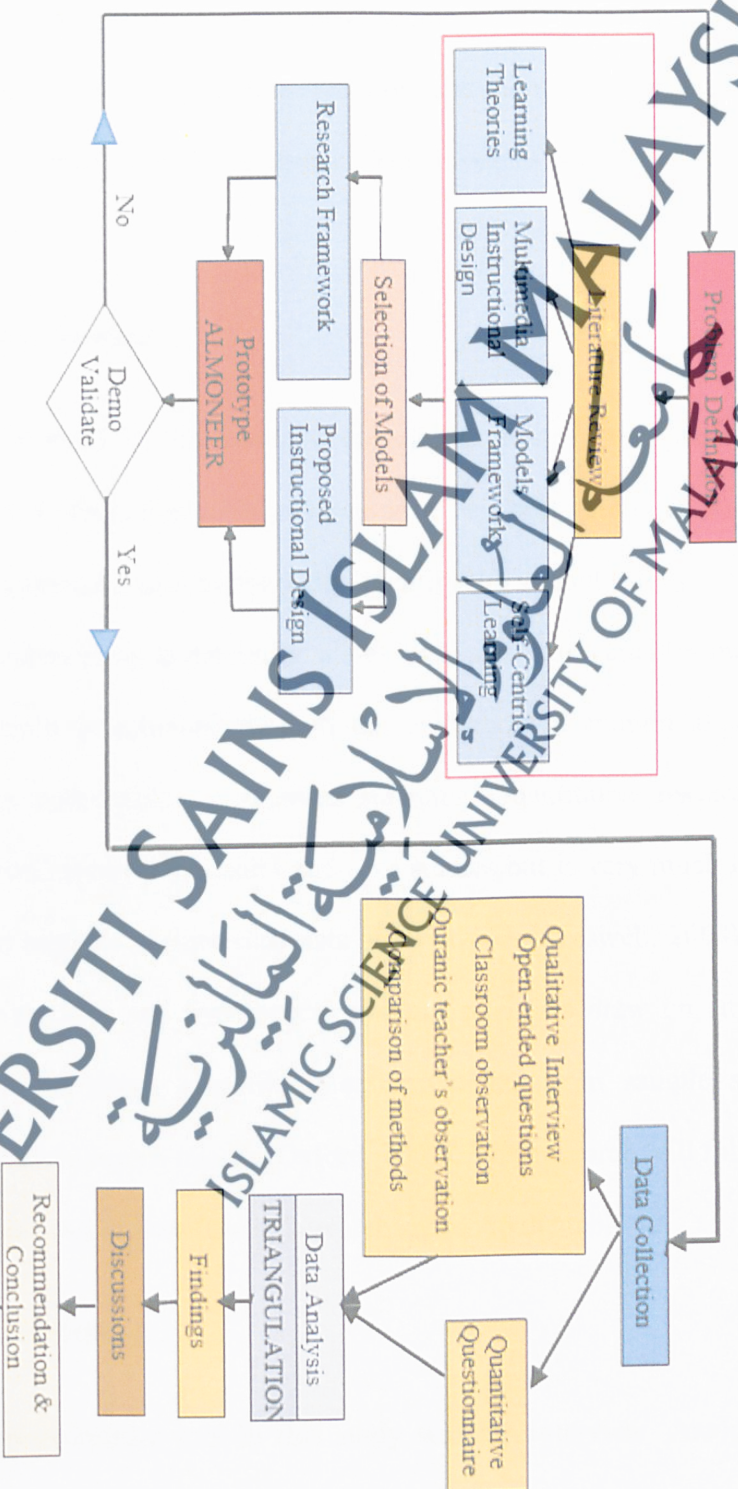
3.1 Introduction

This chapter discusses the research methodology used for this study. It begins by research flow of the study. Secondly, it discusses the research methods used for data collection strategy and research Instrument. Lastly, it discusses the instruments as well as the research data analysis and the method to be employed for the validation of the proposed Multimedia Instructional Design System for Teaching Qur'anic Recitation based on Tajweed to primary school students, referred to as Al-moneer.

3.2 Research Flow

The researcher has systematically designed and arranged the research flow to be in the most practical manner. Summary format in Figure 16.

FIGURE 16: Research Flow of the Study



Source, Researcher Developed for this Study

3.3 Research Method

The inquiry could be classified depending on the procedure embraced by the researcher; some researchers favor quantitative method while others prefer qualitative method. In this current day scenario there are more and more researchers adopting the mixed method to complete their investigation. This involves both the quantitative and qualitative methods.

3.3.1 Quantitative Method

The quantitative method in this research aims to investigate the problems faced Malaysian students in recitation a Holy Quran with Tajweed. Sidhu & Singh (2006) documented that quantitative researchers first identify the variables they would like to study, and then, utilize rules to determine a way to express the variables numerically. Quantitative research is achieved through the collection of numerical data to be analyzed utilizing mathematics to ascertain statistics. Quantitative research method relies questionnaires, subjective reports and case studies but is very much focused on the collection and analysis of numerical data and statistics (Creswell, 2009). In order to test empirical theories and hypotheses, political scientists draw on an extensive range of sources, including primarily quantitative data from sample surveys or aggregate statistics like exams results (Oxford, 2003). This research will follow all the paradigm characteristics of quantitative research shown in the table 12.

3.3.2 Qualitative Method

The qualitative measurement tool in this study was the interview. Analysis means interpreting the information provided (Gill & Johnson, 2010; Jankowicz & Devi, 2005; Pietsch et al. (2003) by the teachers and relating it to the main objectives of the

study. All the teachers accept to use tape recorders; thus, information was gathered by writing notes manually (hand-written notes) and tape recording. Quranic teacher interviews were conducted in two parts; the interview was before and after intervention started the aim to request the personal information of Quranic teachers, in addition to their attitude in general toward technology in education. Second interview was conducted after finished for the experimental after finished of using the Almoneer the aim was to explore teachers' impressions and opinions of the use of the Almoneer program in teaching the Quran. The interview for each teacher lasted for nearly, but not more than 60 minutes. While the students' interviews were held in, a meeting room of the school, and recording was not used in order to allow students to talk freely. These interviews aim to examine their post-test scores and their responses to questionnaires their attitude toward Almoneer program usability in Quran teaching and learning by asking how and why, as open questions, and observing the students' gesticulations is very important during the interview for analysis. A qualitative research method was based on an in-depth interview conducted among the Qur'an teachers in the selected school where data is collected and will follow all the characteristics of Qualitative research shown in the table 6.

3.4 Triangulation Method

Triangulation method of quantitative, qualitative and descriptive design are applied in carrying out the investigation. Triangulation' can be done when data are available, from different sources, different investigators, different theories or different methods (Yeasmin, 2012). In this research, qualitative data are used initially, which is once more traced by a quantitative data collection to add more to the reliability and robustness of the inquiry. In research it is better to use both eyes rather than one (Thompson, 2004).

3.5 Pilot Study

A total of forty survey questionnaires were used to validate the survey instrument (pilot tested). The pilot study will be carried out prior to data collection that will be reported in this study. A pilot study is necessary because it was conducted to test the appropriateness of the survey instrument and as a result, reveal deficiencies that can affect the consistency of the survey instrument to quantitatively supply information that will be used for analysis. The pilot study was conducted among the primary school students Sekolah Kebangsaan Taman Kosas in Ampang Malaysia.

The data obtained was used to validate the appropriateness of the item in the research instrument. Data generated during the pilot testing were analyzed and were used to screen the questionnaire prior to final data collection. The results obtained from the pilot study will not lead to any substantive changes; however, it will be used to test the feasibility of the survey instrument.

3.5.1 Validity and Reliability

Validity and Reliability of the research instrument are one of the most crucial aspect of any research setting. The instruments utilized in this study are from reputed sources, yet reliability and validity of the data gathered needs to be ensured.

3.5.2 Validity

Therefore, for the purpose of this the researcher made use of research expertise and linguistic professionals speaking in both English and Arabic to verify the research instrument for further perusal and their advised for the same was also sought.

In addition, the researcher presented the questionnaire items to a group of expert's in the field of statistics, computer science, information technology, Shariah and Sonah in teaching Tajweed of the Holy Qur'an. Were they noted some points on this scale, and recommended the researcher to make the necessary adjustments to some of the items and delete some items, based to the proposal of the experts in accordance with the questionnaire instrument. *AppendixB*.

3.5.3 Reliability of the Research Instrument

Based on the feedback obtained the research instrument was strengthened further. The reliability was further strengthened by determining the Cronbach Alpha value of the setting. Research experts (Lance et al. (2006); Nunnally and Jum (1994)) suggested a minimum Cronbach Alpha value of 0.70 is required for the instrument to be highly reliable as the Cronbach Alpha value of this study is 0.906. The value determined from the Cronbach alpha reflected that the instrument were reliable and can be used for collecting data.

3.6 The Implementation of the Experimental Study

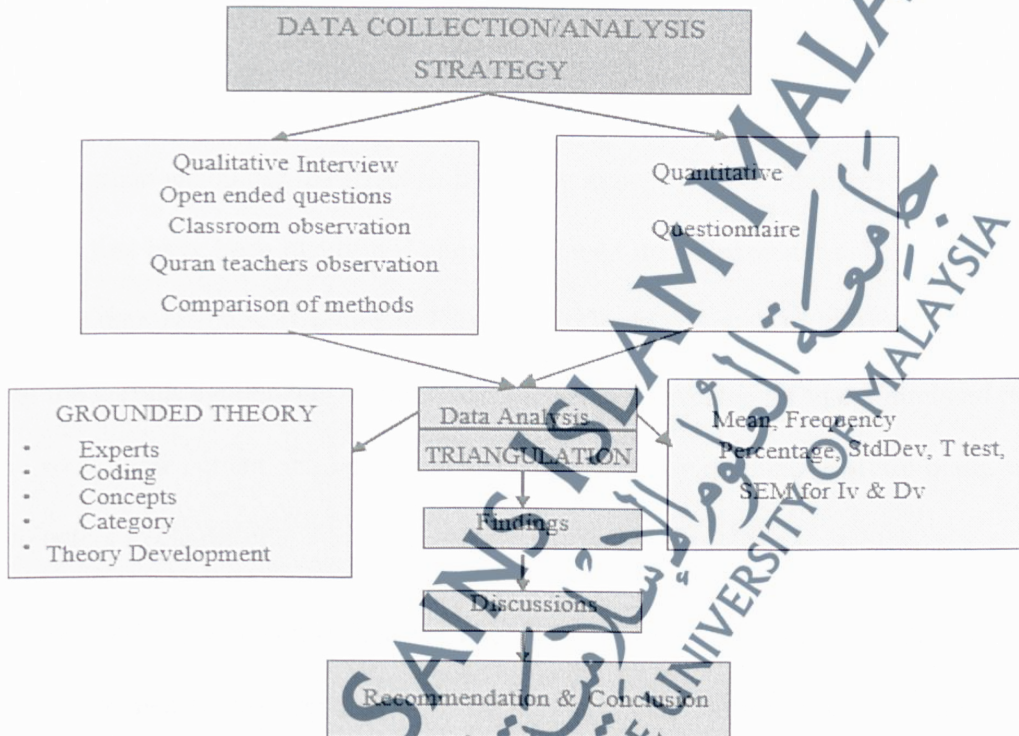
Prior to the execution of this experimental study, the researcher obtained a letter from the Universiti Sains Islam Malaysia to introduce the researcher to the Ministry of Education in Putra Jaya Malaysia (*AppendixC*). Upon obtaining a written permission from the Education Ministry, the researcher submitted the letter to get permission letter to conduct the experimental study in their school (*AppendixD*). Although this thesis does not speak what exactly happened in the field, it is worth mentioning that the experimental study was not accomplished without tears being shed. The Haja Khadejah head of school. She was nice with me; she is hardworking and cooperative

person. From day one, she showed her smiling face until the end of the study. The problems began with the researcher, because almost of staff and teachers did not speak English. In addition, the researcher did not know the rules of schools in Malaysia and what to do when the staff and students asking questions in Malay language. Other problem was at tight schedule of the classes when the research did not go ahead as scheduled. The school principal was busy. Each step in the experimentation required his kind permission in spite of having an approval letter from the Education Ministry. The researcher had to wait one week, sometimes two, just to see him in person. It happened many times. There was a situation where the researcher decided to abandon the whole experimentation. The problems did not stop; in fact, more trouble awaited the researcher in the classroom. One of the Qur'anic teachers understands the theoretical breakthrough about the learning and the teaching of the Tajweed rules, but the teacher is defensive about teaching the Qur'an through chalk and talk method. She rigorously insists that there is nothing wrong teaching the Qur'an using traditional method. Moreover, permission must be sought from the school Principal for the smallest change in the class conditions to suit the experimentation. However, the teachers kindly permitted the researcher to observe the classes until the end of the experimentation. In the SK school, students have monthly exams and they must prepare a week before the examination starts. This procedure also decelerated the research process in SK school. There are not enough computers laboratories in the lab. These computers laboratories were being heavily used by the students and the teachers alike resulting in the delay process of this research.

3.7 Data Collection Strategy

The researcher designed to collect both the quantitative and qualitative data for this study. The data collection and data analysis strategy is summarized in the Figure 17.

FIGURE 17: Data Collection and Data Analysis Strategy



This study utilizes both quantitative data based on questionnaires and qualitative data based on interview to validate the study. Data entails set of information could be of two varieties- Qualitative and Quantitative (Saunders & Thornhill, 2003). The investigator finds out that the quantitative approach to data collection contains experimental techniques, interviews, surveys; close stopped questioning where the respondent has to select the suitable responses according to his viewpoint.

The investigator is an Interpretive a qualitative method of data collection was used, and a great deal more through since the aim was to comprehend the subject from a

corporation's viewpoint a qualitative strategy was seen as more important. In support of the option, (Creswell et al. (2007); Lance et al. (2006); Laurel (2003) suggests that the qualitative strategy helps you to await into a problem, thereby building up the knowledge level in the subject area. The goal of the research would be to encompass the significance of Almoner as an instructional design for school students in Malaysia to learn Quranic Recitation with Tajweed. The actual validity of the qualitative study is the fact that the guidance it can supply a complicated description about human encounter. In effect as its ability to supply in depth investigation of soft aspects that have been mentioned above produced the investigator select a qualitative way for data selection (Collis and Hussey (2013); Mack et al. (2005)) overly concurs that the various agreements required to thus help the investigator to comprehend better the social and human actions included are engaged by qualitative study being more subjective in character.

James (1997) considers that this really subjective temperament of the qualitative study helps it be nearly unacceptable to bring rigor and reliability to the information. Yet, most writers consider there are pitfalls with qualitative work. For example, the tiny sample size of individuals interviewed does not necessarily mean the exact image (Andrew, 2007). Another drawback of qualitative work as stated by Pietsch et al. (2003) is that it is very hard to see or prevent research worker established prejudice. However, the written report being an exploratory research-which requires human awareness qualitative study was thought to be more suitable.

The many strategies for gathering data qualitatively are interview's (Organized, semi-structured, unstructured) emphasis groups, participation observation, a projective method (Collis & Hussey, 2013; Mack et al., 2005; Saunders & Thornhill, 2003). The

Qualitative techniques are a great deal more flexible than quantitative techniques or in other phrases, it lets spontaneousness and encourages interactions involving the researcher along with the respondent, which then allows the researcher, go deeply to the work area (Amaratunga et al., 2002).

Mack et al. (2005) overly considers the substantial difference between qualitative and quantitative study can be establish in the versatility of the techniques and he conditions that quantitative techniques are more strict. Being more elastic than quantitative methods enables the investigator to frame more open-ended questions to the respondents and additionally it is likewise unnecessary to present or word the identical question to any or all respondents. It is also more sophisticated than quantitative techniques, which often needs only a yes or no response and permits the respondent to render a detailed response, and also got the data would be holistic and abundant with nature (Easterby et al., 1996). According to Johnson et al. (2004) the information got from using qualitative research strategies is unique to that particular unique setting and cannot be generalized whereas findings from the quantitative study might be generalized because of bigger sample size. Only since the aim of the research needs the comprehension of the local scenarios and states qualitative research was found to be more utilitarian.

3.7.1 Quantitative Data Instrument

There were also a set of pre-determined questionnaire in relation to check the examiners fidelity and wakefulness of methodological system deployed in teaching Arabic Alphabets with vowels and Qur'anic Recitation based on Tajweed to the students. The researcher collected the quantitative data using a survey questionnaire, which were distributed among the students.

3.7.2 Qualitative Data Collection Instrument

The qualitative data collection instrument are as highlighted in Table 6.

TABLE 6: Qualitative Data Collection Instrument

1	Open ended questions	Questionnaire survey
2	Interview	Pre-determined set of questions
3	Students view on the prototype	Student work book
4	Classroom observation	Treatment classes and Traditional class
5	Quranic teacher's observation	2 Qur'an teachers were observation in classroom interaction
6	Comparison between traditional and new instructional design method	Comparison made using pre and post-test within controlled and treatment groups

3.7.3 Open Ended Questions

The researcher included one open-ended question at the end of the questionnaire in the questionnaire survey form. *Appendix E*.

3.7.4 Interview

Two Qur'an teachers from the morning session were interviewed to obtain a direct data on the performance of the multimedia system as well as how they improves students learning performance. Detailed description of the result obtained are reported in the subsequent chapter and were used to generalize the findings of the present study. There were 11 pre-determined questions in the interview session in this study. (*See Appendix E*). And interview really helps to encompass the perspectives, beliefs, notions of the respondent (Dohr & Guerin, 2008).

Crockett et al. (2013) reported that interviews could be performed in lots of forms-post, e-mail, private or even telephonic interviews. (Johnson et al. (2004); Sewell (2008)) see that Interviews are normally costly and time intensive. In Accordance with

Dohr and Guerin (2008) interviews may be of three sorts structured, semi organized and unstructured. In this illustration of the research, a semi- structured interview was observed to be most suitable since even although the interviewer could possess the capability to command the interview, the one who is being interviewed can reply to the questions presented with extreme independence, which will be a mixture of both organized and unstructured interviews (Cassell et al., 2006; Gray, 2004). The questions presented to the respondents additionally since there was certainly no single solution to the questions presented and where open-ended to be capable to get the result in detail.

3.7.5 Students View the Prototype

A progress book is provided for the students to evaluate themselves where there are certain exercises, Alphabets with Harakatt, Tajweed rules, Recitation rules and which the students can recite a Holy Qur'an with Tajweed after making use of the instructional learning system courseware. This progress book is again a part of the assessment and evaluation purpose where the teacher can understand the level of knowledge, which the student has gained by making use of the proposed instructional design. *See Appendix G.*

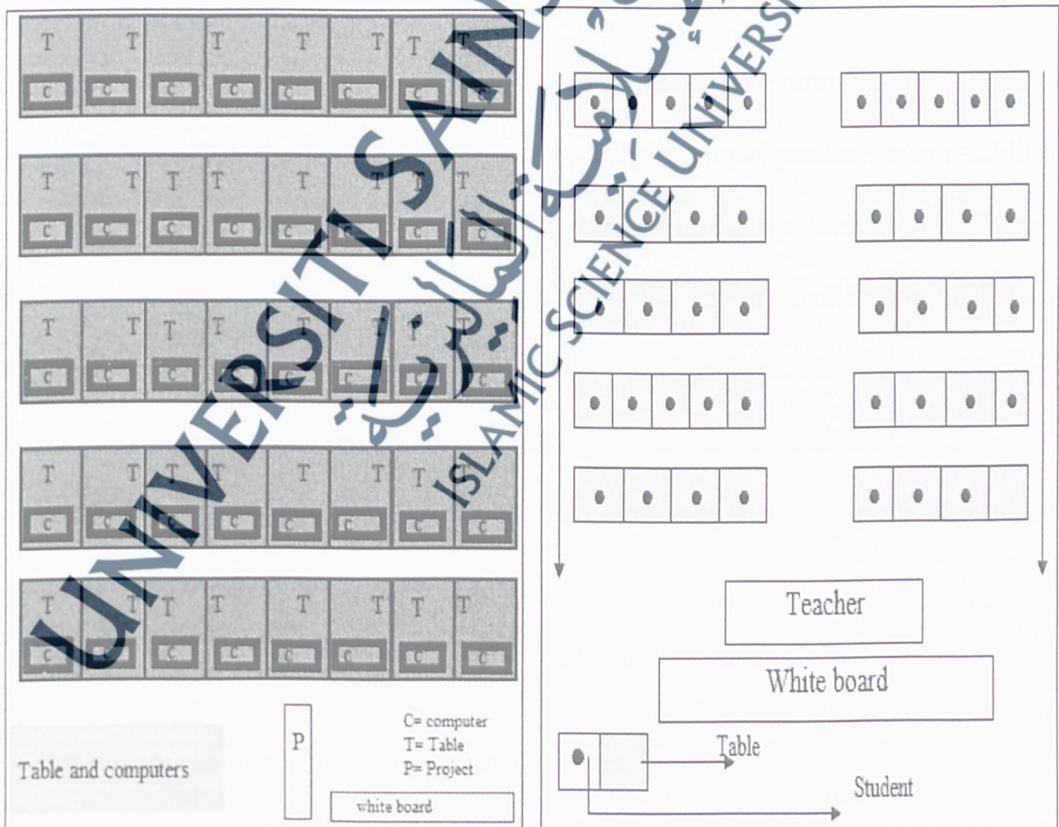
3.7.6 Classroom Observation

The researcher had many questions before entering the classrooms to collect data:

1. What are the students know about the Arabic Alphabets with and without four vowels, the level of recitation with Tajweed, computer skills and self-centric?
2. What kind of data should be observed to help answer that question?
3. What kind of instruments is needed to collect that intended data?

The instruments used to collect data were tape recording, video recording, note taking and digital photography. Moreover, the class map and students' seating obtained for further investigation and evaluation. In the classroom, some close-up video footage of the learners was inexpressible. The microphone has managed to record those tiny whispers and conversations of the students showing their ultimate delight in the class. Photo shots of the learners' enjoyment of proposed instructional design are beyond expression. A research by Maamouri et al. (2006) had moderate difficulties in teaching the Qur'anic Tajweed. However, proposed instructional design attested it to be otherwise. Many extra ordinary incidents such as students' motivation to learn Qur'an, facial expressions and simply speak the ultimate truth about the proposed instructional design. *See AppendixG.*

FIGURE 18: Constructivist and Traditional Classroom Setting Chart



3.7.7 Quranic Teacher's Observation

A proposed instructional design allows Qur'anic teachers to directly observe the students' performance during the learning process and teacher's interaction with different students further motivates the students to learn and their weaknesses can be resolved through the program interaction. *See AppendixI.*

3.7.8 Teachers Instructional Book

One of the important features of any proposed instructional design should be accompanied by a guidebook, which can help the teacher to guide the students easily. Multimedia class management guidelines are a boon for the teachers whereby they can also easily prepare their lessons before interacting with the students. *See AppendixH.*

3.7.9 Comparison Between Traditional and Control Groups Method

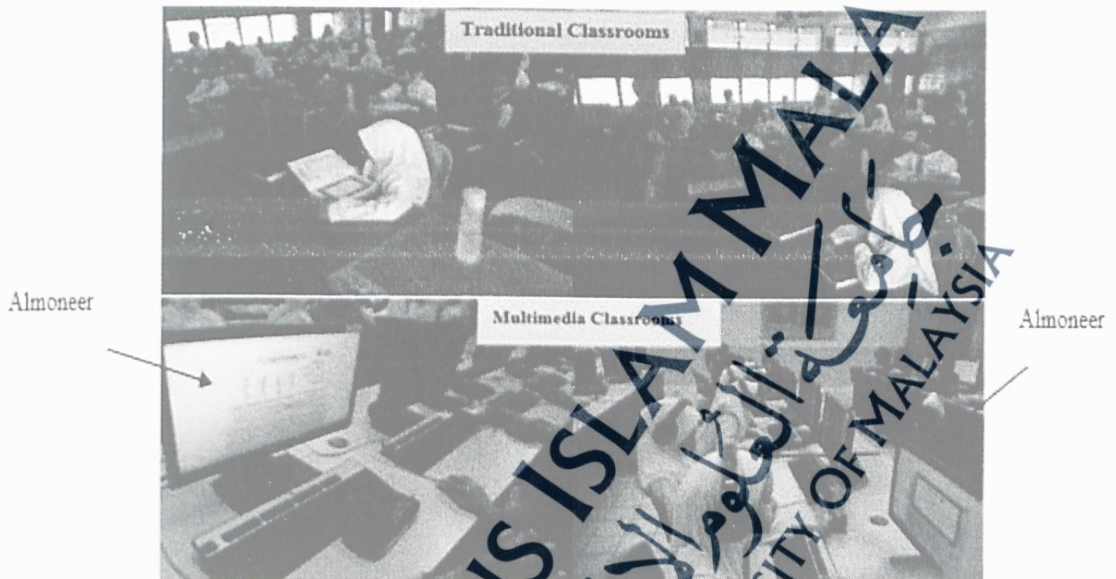
The purpose of comparison between traditional method (control group) and new instructional design method (treatment group) by pretest and posttest, was established the students' knowledge of the Arabic Alphabets with four vowels, level of Tajweed and recitation rules, before the experimentation while the main objective of the post-test was to find out whether there is any statistically significant difference between the control and treatment groups in final grade for (Independent variable). In this study, the researcher administered the same identical questions to both groups (control and treatment) of the learners.

TABLE 7: Comparison between Traditional and New Instructional Design Method

Group One: Control (N=42)	Group Two: Treatment (N=139)
Students are learning by traditional method of face-to-face learning in the classroom utilizing lectures, chalk and talk and the Qur'anic textbook	Students are leaning by Interactive multimedia using newly developed courseware in Almoneer.

The two groups in table 7 were different from one another only in terms of instructional design method. The material used was Qur'anic textbook of the school syllabus book.

FIGURE 19: Traditional and Multimedia Classrooms



The same materials were used twice: *Firstly*, through traditional methodology and *secondly*, through instructional design method using Almoneer. See Figure 19 for the traditional and Almoneer classrooms environment were the differences between traditional classroom and instructional design classroom. In instructional design classroom students are busy learning while in traditional classroom students are waiting for the teacher to guide them.

3.7.10 Treatment Group

The one of the objectives of this research was to determine an interactive multimedia courseware to teach Qur'anic recitation with Tajweed in Malaysian classroom. It is just in-time instructional intervention to motivate learners to learn the Qur'anic recitation with Tajweed.

The courseware of Almoner was developed based on the blended modalities of the most outspoken psychologists such as Mayer's Nine Ways to Reduce Cognitive Load in Multimedia Learning, Gagne's Nine Steps of Instructional Events, Keller's ARCS Model of Motivational Design, Reigeluth's Seven Steps of Elaborative Theory of Instructional Design. The content of Almoner was developed based on the Constructivist Paradigm of teaching (Jerome Bruner, Jean Piaget, and Vygotsky).

One day ahead of the experimentation, the researcher administered a pre-test to find out students' prior knowledge of the Arabic Alphabets with and without Four vowels, level of Recitation, Tajweed rules and self-centric. *Appendix J*. The pre-test specifically focused on Arabic Alphabets with Four vowels, level of Tajweed rules, recitation and vocabulary of Lam shamsyah and qamaryah. At the end of 45 minutes the researcher collected the pre-test papers personally and based on the results obtained the students were divided into five major categories such as average, good very good, excellent and fail students.

The pre and post-test papers were coded and kept for analysis. *See Chapter 5 for the Result Table 20*. In this experimentation, the treatment group was recite a Holy Qur'an and Arabic Alphabets with vowels for a period of 6 to 8 weeks using Almoner. This courseware is designed based on the constructivist principles of teaching and learning intervention. In this experimentation, the teacher was not directly involved in the teaching process. The students were briefed that they were learning the Arabic Alphabets and rules of Tajweed and Recitation in a totally different way compared to their traditional method of chalk and talk.

The learners in this courseware need minimum assistance from the teacher. It is student-centered learning. The students with Almoner are rather actively involved in

all learning activities. In constructivist learning classroom, students learn in this group and high-ability students help the low-ability students to progress. The multimedia class was taught by the same teacher who taught the control group but with different way of learning. In this class, the teacher was less involved and her job was to help students if there is a need. The researcher silently observed the class through the six to eight weeks of the experimentation by taking notes of any critical development in the class. Observation showed that the class was a joyful environment as the students remained at their stations. The students were learning the Tajweed rules actively and cooperatively at the end of six weeks with Almoncer courseware, the researcher administered post-test to find out whether there is any statistically significant differences on the students' comparing with pretest. *Tables 21 and 22 for Results.*

3.7.11 Control Group

A day before the class started the researcher administered a pre-test to find out students' prior knowledge of the Arabic Alphabets with Four vowels and level of Tajweed, Recitation rules. The pre-test specifically focused on Arabic Alphabets with Four vowels, level of Tajweed rules, recitation and vocabulary of Lam shamsyah and qamaryah. At the end of 45 minutes the researcher collected the pre-test papers personally and based on the results obtained the students were divided into five major categories such as average, good, very good, excellent and fail students. *See categories of students' based on pre-test in Table 17. & Table 18.*

In this study, the control group was used as a comparison group and they were not exposed to any modern methodological intervention. The control group was recite a Holy Qur'an with Tajweed and Arabic Alphabets with "Harakatt" for a period of 6 to 8 weeks traditional method of face to face teaching methodology. The teacher utilized

chalks, A Holy Qur'an textbook and the white board to teach the Islamic Subjects. The content of the instruction was taken from School syllabus book also. The class was totally under command and control of the teacher for 45 minutes. The students' were instructed to practice the lesson by reading Alphabets with Four vowels; Tajweed and Recitation rules from the textbook individually. Then they were told to practice some relevant exercises for about 5 minutes. During the exercise, the students faced some difficulties in solving certain problems and they were not brave enough to ask for help. This was evident from their facial expression and frustration. It was heartbreaking to see these little hearts go home with unsolved problems in their mind. The researcher silently observed the class through the six to eight weeks of the experimentation by taking notes of any critical development in the class. The classroom was hot and students were uncomfortable as it was evident from their facial testimony. The students passively followed the lessons without asking a single question. They were writing hurriedly to keep up with the lecture while the teacher spent most of the time facing the whiteboard. No questions were posed to the students who seemed to be shy, sleepy and tired. At the end of the six to eight weeks, Tajweed rules course, post-test was administered to find whether there was any statistically significant differences among pre-test and post-test on students. *See table 19 for Results.*

3.8 Formation of the Research Instruments

This questionnaire used a Dichotomous scale of "Yes" or "No" in Questions 1 to 4. Multiple-choice answers were used in this research (Sijtsma, 1998). For Questions 5 to 7. Closed ended questions using a 5 point Likert Scale were used for Questions 8 – 24 in relation to Multimedia Instruction Model to recite Qur'anic recitation with

Tajweed which was developed by the researcher depended on literature review (Alwi et al., 2014; Jalani et al., 2015; Khan et al., 2013; Mohd et al., 2013; Salim, 2012). This followed by 1 open ended question no 25. *See AppendixE.*

3.8.1 Closed Ended Questions

The questionnaire were divided into four parts namely:

Part 1 – Demographics of respondents,

Part 2 – Demographics of Multimedia learning system,

Part 3 – Likert 5 points Scale questions and Part 4 – Open-ended question.

3.8.1.1 Demographics Items of Respondents

There were three questions regarding the demographics of the students in this study. The researcher set to investigate the age, gender and level of study of the respondents in this study. All these questions have multiple-choice answers for the respondents to choose from the list. The details are as presented in Table 8.

TABLE 8: Demographic Questions of Respondents

No	Demographics items of Respondents	Multiple choice answers
1	Age	5 -10 years - 10 – 15 years
2	Gender	Male - Female
3	Level of study	Year 4 - Year 5

3.8.1.2 Demographics items of Multimedia Learning System

There were seven questions regarding the demographics items of multimedia learning system in this study. The researcher set to investigate some items in relation to multimedia learning system among the respondents in this study. All these questions

have multiple-choice answers for the respondents to choose from the list. *See Appendix E.*

3.8.1.3 Questionnaire Survey

In this section, the researcher raised the questions based on a statement to be agreed upon by the respondents selected for this study. The scale used for this study is presented here for the understanding and benefit of all readers here in Table 9.

TABLE 9: Likert 5 Points Scale Description Used in Data Collection of this Study

Scale	Description
5	Very Good
4	Good
3	Moderate
2	Bad
1	Very Bad

The Likert scale questions/statement of the questionnaire survey developed for this study. *See Appendix E.*

3.8.1 Open Ended Questions

The researcher developed 1 open ended questions with the possibility of 3 different answers from the respondent included at the end of the questionnaire survey. *See Appendix E.*

3.9 Population and Sampling Technique

According to (Collis and Hussey (2013); Saunders et al. (2007) it is important to consider the size of the research population when determining the sample size for a particular study. To achieve this, we adopted the method of Collis and Hussey (2013)

this stipulates nothing less than 100 responses. This study has however opted for a sample size of 139 (which is more than the one hundred minimum required) for reasons:

1. The higher sample size, the higher desired statistical power.
2. Bigger sample sizes minimizes the residual error and
3. Given the complexity of the problem situation.

This experimental study was conducted at *SK primary school Taman Kosas Ampang selangor Malaysia* (<http://www.schoolius.com/school>), with enrolment of 730 students.

3.9.1 Sample Size

The sample size for this study are discussed in the paragraphs below both for the quantitative and qualitative data collection methods accordingly.

3.9.1.1 Quantitative Study

The sample size for quantitative data collection is as highlighted in Table 10 below.

TABLE 10: Sample Size for Quantitative Data Collection

No	Data collection strategy	Sample size
1	Questionnaire survey	139 students

For the purpose of this study, the sample size were selected 5 classes 2 classes of level 4 with population of 68 students and 2 classes of level 5 with population of 71 students named *treatment group*, other one class is mix between population of 42 students named as *control group*. The reason for choosing all the students in the morning session is to improve the quality and accuracy of the results generated in this study based on the performance of the newly developed instructional learning system.

The students were given the instructional design to make use of the proposed instructional design and improve their knowledge in Holy Qur'an through Tajweed.

3.9.1.2 Qualitative Study

The sample size for the different types of qualitative data collections designed and planned for this study are as highlighted in Table 11 below.

TABLE 11: Sample Size for Qualitative Data Collection

1	Open ended question	Primary 4 -Primary 5	68 students - 71 students
2	Interview	Qur'an teachers	2 teachers
3	Students view on the prototype	Students' progress book	68 students - 71 students
4	Classroom observation	Primary 4 - Primary 5	68 students - 71 students
5	Teachers Observation	Qur'an & Arabic teachers	2 teachers
6	Comparison between traditional method and Almoner	Expression Reaction Satisfaction level	Pretest and posttest for each group 139 + 42 students

The sample size is vital while gathering data because the researcher is an Interpretivist and also the study done is qualitative the sampling size might be modest or else when a quantitative work is completed (Collis & Hussey, 2013; Saunders & Thornhill, 2003). There are a number of strategies to introduce the information gathered and a number of techniques, which could be applied to qualitative strategy, are ethnography, grounded theory, case studies, feminist viewpoint and hermeneutics (Bernard, 2011). In this study, investigation of information was completed by evaluating and contrasting the notions of the respondents and then it will be considered against the literature to view whether the outcomes are same or distinct.

3.10 Data Analysis Strategy

In this study, there are a number of data collection methods. As such, the data analysis is also different for each one of the methods. The detailed data analysis strategy is highlighted as shown in Table 12.

TABLE 12: Data Analysis Strategy Developed for the Study

No	Data Collection	Data Analysis
1	Questionnaire survey	Descriptive statistics & Hypotheses
2	Open ended question	Affinity Diagram
3	Interview	Grounded Theory
4	Students view on the prototype	Recorded notes from the work book
5	Classroom observation	5 classes 4 classes treatment + 1 control group
6	Quranic & arabic Teachers Observation	2 teachers
7	Comparison between traditional approach and Almoner	pre and posttests comparison between the traditional and Almoner method total of 139 + 42 students

3.11 Summary

This chapter clearly pointed out the methodology deployed in this study to gather the information to carry out the research. As mentioned in the previous paragraphs the study made use of a triangulation method whereby combining both quantitative, qualitative methods and descriptive method of data collection approaches. Further the researcher presented the formation of research instruments followed by methods of sampling techniques and data analysis strategy for the entire study. In the next chapter, the researcher will present the development and evaluation of instructional design of the prototype model to be tested and evaluation in this study.