CHAPTER 6

RECOMMENDATION AND CONCLUSION

6.1 Introduction

This chapter summarizes the studies conducted to show all the objectives studies that have been achieved. This chapter covers a summary of the research, research implications, research contributions, and recommendations for future research. The summary of the study results is the achievement of the objectives of the study using the methods discussed in the previous chapter. This chapter ends with a conclusion in a summary, a synthesis of the main ideas, and the key point of the research.

6.2 Summary of the Research

This research is a study on a Multimedia representation learning model (EzHifz) that was designed based on a multimedia interactive approach with the integration of multimedia technology, universal principles design, and techniques to optimize the strength of sensory memory through visualizing, recognizing, and imitating skills thus motivating students in memorizing the Quran verse and translation. Therefore, this study proposed an EzHifz model framework to adapt Mayer's model or Cognitive Theory Multimedia Learning (CTML) and employed four (4) components from the Multiple Intelligence Model (MI), four (4) components from VARK Learning Style Model, and four (4) components in ARCS Motivational Model including the literature review, comparison with previous studies, and preliminary study to be adapted into the model. This framework applied the ADDIE instructional design model which is the systematic process to develop the EzHifz model and evaluate learnability and user

satisfaction using Nielsen's usability and user motivation using ARCS motivational model.

This research aimed to propose an EzHifz model through the development of the EzHifz prototype as a supportive tool for motivating students in memorizing the Quran verse and translation based on their preferred VARK learning style. Furthermore, the EzHifz model was developed to contribute to the findings that can create a new impact in the Quranic teaching and learning environment. Three research objectives of the study, that have been stated in Chapter 1 are: (i) identify the multimedia representation learning model elements for Quran memorization techniques based on VARK learning style. (ii) design and develop the model of multimedia representation learning for motivating in memorizing Quran. (iii) evaluate the usability and user motivation of Multimedia Representation Learning Prototype (EzHifz) for memorizing Quran. To answer the research questions in this study, the research employed the ADDIE instructional model. Three (3) main phases are involved, namely the analysis phase, design, development, and implementation phase as well as the evaluation phase.

The analysis phase focused on the literature review, comparison with previous studies, and preliminary study on the need of the study. The preliminary study was performed to identify the problem and needs of the student to motivate them in memorizing the Quran. A literature review and comparison with previous studies on Quran memorization techniques for the EzHifz model were performed to identify the appropriate elements to adapt Mayer's model or Cognitive Theory Multimedia Learning (CTML). The adapted elements of the EzHifz model that were proposed for this study are thirteen (13) Quran memorization techniques (reading, listening, pointer, highlight, keyword, visual map, association, zooming, comprehension, open-close, repetition,

segmentation, movement), one (1) multimedia presentation (pictures of body motions and hand gestures), four (4) memory sensory (visual, auditory, reading, kinesthetic) and two (2) working memory (signs, gestures model). The analysis of the Quran memorization application was also performed to identify the gap in the Quran memorization techniques studies to support the proposed adapted elements of the EzHifz model design. The outcomes from the analysis phase produced the proposed adapted elements of the EzHifz model as a guide for the EzHifz model design in the next phase.

In the design, development, and implementation phase, the proposed adapted elements of Mayer's model were used in the design stage for designing the EzHifz model design and EzHifz prototype which were added with the elements of the ARCS motivational model using fidelity is low-fidelity and high-fidelity. The fidelity steps involve sketching the EzHifz model design using paper-based and digital EzHifz model design until finalized. The output of this design phase is the Low-fidelity EzHifz model design for motivating the students to memorize the Quran. In the development stage, the flowchart and storyboards were illustrated to provide an arrangement of the content, the connection between the screens, and navigation to develop the elements of the EzHifz model design. The output from this development phase produces an EzHifz prototype that represents the EzHifz model for the android platform. In the implementation stage, the testing was conducted through an interview with the students as respondents and validation of the adapted elements of the EzHifz model design by six (6) experts from the Quran field and the Educational Technology field for the EzHifz prototype. The results of the interview showed positive responses and feedback as well

as the validation of agreement of the adapted elements of Mayer's model by the experts through the content validity form.

Finally, the evaluation phase was conducted with the students to evaluate the EzHifz prototype that represents the EzHifz model on the usability of the application to facilitate and motivate students in memorizing the Quran. The evaluation is conducted through the evaluation of the EzHifz prototype developed in the aspect of usability (learnability, user satisfaction) and motivation (attention, relevance, confidence, satisfaction). The results of the evaluation showed positive feedback from the students as the end-user of this application prototype. This indicated that the EzHifz model and EzHifz prototype were suitable to be used for motivating students in memorizing Quran verses and translation. Furthermore, the research implications of the study have also contributed on theoretical, methodological and practical as discussed in the following section. Table 6.1 summarizes the research output of this study.

Table 6.1: Summary of Research Output based on RO and RQ

Phase	Research Objective (RO)	Research Question (RQ)	Method	Instrument	Output
Analysis	RO1: To identify the multimedia representation learning model elements for Quran memorization techniques based on VARK learning style	RQ1: What are the appropriate multimedia representation learning model elements for Quran memorization techniques based on VARK learning style?	-Literature Review -Comparison with previous studies -Preliminary Study	-VARK Questionnaire -Observation Form -Interview Question -	-Comparison with previous studies of mobile application design. -Propose four (4) elements of the EzHifz model: thirteen (13) Quran memorization techniques, one (1) multimedia presentation, four (4) sensory memory and two (2) working memory -Descriptively analysis using SPSS 23.0.
Design, Development & Implementation	RO2: To design and develop the model of multimedia representation learning for motivating in memorizing Quran	RQ2: How to design and develop the model of multimedia representation learning for motivating in memorizing the Quran?	-Low-fidelity EzHifz model design -Pilot Study --Interrater analysis using Fleiss Kappa.	-Interview Question -Content validity Form (experts)	-Final EzHifz Model design -EzHifz prototype
Evaluation	RO3: To evaluate the usability and user motivation of Multimedia Representation Learning Prototype (EzHifz) for memorizing Quran.	RQ3: What are the responses on the usability and user motivation of Multimedia Representation Learning Prototype (EzHifz) for memorizing Quran? RQ4: Does the usability of the EzHifz prototype for memorizing the Quran influence students' motivation in memorizing the Quran?	-Quasi-experimental	-Questionnaire -Observation Form -Task List	-Positive feedback and response on the usability of the application and user motivation -Descriptively analysis, percentage of success, and correlation analysis using SPSS 23.0

6.3 Research Implications

The Multimedia representation learning model (EzHifz) for memorizing the Quran is an important study to be implemented. The development of technology-based in the context of multimedia design with a universal principal design in Quran memorization techniques is still limited and needs to explore. This study adapted an existing Mayer's model or Cognitive Theory Multimedia Learning (CTML) that is sufficient for this study to meet the user's needs. EzHifz prototype may serve as an alternative technique for motivating the students to memorize the Quran. This EzHifz prototype that represents the EzHifz model was accepted by the respondents as a supportive tool for motivating students to memorize the Quran verse and translation based on their preferred VARK learning style. The implications of the EzHifz model in memorizing the Quran are as follows:

6.3.1 Implication of EzHifz model as Supporting Tools

EzHifz model can provide techniques for memorizing the Quran verse and translation based on the selection of the user's preferred VARK learning style. The EzHifz prototype also can motivate and assist the user in memorizing the Quran in a new environment through a mobile platform. The prototype of *surah Al-Insaan* was provided with four modes of learning visual (visualize the pictures), auditory (recognize the sound of recitation), reading (recognize the words), and kinesthetic (imitate the movement of body motion and hand gestures) verses to facilitate in memorizing the Quran. The Quran verse and translation are supported by the techniques to memorize the Quran. The EzHifz model has been proven as a suitable model for motivating students to memorize the Quran through the evaluation of the EzHifz prototype. The

evaluation showed positive feedback and response by the experts and students in terms of usability (learnability, user satisfaction) and motivation (attention, relevance, confidence, satisfaction). Moreover, the experts have agreed with the elements of the EzHifz model evaluated. This means applying the elements to the EzHifz prototype as an alternative technique or supporting tool in memorizing the Quran. Therefore, the EzHifz model benefits the users with an alternative technique and supportive tool for motivating users to memorize the Quran.

The EzHifz model has given implications to the students in motivating them in memorizing the Quran. The EzHifz prototype had been designed using EzHifz model elements in four selection modes of learning that can assist students in memorizing the Quran based on their preferred VARK learning style. The combination of four modes of learning might cater to the weaknesses of students in their learning because generally individuals are associated with different VARK learning styles. These findings state that teachers need to combine all the strategies in the teaching and learning process to give more abilities and cover the students' weaknesses in their learning. The structure of VARK learning style categories or arrangement of mode preferences also demonstrates the strength and abilities of individual preferences modes of learning. Therefore, we also acknowledge that students may require more than one sensory modality for information processing. With the use of multi-modalities in teaching and learning, all learner needs can be addressed. This finding also shows that VARK learning styles impact positively the learners' performance and motivation once they are taught through several learning modalities.

6.3.2 Implication of the EzHifz model as a Guideline

The EzHifz model is essential to facilitate the Quran memorization process. The proposed elements of the EzHifz model as an adapted element from the existing Mayer's model may be beneficial for developers, designers, and researchers to refer to as guidelines in designing multimedia learning applications to improve the user needs and experiences based on the VARK learning style. Therefore, it is vital to involve the instructional design in the process of developing multimedia learning applications to encourage users to active learning instead of producing effective digital content.

6.3.3 Implications of the EzHifz model in Memorization

Multimedia technology and mobile platform features have provided benefits in Quran memorization as it is embedded in the EzHifz model. The benefit of the EzHifz model might also be applied in many fields that use the skills of memorization. The EzHifz model makes the process of memorization more interesting and motivating based on their preferred selection modes of VARK learning style. The integration of techniques with the VARK learning style, enables the users to use the right modes of learning style which represents their strength to receive knowledge in the memorization process. The EzHifz model also adapted the elements of the gestures channel in the model of Cognitive Theory Multimedia Learning (CTML) instead of visual and auditory channels. The elements in the component of the EzHifz model support the human information processing system to memorize the Quran based on the VARK learning style. The EzHifz prototype developed that represents the EzHifz model provides a selection of modes of learning based on the VARK learning style that integrates with Quran memorization techniques in the multimedia learning environment to memorize

the Quran verse and translation. It is developed in a mobile-based platform to facilitate the user's self-learning and motivates the users to memorize the Quran anywhere and anytime. The development of multimedia learning in mobile-based also can give a high impact on memorization in delivering the information. Moreover, these research theories, design principles, concepts, and processes may be beneficial to other fields that use memorization skills as a strategy and approach to the method of learning.

6.4 Research Contributions

This study aims to provide a framework on how to design and develop the Multimedia representation learning model (EzHifz) by adapting the elements in Mayer's model or Cognitive Theory Multimedia Learning (CTML) with the VARK learning style model, Multiple Intelligence Theory, ARCS Motivational model and EzHifz model elements. The evaluation of the EzHifz model is also important to analyze the usability application and user motivation once using the application. Therefore, the findings of this study offer several contributions, and they are divided into theoretical, methodological, and practical contributions on how the EzHifz model can be used as a supportive tool in memorizing the Quran:

6.4.1 Theoretical Contribution

The EzHifz model was designed based on the VARK learning style model, Multiple Intelligence Theory, and ARCS Motivational model, including the literature review, comparison with previous studies, and preliminary study of EzHifz model elements. These theoretically contributed to the body of knowledge in multimedia learning design in Quran memorization by enriching the literature review by enhancing the elements in

designing the EzHifz model. Besides, the EzHifz model design framework also supports human information processing by adapting Mayer's model based on the VARK learning style. The elements in the components applied are used to provide users motivation in memorizing the Quran verse and translation.

6.4.2 Methodological Contribution

This study used the ADDIE Instructional Model which explained the systematic process to develop the EzHifz model and EzHifz application prototype. It focuses on the experimental design to test the usability of the application and user motivation to end-user as the real respondents. These contribute to the framework of design for the EzHifz model design, low-fidelity EzHifz model design, EzHifz application prototype, evaluation of the usability of the application, and user motivation for memorizing the Quran. Overall, it provides contributions to the summative and formative evaluation designs. It also can provide a detailed process to develop the EzHifz application design throughout the ADDIE phase that will enrich the methodology and be used as a guideline by other researchers and developers.

6.4.3 Practical Contribution

The EzHifz model introduced a new approach in the research of Quran memorization which focuses on Quran memorization techniques based on the selection of the user's preferred VARK learning style. EzHifz prototype provides an alternative technique for memorizing Quran to enrich the existing supportive tools related to Quran memorization. In addition, the study will contribute to the field of EzHifz model design

and EzHifz application design in the context of multimedia design principles and approaches for motivating users to memorize the Quran.

6.5 Recommendations for Future Research

Based on the results of the study, the following are some suggestions for a further study in the future:

6.5.1 The Element of EzHifz Model

The Multimedia representation learning model (EzHifz) is a model that adapts Mayer's model with EzHifz model elements aimed at motivating users to memorize the Quran. For future studies, this model can be improved by considering other elements of Quran memorization techniques, theory, steps, related activities, tasks, variation of multimedia elements, features, and approaches to improve the quality of the model and increase the motivation of users.

6.5.2 The Content of EzHifz prototype

This study provides the students with the *surah Al-Insaan* as a prototype in the EzHifz prototype representing the EzHifz model. For future studies, this model can be improved by enhancing the EzHifz model design with another *surah, asbabun nuzul,* pronunciation *(makhraj), tajweed,* and other Quran memorization techniques and technologies as supportive tools. This will need more collaboration from the Quran experts for an extension of this research.

6.5.3 The Methodology Study of Usability and User Motivation

The usability of the application and user motivation was conducted in this study through a survey and observation methods. Further studies can be conducted by combining several appropriate usability testing and motivation testing methods and approaches. A combination of appropriate methods might produce a better result and more accurate research findings and contributions.

6.6 Conclusion

This study is an effort to design the Multimedia representation learning model (EzHifz) for motivating students in memorizing the Quran. This study subsequently contributes an application prototype that represents the EzHifz model as a supportive tool to assist the student to memorize and motivate them to memorize the Quran verse and translations. For this purpose, a conceptual framework on the EzHifz model which adapts the Cognitive Theory Multimedia Learning (CTML) with EzHifz model design elements and the ARCS motivational model, is proposed to use low-fidelity and prototyping techniques. The proposed EzHifz model design elements have successfully been applied in designing the EzHifz model to provide alternative techniques to memorize the Quran verse and translation based on selection modes of the preferred VARK learning style. Since the results of this study, students, teachers, researchers, designers, and developers can benefit from these findings, which demonstrated the EzHifz model design elements integrated with the ARCS motivational model to assist student motivation in memorizing the Quran. Therefore, the implementation of the EzHifz model in this study has overcome the problem and needs faced by the students that have difficulty memorizing and lack motivation in memorizing the Quran as stated

in Chapter 1. Knowing their right strength modes of VARK learning style might provide them with the easiest way to learn. This will also encourage them to memorize the Quran verse and translations. This study hopes that students will be interested in using the EzHifz model through the EzHifz prototype and subsequently will contribute to the multimedia design field in the Quranic domain. The researcher believes that the EzHifz model is seen as a study that can be enhanced in the future through various aspects. This study concludes that the Multimedia representation learning model (EzHifz) which is an adapted model of Cognitive Theory Multimedia Learning (CTML) is suitable to use as a supportive tool that can motivate students to memorize the Quran verse and translation effectively.