

Using Multimedia Instructional Design to Teach the Holy-Quran: A Critical Review

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Abstract

This critical review develops an effective multimedia instructional design model and a multimedia courseware called Al-Furqan to evaluate and validate the new model and to teach the Holy-Quran to students' in primary schools. The critical review scope involves the teaching of the Holy-Quran to Libyan students' who are in the 5th grade at primary schools in Malaysia. The main objective of this review is to illustrate an effective learning method through the new model as well as Al-Furqan courseware which assist students to learn the Holy-Quran effectively and efficiently, to the extent that they are able to read, write and memorize it. This review utilizes the ADDIE model as a concept in teaching the Holy-Quran to Libyan students. This review applies instructional design models to teach the Holy-Quran. The second part of this research will discuss how to develop a viable instructional design to teach the Holy-Quran.

Keywords: ADDIE Model, Holy-Quran, Primary School, Multimedia Instruction, learning, education, teaching.

Introduction

Scholarly literature which entails most of the learning methods including multimedia and also describing the state of the art models for effective learning will be investigated in this chapter.

2.1 What is Multimedia?

According to (Natarajan, 2003) Multimedia is the combination of audio, pictures, animation, text, video, and interactivity. It is a vital instrument to entertain students in classrooms. For example, teachers use it (multimedia) to explain complex lessons like the science. They believed that it assists the students in understanding science better and it helps teachers deliver the lessons effectively.

2.2 The Effects of Multimedia on Learning

Information technology (IT) plays an important role in education, according to Leidener & Jarvenpaa (2005). Computer-assisted instruction (CAI) such as multimedia or interactive software programs (ISP) provides information in sequential modes to increase students' knowledge. Therefore, multimedia support the transferring of knowledge sufficiently and offers good environments for students to avoid feeling bored in the classroom. It can also be argued that IT supports students receive knowledge effectively. In addition, ISP enables students to obtain knowledge and communicate with each other via multimedia. The most significant impact of multimedia is the ability to transform tacit knowledge into explicit knowledge so that it is easier to transfer especially for students at primary schools. Students are satisfied with multimedia and it increases their motivation whereas participation allows them to maintain the process of learning for a long period of time compared with traditional classroom methods.

2.3 The Multimedia and Teaching Process

The majority of teachers focus on information technology (IT) to enhance the knowledge transfer (KT) environments, based on a study by Josefina et al., n.d. (2010).

Hence, multimedia was proposed as a new method to help students receive knowledge so that they may enhance their performance, communication, and solve problems effectively. Computers are also being used by students as an assistant tutor, to develop their skills, facilitate KT and it also serves as a companion to develop their thinking, creativity and skills. Computers also assists navigation among students and teachers concerning the contents of multimedia lessons that they would like to learn, it helps them to gain vital knowledge and increases motivation to avoid difficulties in the learning process, according to (Lim et al., n.d. 2005).

In addition, multimedia technology and its effectiveness are simply to enhance learning by combining pictures, audio, video, texts, and graphics with suitable animation, simulation and at the same time it keeps students focused. Multimedia presentations provide an effective KT for all students, especially for children and those with learning disabilities; it helps them to understand the concepts even before reading the text of any lesson. According (Zimmer, 2003) many research studies pertaining to efficiency of technology-rich environment based on preschool to high school students observed significant gain and achievement in regular and special needs and increased self-confidence. In this research it has been found that the usage of multimedia is as effective as assistance tutoring for students, especially in mathematics.

2.4 Multimedia and Education

Multimedia applications are used in education to transfer knowledge effectively, and enhance the ability of teachers and learners in their process, in terms of memorizing and recalling the information when needed due to the ease of the approach which multimedia provides in teaching through transferring knowledge. Teachers will track the lesson step-by-step so they will not forget any part of the prescribed lessons while, students will be engaged with the content as it is presented visually using multimedia elements (Edinburgh University, 2010). Multimedia in education is implemented in many different modes of learning such as individual, classroom, group, distance and open, and 'closed' learning.

2.4.1 Multimedia Application in Classroom (MA)

Neo & Neo, (2002) conducted a study using multimedia to transfer knowledge, which has become a new phenomenon and it has transformed the roles of users. A clear process between students and information is offered by Multimedia Application (MA) which allows the process of learning to be more effective for students. MA environment in classrooms also motivates students to interact and engage with lecturers and teachers in comfortable ways which makes the lectures more informative and interesting. Finally, multimedia produce a dynamic learning atmosphere.

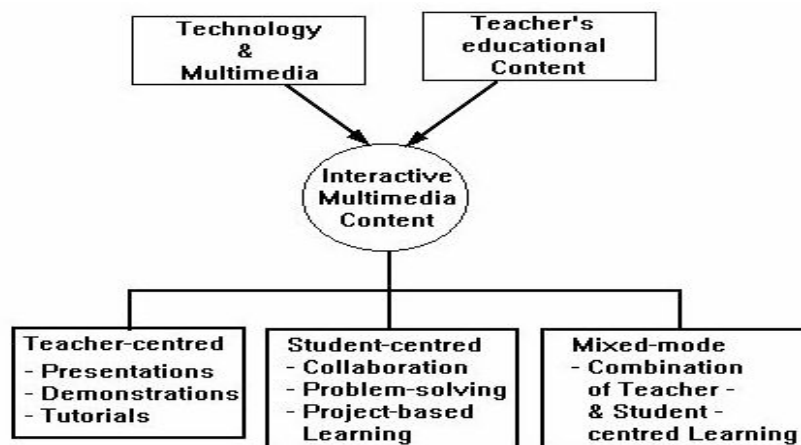


Figure 2.1: Multimedia applications and teachers' content (Neo & Neo, 2002).

2.5 Multimedia and Knowledge Construction

Transferring information and enhancing knowledge construction in learners effectively is the main aims of Multimedia. According to (Mayer & Moreno, 2000) this is done by presenting relevant materials in text and images, and helping learners to process the presented materials in meaningful ways. Therefore, in their study there are five significant aids in multimedia learning which are quite effective and powerful as supporting ways of transferring knowledge as follows: by (Mayer et al., 2004).

Table 2.1: provides Empirical Multimedia Results and Applications by (Mayer as cited by Doolittle, n.d.).

Empirical Results	Practical Application
Multimedia Aids: students learn better from words and pictures compared to when learning from words alone.	Text or narration is coupled with visual images to make learning interesting.
Contiguity aids: Students learn better when corresponding pictures and words rather than separately.	Text should be close to the pictures and placing the text within the images is more effective
Coherence aids: Students learn better when extraneous words, pictures and sounds are excluded.	Multimedia presentations should focus on clear and concise presentation.
Modality aids: Students learn better from animation and narration rather than animation and on-screen text.	Multimedia presentations should involve both words and pictures by using auditory or spoken words.
Redundancy aids: Students learn better from animation and narration than from animation, narration and on-screen text.	Multimedia presentations involving both words and pictures should present text either in written form, or in auditory form, one of them only not in both.

2.5.1 Multimedia and Knowledge Transfer

It has been suggested by Polanyi (1967), that knowledge transfer (KT) is incomplete due to people not being able to express exactly what it is they know. It is not completely transferable from one mind to another, whereas the important point is to transfer the concepts. KT can be performed via multiple portals, parsers, collaboration tools, technologies, the content of managements, and databases which are presented by multimedia applications. KT is certain activities and has numerous purposes in the organizations which helps research institutions to enhance the achieved results for the benefit of the public. The transformation of knowledge is possible through 5 ways such as near and far transfer, Expert Transfer, Serial Transfer, Strategic Transfer, (Dixon, 2000).

2.5.2 Multimedia and knowledge management (KM)

According to Mutiara and Muslim, (2011) In knowledge management (KM), multimedia play an important role, which can be used by different entities in various places. KM presents many challenges but it also presents many advantages. Multimedia applications in KM allow employees and students to access, analyze, share, transfer and present information obtained from multiple sources via various means. The use of multimedia in KM provides opportunities for people to work independently and collaboratively. Knowing and understanding the use of multimedia application prepares students to use such technologies in their daily lives.

Multimedia Learning Models

There are three models presented in this study; SECI, ADDIE, and Instructional Design (ID) Model:

1- SECI Model

The SECI Model is a knowledge transfer (KT) based model and it has diverse ways for knowledge creation and to manage the process effectively and efficiently. The SECI model contains combination; explicit knowledge to explicit knowledge, externalization; tacit knowledge to explicit knowledge, socialization; tacit knowledge to tacit knowledge, and internalization; explicit knowledge to tacit knowledge. The SECI elements must be integrated under the clear leadership so that the organization can produce knowledge dynamically and continuously. The main idea of this model is that the knowledge held by individuals should be shared with other individuals so that it interconnects to a new knowledge (Nonaka & Takeuchi, 1995).

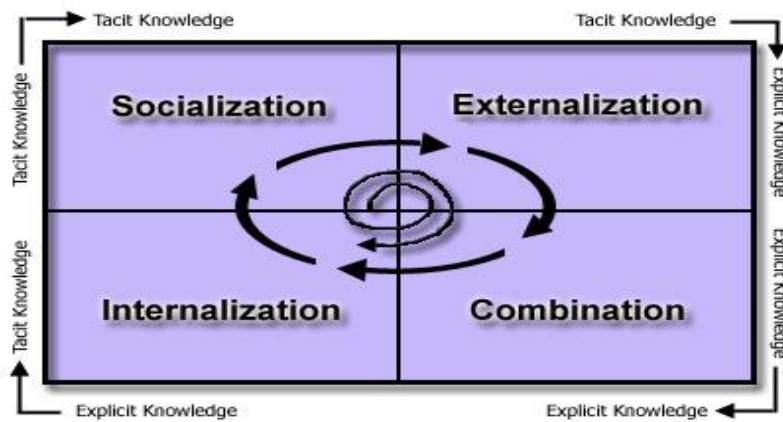


Figure 2.2: Spiral of knowledge creation by Nonaka & Takeuchi (1995)

2- The Instructional Design model

The Instructional Design (ID) Model is identified according to learning theories and the associated design to accomplish the recognized research and learning objectives of students. The ID Model for Planes and Lines in 3-Dimensions (3D) courseware lists media factors with 3D models. The use of a 3D model along with instructional media supports the learning theories in terms of visualization. The contents of the courseware are separated into three major parts namely: Lessons, Overview, and then Questions. In Question section, the students should answer the questions based on the topic learnt which covers the practical aspect as well as SPM format questions. The Question based section supports learners in terms of constructivism learning hypothesis since learners are able to develop their understanding based on self-directed activity (Noordin, et al, 2011). However, the study will select one of the models, which will match and strengthen the study objectives of this research.

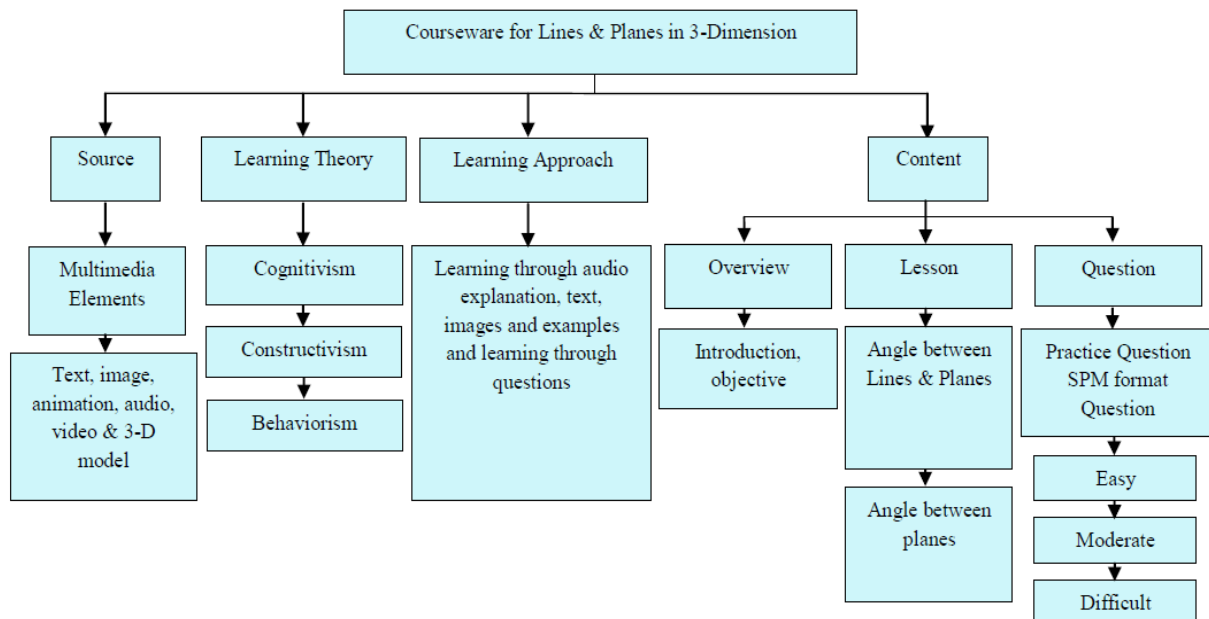


Figure 2.4: ID Model of Multimedia Courseware for Lines & Planes in 3-Dimensions

3- The ADDIE Model

It is an instructional design model (IDM) which provides step-by-step methods that assists in creating training programs. Its components are as follows: Design, development, evaluation and implementation. This process includes the entire training development process; from the first time being questioned, about what people need to do to learn?

Till the point where someone actually measures, whether or not people learn what they need to learn?. According to (Dick & Carey, 2004). To provide an extremely clear and transparent approach is its aim so that researchers may design the program structure accordingly. It also provides an overall view of the learning process and it is characterized by an orderly process for gathering and analyzing collective and individual performance requirements. Hence, it is helpful for this research and provides a step-by-step process which assists in building the prototype.

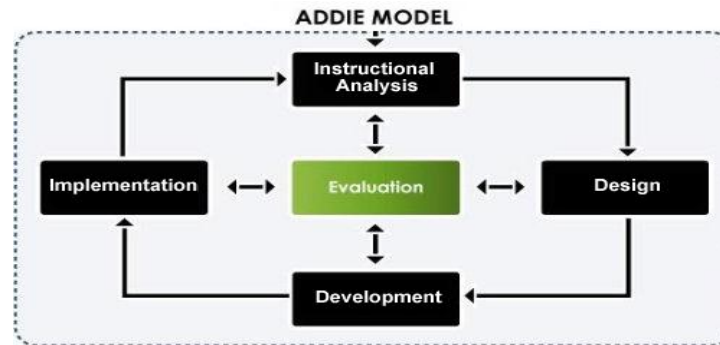


Figure 2.3: ADDIE design model (Dick & Carey, 2004).

This study will select ADDIE Model, because it matches and strengthen the study objectives of this research and will add some functions to the chosen model to come out with the new model of teaching the Holy-Quran.

Motivation Theories

Theories of Learning Motivation (TLM)

The TLM has been adapted by Cross and Steadman, (1996), they adapted it to the elements which have an effect on motivation. In addition, there are psychological factors in motivation. Learners' perception of their competence and how they estimate the amount of control they practice in the process of learning greatly affects their performance, some TLM are outlined in a short period of time. The significance of the theories in teaching is emphasized to the tutors (Wahab, et al, 2012).

1- Maslow Theory Of Motivation

This motivation theory is one of the most famous and the influential theories of motivation in the workplace. Firstly, Abraham Maslow the psychologist has developed his theory of individual growth and motivation in the 1940's. He proposed that man has a hierarchy of needs, it is that all people behave in a certain way that addresses their basic needs, and this is before moving to satisfy the needs of the upper level. Furthermore, Maslow's motivation shows how important it is for our needs to be met before going up to the hierarchy, to address more composite needs such as, the need to meet the essential, physiological need for water, food and warmth as well as focus on safety which is the need to join the community and so on. However, the motivation theory of Maslow is typically represented by five steps: Esteem, Physiological, Safety, Social, Self-actualization needs (Maslow, A. H., 2011).

2- Cognitive Evaluation Theory

These theories move from external to internal and the rewards and outcome leads to motivation. It still survives after the external, internal stimulus stop. It attributes to the pay structure in an establishment or an organization. When treating external elements like inducements, pay, promotion etc., and internal elements like interests, drives, obligation etc., individually, they ought to be treated normally to each other. The cognition is such an internal motivation will continue even if the external motivators are not there. However, practically extrinsic rewards are given a lot of weight age (Frederick & Ryan, 1995).

3- Self-Efficacy Theory (SET)

The Self-Efficacy of learning motivation (S-E-T) emphasizes an individual's beliefs about one's ability to learn, according to Schunk (1991). Some are of the opinion that one's ability is a characteristic established since birth and is seen as a fixed trait.

While others believe that the ability can be expanded and people can achieve success through hard work. This incremental view of ability motivates us to adopt challenges so that we may increase our ability, knowledge and to encourage us never to quit when tasks become extremely difficult. However, for others, impressions about their deficiency to learn are more significant than real skill levels. Learners sitting in class might have high intelligence but lack assurance in their ability to finish tasks successfully by (Hu, 2010). In addition, educators can increase learners' optimism level of possible success and reduce their concern of failure by providing temperate, non-threatening levels of challenge. The fact that learners focus on their ability to succeed depends on two factors which is; their level of difficulty and their confidence in their ability to succeed in a particular duty. Permitting learners to revise their subjects, by giving them options in tasks, and always providing positive feedback on all learning tasks will enhance their duty, intelligence of control, and mastery, University Center for the Advancement of Teaching (Schunk & Pajares, 2009).

4- Assessing Motivation

Angelo, (1993) proposed that in techniques based on Classroom Assessment, tutors are able to find several instruments to help uncover the motivations of their students' for teaching programs such as a Course-Related Self Confidence Survey which allows learners to place their self-perceived assurance in the topics associated to their course. The particular Autobiographical Sketch can be used early in the program to assist tutors in deciding how their learners' past successes and failures might be attributed to their eagerness to assume learning challenges which are vital to their course. Instruments like these can be valuable in looking for ways to modify the curriculum and adapt teaching schemes that will allow ultimate success in their learners' (University Center for the Advancement of Teaching, 2009).

2.6 Traditional Methods of Teaching

The conventional method of education where learning plans and activities are all set from the perspective of teachers refers to the traditional face-to-face teaching. In face-to-face teachings, traditional methods of instruction are adopted. It is the responsibility of one instructor to teach tens of students a particular subject and then evaluate the student's progress through regular tests. In addition, the only source of learning for the students is the teachers and their teaching materials. Besides, this takes place without considering individual differences, materials and courses arrangement and due to this student's competence level cannot be reflected individually. Finally, students are equally treated like beginners and are forced to accept knowledge which might be mastered already. Hence, this instructional model might be a waste of time and even decrease the learning motivations of students (Liu, 2010).

In Addition (Kim, 2003) suggested that traditional learning patterns mostly utilize face to face methods to deliver educational materials during the use of classrooms to students. The method involves the physical attendance of students in order for learning to occur. The evaluation and student assessment are made via the same method. It has a cultural effect as community interacts and learns from each other. Students have the chance to communicate with the teacher and other students in the process of learning which forms strong relationships. However, a traditional mode limits the education distance and cannot reach all people as they are separated by space and time.

2.6.1 Strengths and Weaknesses of Traditional Methods of Teaching

Table 2.2: covers the strength and the weakness of the traditional teaching approach.

Strengths (Advantages):	Weaknesses (Disadvantages):
<ul style="list-style-type: none"> • Allows the tutor to expose learners to unpublished materials. • Gives the tutor the opportunity to decide the aims, content, direction, organization and rate of a presentation while, other methods such as, discussions or laboratories requires the tutor to deal with learners' ideas, comments and questions. • The tutors use it to increase the interest in a subject. • Text materials can be supported and simplified by this method. • Certain individuals learning preferences can be combined. • Assist communication between students (big-class). 	<ul style="list-style-type: none"> • Puts learners in a relaxed mode rather than pressurizing them, which delays learning. • The lecturer must be aware of students' difficulty/weaknesses and understanding of content without speaking feedback because this method encourages one way communication. • It requires the time of a number of unguided learners' outside the classroom to allow understanding and long-term retention of content while interactive methods allow the tutor to persuade learners when they are actively working on the material. • It requires the tutor to learn effective skills of writing and speaking.

2.6.2 The Effects of Traditional Teaching on Students Learning

Students who are being taught in the traditional method are less excited and motivated during the process of learning. Furthermore, they are unable to repeat the same sector more than once. Due to traditional methods text materials and black and white board, which does not contain audio, images or videos, students find it hard to motivate their learning process.

2.7 Information Technology and Learning

The Professionals of Computer for Social Responsibility (CPSR) said that web technology feeds our thoughts when they state, the future is driven by technology, but steering it is up to our thinking, so there is a need for our hands to be on the wheel (CPSR, 2007) – according to Rochelle, (2008). So how do we organize ourselves so that we may steer as individuals working with Information Technology? Furthermore, if we start using technology at a young age it is the best time to teach good ethics and morals. But, this discussion desires to continue in our classrooms at the college level. Our learners need assistance to make ethical decisions that are unique in driven technology of today's world. Furthermore, Samuel (British author in the 1700s, famous as Dr. Johnson) wrote that Integrity without knowledge is useless and weak, and the opposite is risky and terrible (Berkowitz, 2007). According to Moor (1985), a usual problem in computer ethics occurs because the policy vacuums about how we should use the technology of computers. It is obvious that nowadays technology driven environment computers offer us new capabilities that provide us new options for action. The aim of computer ethics (CE) is to decide what we should do in such cases. CE contains consideration of social and personal policies for the moral use of computer technology (Moursund, D. G. 2003), Brooks, R. 2011).

2.8 Conclusion

In conclusion this study emphasizes on selected cases and how it helps to match the objectives of the study. In addition, using multimedia courseware in teaching and learning process will be interested in learning process and more effective.

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