AN INVESTIGATION OF ISLAMIC DIGITAL GAMES
AS A PERSUASIVE TOOL FOR SPREADING ISLAMIC
DA'WAH

BY

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A dissertation submitted in fulfilment of the requirement for
the degree of Master of Information Technology

Kulliyyah of Information and Communication Technology
International Islamic University Malaysia

NOVEMBER 2016

ABSTRACT

Islamic digital games (IDG), can be referred to the combination of Islamic knowledge such as Arabic letters, Qur'anic verses, prayers and Islamic attire (clothing) with game elements as a persuasive tool to spread Da'wah in the Muslim and non-Muslim community. This study stands to investigate the common and unique features of IDG as a persuasive tool and to propose effective design recommendations for developing IDG to increase its' popularity. To effectively do this, the content of twenty Islamic games based on Fogg behaviour model and CBGD framework were identified and used to provide necessitated attribute. Around 200 existing Islamic digital games from various platforms were explored in order to select the best twenty games. Then, the study chose the best three Islamic games, which are: *Ali and Sumaya*, *Noor Quest* and *Marble learn Qur'an* by analysing the content of the twenty Islamic games chosen. A mix mode research method, which consists of quantitative and qualitative research technique was adopted by the study. A total of 20 respondents participated in the study. During the experiment, the respondents were individually required to spend 15 minutes on each game. Then, the questionnaire survey, covering all the important elements for digital games which are users' perception, users' abilities and interactive game was given accordingly to achieve the research objectives. Ultimately, an interview was also conducted to understand the respondent's viewpoints toward playing the three Qur'anic games. The study indicated that animation, graphic, sound and rewards have a direct influence on the attractiveness of the game players. Moreover, the narrative elements should be considered as a unique feature in developing Islamic Digital Games.

ملخص البحث

اللعبة الاسلامية الرقمية تعني المزيج بين المعرفة الاسلامية مثل تعليم الحرف العربي والقرآن والصلاة واللباس الاسلامي مع عناصر اللعبة كالأدوات المقنعة لنشر الدعوة في المجتمعات الاسلامية والغير الإسلامية. تقوم هذه الدراسة على التحقق من الخصائص الشائعة والفريدة للعبة الاسلامية الرقمية كأداة مقنعة واقتراح توصيات لنموذج فعال لتطوير اللعبة الاسلامية لزيادة شعبيتها ولعمل ذلك فان محتويات عشرين لعبة اسلامية معتمدة على نموذج سلوكي مضبب تم استخدامه لتوفير السمات الضرورية. تم مراجعة حوالي مئتان لعبة اسلامية رقمية من مختلف المصادر من اجل تحديد افضل عشرين لعبة. هذه الدراسة اختارت افضل ثلاثة العاب اسلامية من اصل كل اللعاب الاسلامية وهي (علي وسمية)و (نور تسال)و(تعلم القران المرمري) بعد التحليل لمحتوى العشرين لعبة المختارة فقد تم اختيار طريقة البحث المختلط والذي يحتوي على التقنية الكمية والنوعية والتي تم اعتمادها في الدراسة. مجموع عشرين عينة من المستطلعين من دار الحفاظ طلاب البرنامج الانجليزي في ماليزيا و مدرسة انوار الاسلام طلاب البرنامج التايلندي في تايلند حيث كان يطلب منهم خمسة عشر دقيقة لاستخدام كل لعبة وبعدها تم إجراء دراسة استطلاعية استقصائية لتغطية كل العناصر المهمة للالعاب الرقمية وهي فهم المستخدم وقدرات المستخدمين و اللعبة التفاعلية تم إختبارها لتحقيق اهداف البحث. في النهاية تم عمل مقابلة استقصائية لدراسة اراء المستطلعين حول استخدام الالعاب القرانية الثلاثة.الدراسة تؤشر ان التاثير الحركي و تأثير الصور والصوت والمكافآت كانت لها تاثير مباشرا على جذب انتباه اللاعبين وكذلك العناصر السردية يجب اخذها بعين الاعتبار كميزة أساسية في تطوير اللعاب الاسلامية الرقمية.

APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion; it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Master of Information Technology.

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DECLARATION

I hereby declare that this dissertation is the result of my own investigation, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degree at IIUM or other institution.

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This dissertation is dedicated to my beloved family

ACKNOWLEDGEMENTS

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Using technology for entertainment, has become such a common activity especially with the advent of technology. Activities like watching online movies, online playing of games and instant messaging are regarded as a common thing that people of this generation do across the globe. Most of the existing digital games focus on providing a fulfilment, entertainment and excitement for their players. To serve as a modern tool for releasing stress as well as deriving pleasure.

In the past, people use digital games for entertainment and educational purposes such as retelling any historical stories to educate the next generation. For example, Minecraft is a popular game among all ages that has been used as an alternative way to educate people in learning scientific concepts (Short, 2012). Minecraft provides a platform for players to build blocks, and spaces based on their own imagination. The game benefits players in different levels that includes solving, discovering, improving and developing spatial skills as well as encourages collaborative, creative, innovative and cultural skills (Short, 2012).

With the increase of technology, digital games were used to unconsciously sway players, change players' attitude and behavior by focusing on three main elements of the Fogg Behavior Model which are motivation, ability, and triggers. The model indicated that a person must have the elements sufficiently in order to achieve target behaviors (Fogg, 2009; Ponnada, Ketan, & Yammiyavar, 2012). In order to acquire the efficiency of digital games and embed the game values on players, human-computer interaction (HCI) was used to "deal mainly with aspects of human opinion,

understanding, intellect, sense-making and the most significant communication between human and machine" (Simos et al., 2013).

Recent researchers have discovered that Islamic Serious Games can be used to instill Islamic knowledge, practices and values for players, for example in changing and shaping people's mindset (Lotfi, Amine, Fatiha, & Mohammed, 2014) towards a certain Islamic topic. They added that Islamic Serious Games can instill the positive attitude on players such as compassion, forgiveness, responsibility and sociability (Paracha, Jehanzeb, & Yoshie, 2013). In relation to Islamic Digital Games, incorporating Islamic concepts or knowledge such as learning Hadiths of the Prophet Muhammad (pbuh) or learning Arabic as the language of the Qur'an can be a good example to expose and inculcate Muslim on the Islamic way of life and also able to read the Qur'an more effectively. This mode of presentation can also be an effective medium for the non-Muslim to learn, to know and willingly embrace Islam.

1.2 PROBLEM STATEMENT

There are a significant growing number of online game players in these modern years. Many researchers revealed that players were observed to have an Internet gaming addiction, based on the time and money they spent on playing digital games (Kalhour & Ng, 2016; Kneer, Rieger, Ivory, & Ferguson, 2014). Kneer et al. (2014) conducted a survey with 438 World of Warcraft players and the results showed that over half of the participants were addicted to this game with the following behaviors: spending excessive time when playing the game, keep thinking about the game even if they are not actively playing and the game is being part of their daily activities.

In addition, evidence shows that some digital games contain elements of violence that may build a child's tendency towards violence. As for Islamic digital

games, the games provide significant values and benefit rather than merely entertainment for both Muslim and non-Muslim. For instance, increasing players' awareness, Islamic moral values and sympathy (Paracha et al., 2013). However, the Islamic games have not gain enough popularity among the modern age, nation, and even continents, as compared to the general games.

Also, Islamic digital games do not have interesting elements for players to have fun, to adore as well as to derive pleasure. These elements can stimulate or draw the attention of players to begin the games or been held down by the game, instead of changing to other games (Normal, MdNor, & Ishak, 2014).

Moreover, the lack of researches and awareness on common and unique features of Islamic digital games has affected the growth in digital Islamic game communities. The Islamic digital game could have been a persuasive tool for convincing or a contributing factor towards the emotions and enthusiasm of players. It is one of the major reasons why the Islamic game is not popular today especially amongst children.

1.3 RESEARCH QUESTIONS

1. What are the common and unique features of Islamic digital games that can be a persuasive tool to spread Da'wah?

2. What are the perception of players after playing Islamic digital games?

1.4 RESEARCH OBJECTIVES

1. To recommend the common and unique features of Islamic digital games (IDG) as persuasive technology to spread Da'wah.

2. To propose effective design recommendations for developing Islamic digital games to increase the popularity of Islamic games.

1.5 THE SIGNIFICANT OF THE STUDY

The aim of this study is to explore the common and unique features of Islamic digital games as a persuasive tool to spread Da'wah and to nurture positive values in the society especially the Muslim world, and the non-Muslim at large. The study also investigate how IDG can be used for persuasion among players in this instance to inculcate Islamic knowledge and values.

Ultimately, this study aims at proposing effective recommendations for designing and developing Islamic digital games in order to promote the games, increase its popularity among players and convince players especially Muslim to play IDG rather than general games.

1.6 SCOPE OF THE STUDY

This study is proposed to investigate Islamic digital games as a persuasive tool for spreading Da'wah. Islamic digital games that consist of the important game design features based on persuasive concept will be explored to identify the common, unique and content of Islamic digital games. The questionnaires and semi-structured interview will be used to gain insight from the participants.

1.7 CHAPTER SUMMARY

This chapter introduces the background and the problem statement to indicate the contribution of this study. The objective and the questions of the research were discussed. In the last part, the significance and scope of the study were described to provide a field of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter reviews the literature on identifying good design features of Islamic digital games. The review begins with looking at the best way in designing a persuasive game. This theoretical review consists of graphical user interface (GUI), principles and challenges of game design. The theories mostly focused on combination of knowledge, learning and activities that can lead digital game to become effective and productive games. Besides, the study also look at the theoretical background that are more suitable in achieving the objectives of the study.

2.2 DESIGNING DIGITAL GAME AS A PERSUASIVE TECHNOLOGY

There are several researches on digital game persuasion. Some of the studies explain that using digital game for persuasion or learning purposes displays the use of digital games as a persuasive technology to convince people. The following researchers; Lucero, Zuloaga, Mota, and Munoz (2006) used a software which integrates the Gardner's multiple intelligent theory for both developing and motivating reading habits among children to improve reading and writing skills. According to an observation on the characteristics of children from private and rural schools, the result showed that the software had potential to motivate children in a positive way.

Another study by Gamberini et al. (2012) also revealed the use of mobile game application to increase energy awareness and saving in households. Similarly, the study of Lim, Park, and Suh, (2014) used a mobile game to promote self-awareness among

users in terms of the advantage of sunlight. The results of both studies were positive, as awareness was increased among players.

Ponnada et al. (2012) showed that using technology for persuasion was promoted in India for social development among children. The study used Fogg's behavior as the source to bring positive changes in children's behaviors such as timidity and shyness among children, ranging from 6 to 12 years of age.

As for the Muslim society, there are few studies on using Islamic digital games to inculcate Islamic knowledge and values among all generations especially children. Lotfi, Amine, Fatiha, and Mohammed (2014) developed a serious game for teaching ablution and praying correctly. They have tested the game with children, as well as adult students. The results suggested that the players were satisfied with the game and practiced in their lives. Furthermore, Paracha, Jehanzeb, and Yoshie (2013) used a serious game to inculcate Islamic values in school-aged children. The study required the children to play the serious game and was asked to respond to a series of interview questions. The results showed that the game increased moral values, empathy and awareness on intimidation that children have to overcome.

The idea of using game as a persuasive tool was explained by, King, Delfabbro, and Griffiths (2010) revealing that; presentation (i.e., graphic or sound in a game), social (i.e., share button), manipulation and control (i.e., loading screen or control keys), narrative (i.e., story in a game), reward and punishment features (i.e., bonus point or star) are important in developing a digital game. In addition, narrative features can cause long-term player or Video Gaming Addiction, while reward and punishment features evoked a sense of enjoyment.

Shelton and Scoresby (2011) stated the important features that directly affect and effect high school students, which are narrative feature and instructional goals. A

game story or narrative feature embedded lessons and simulated situations to players while instructional goals were designed to encourage players to comprehend lessons in a game. Both features played a significant role in increasing awareness and perception for players. The study also showed that the reward and punishment features like getting extra point or life enhanced the challenge and brings out the fun in games, but extremely focusing on fun may not allow the game players to achieve game's objectives.

For developing Islamic digital games, Lotfi et al., (2014) emphasized on narrative feature to gain attention of the players and developed a main character to smooth the learning processes such as ablution and praying. Correspondingly, Shimpai Muyou highlighted on story in a game such as bullying situation in order to simulate situations and provide solutions. According to a result, the players gained encouragement, empathy and Islamic moral from playing the game (Paracha et al., 2013).

Players may also gain a lesson when interacting with the game elements such as goals and role playing in a game. For instant, Muslim Kid in Evil Land game simulates the pre-Islamic Persia and requires a player to act as a practicing Muslim kid. The player is challenged to achieve the game's goals which are calling and guiding people to Islam by fighting magician's evil animals and the dark forces (Tobergte & Curtis, 2013). Therefore, it is safe to conclude that the narrative feature, reward and punishment are all significant factors for developing effective Islamic digital games.

2.3 THEORETICAL REVIEW

2.3.1 The Classification of Digital Games

Amr (2012) defined the characteristics of game as an active environment with the following characteristics: autotelic, challenges, interactivity, motivation, and governed

by rules. As for digital games, he also stated that, the games are generally played on a computer, console or other hand-held devices. Likewise, Marchand & Hennig-Thurau (2013) highlighted that the digital games are available on various devices such as consoles, portables, and mobile devices and furthermore, exist on multiple channels which are retail and online. In addition, Juul (2005) described the term digital game as:

> "A rules-based formal system with variable and quantifiable outcome, and different outcomes are not the same value, the player employs effort in order to influence the outcome, the player feels attached to the outcome, and the consequences of the activity are optional and negotiable".

Grace (2005), on the other hand, explains the difference between game type and genre. Elaborating further, the game type is used to tell the description of digital games for game categorization. For example, action, adventure, puzzle, role playing, simulation and strategy. In contrast, game genre is a way to describe narrative content of digital games. It can be in any form of word that players of the game can comprehend; the style of games such as the fictional activities and the educational morals in the game. However, some researchers also stated that "game genres can be categorized as action, adventure, fighting, puzzle, role-playing, simulation, sports, and strategy" and classifying the type of games depends on the content of the games. Some of the contents are best for role-playing and adventure games (Rapeepisarn, Wong, Fung, & Khine, 2008).

Similarly, Novak (2012) categorized game genres based on format, the instinct of a player and strategies of playing the game; all are as followed:

- Action: the genre focuses on action as the main attraction and player reaction time. As for action game, it has few sub-genres such as shooters, racing, fighting

and platforms. For example, the games that focus on moving quickly to avoid obstacles.

- Adventure: the genre focuses on exploring; wandering or solving puzzles and the goal of the game is for gathering treasures or finding the way out.

- Puzzle: the genre focuses on puzzles solving according to different level of difficulty.

- Role-playing game: the genre focuses on submerge player into the situation present in a game.

- Simulation: the genre focuses on replicating or simulating a system, a machine and experiences by matching with the real world situations such as vehicle, sport or process simulation.

- Strategy: the genre requires managing resources such as weapons or troops to achieve the goal of a game. This genre can be similar to Action.

In addition, Yee (2006b) stated that categorizing the genre of a digital game have a significant influence on the players' decision, such as when it is their first time playing the game.

Current study, conducted on the availability of Islamic educational games, also shows that the categorization genres which are adventure, action, simulation, strategy, puzzle, role-playing, education are featured and some of the games have more than one genre(Novak, 2012; Rapeepisarn et al., 2008).

2.3.2 Frameworks Related to Design Features of Digital Games as a Persuasive Technology

The frameworks and models available in developing or using digital games as a persuasive technology are limited in number. The study works on both frameworks and

models that includes game elements with the pedagogical dimensions of learning and theory for behavioral change in order to understand complex situations, develop, analysis of complicated design and it also interrelates the educational game design as well as serious games for encouragement. The next sections discuss the frameworks deemed related to this present research.

2.3.2.1 Cognitive Behavioral Game Design

This section briefly explains Game object model (GOM) and Game Achievement Model (GAM) to portray the basic understanding on the advancement of CBGD.

Game object model (GOM) is a framework that describes a relationship between the pedagogical dimensions of learning and game elements in order to understand complex situations, develop, and analyze complicated design. The framework also interrelates the educational game design (Amory, Naicker, Vincent, & Adams, 1999). On the other hand, the Game Achievement Model (GAM) was developed in order to solve the GOM's weakness which is the unclear solution provided on designing and building educational games. GAM provided the framework for educational games such as conceptualization, design, and development. The GAM explains that the foundation of any game is its objective and story line. The model also assisted in identifying different characters in a game story and it defined how the characters can enhance digital games and learning objectives.

Cognitive Behavioural Game Design (CBGD)(Starks, 2014) is a successful framework that covers on the main components and models of other frameworks such as the concept of game space as well as learning objective and brief story outline from GOM and GAM.

The main purpose of CBGD is for building serious games. A serious game can be defined as a game for specific purposes rather than for providing entertainment only. However, it can be adapted for other games as well. The model contributes to designing a games for learning and changing behaviours and it also focuses on how the model can express one or more social cognitive elements through the multiple intelligences elements for simplifying enjoyment process. According to Starks (2014), digital games should include engagement, challenge, flow, persistence, and mastery as significant elements in designing games. The CBGD proposed twelve multiple intelligence elements according to the theory of Gardner (1983) in order to engage students with combination of learning and activities such as graphical user interface, space, relationships, music, narrative, number, logic, physical movement, nature and personal reflection. The framework comprises of multiple intelligence elements (MIs), social cognitive theory (SCT) and principle of enjoyment processes. Moreover, the SCT provides guidelines for designers to develop digital games that deals with the behavioral change. According to the CBGD elements, the framework is adopted in a study in order to emphasize theory that explore good design features for Islamic digital games. The details of each element are explained as follows:
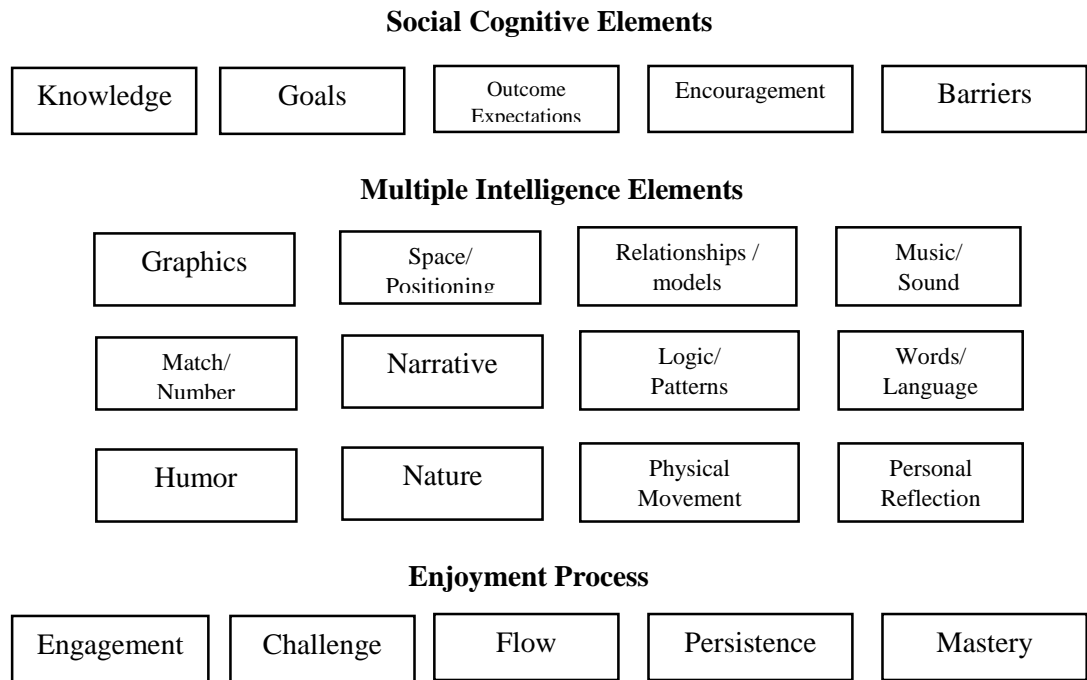
Social Cognitive Elements

Knowledge	Goals	Outcome Expectations	Encouragement	Barriers

Multiple Intelligence Elements

Graphics	Space/ Positioning	Relationships / models	Music/ Sound
Match/ Number	Narrative	Logic/ Patterns	Words/ Language
Humor	Nature	Physical Movement	Personal Reflection

Enjoyment Process

Engagement	Challenge	Flow	Persistence	Mastery

Figure 2.1 Cognitive Behavioral Game Design
Source: (Starks, 2014)

2.3.2.1.1 Multiple Intelligence Elements

1. Graphical User Interface

GUI or a graphical user interface is used to interact with devices such as PC or smartphone and users. The examples of GUI are icons, pointers, menu bar, button, and animation. Moreover, operating system can be known as GUI such as Microsoft Windows, MAC OSX and also the screen of each mobile platform (iOS, Android and Windows Phone) (Stigler, 2014). According to Gutierrez Miranda (2011), graphical user interface (GUI) is the communication between digital product and humans. GUI can be considered as an important part of communication between human and devices. When it comes to digital games, appropriate GUI designed is recommended as it can lead to enjoyment in game.