

## **A Study On Malaysian Language Learners' Perception Towards Learning Arabic Via Online Games**

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### **Abstract**

This paper reports a study on the perceptions of learning via online games among Arabic elementary language learners at the Centre for Foundation Studies (CFS), International Islamic University Malaysia (IIUM). The survey was a part of a front-end analysis for the design and development of an online Arabic vocabulary games prototype. It elicited learners' attitude towards Arabic language learning, their attitude towards playing ordinary video games and perceptions of utilizing online games in Arabic language learning. The descriptive quantitative and open-ended survey was distributed among 113 out of 133 learners, taking Arabic language course in an academic semester. The results showed positive level of pre-acceptance among learners' support and value-addedness of online games were also pronounced in the suggestions put forward by the participants. Based on the findings, the initial design principles were established to guide the development of the online game prototype. The paper further explains how the front end analysis aided the design and development of the online games prototype and ascertained it as a viable application in learning Arabic.

**Keywords:** online games, language learning, Arabic language, needs analysis, games design and development.

### **Introduction**

Digital games have been around for more than 25 years. Children of ages between 2 and 18 years old are reported to spend between 20 and 33 minutes per day in gaming habit (Green & McNessee, 2007). Games received a high and positive level of acceptance among users especially children and teenagers as well as adults that allow them to be exploited as a medium of teaching and learning. A study by Rubijesmin Abdul Latif (2007) showed that Malaysian students regardless of their gender are ready to accept the use of computer games in the learning process especially for Science. Based on surveys conducted among American teenagers, almost 97% of teenagers between the ages of 12 and 17 play games in various consoles such as computer games, web-based games, and portable or console games (Lenhart, Middaugh, Macgill, Evans & Vitak, 2008). This indicates that video gaming is pervasive in the teenagers' life.

Many researchers have embarked on studies investigating the potential of video or computer games in engaging learners. For instance, Squire (2005) has described it as a new model of e-learning. The potential of digital games in attracting the learners' attention has inspired the researchers to further explore the possibility of integrating it with an educational purpose in mind, similar to the works of Gredler (1992), Gredler (2004) and Prensky (2001). The terms game-based learning (GBL), digital game-based learning (DGBL), edutainment and 'serious games' are among the few that emerge from these attempts of using computer games in teaching and learning process (Tsai, Yu & Hsia, 2008). Thus, studying the perception and habits of video gaming among the teenage learners is timely. This paper seeks to describe the pre-university Arabic language teenage learners' perceptions and needs in relation to the use of an online game to improve their perceived Arabic language proficiency. It is also the purpose of the paper to highlight the potential of digital game-based learning, based on the collected data in the needs analysis (Richey, Klein & Nelson, 2004; Richey & Klein, 2007). The needs analysis which is a vital process in the development of an instructional product (Whitton, 2010) tends to be given less focus by developers who are enthusiastically seeking the completion of the prototype (Zarina & Hanafizan, 2005; Van Eck, 2006; Green & McNessee, 2007).

This paper however, places emphasis on the process and thus illustrates the early design principles, which is yet to be refined based on iterative cycles of testing and refinement of solutions in practice (Reeves, 2006 & Herrington et. al., 2007).

## **Literature Review**

The history of computer games started in the United States military as mentioned by Prensky (2001). It has also been connected with the ancient history of war games since 1600s as a practical training to improve strategic planning of armies and navies (Gredler, 2004). Akili (2007, p. 4) has come out with definition of games as "a competitive activity that is creative and enjoyable in its essence, which is bounded by certain rules and requires certain skills". The research of educational games has grown rapidly from year to year in various disciplines of knowledge such as a training method for nursing staff (Brothers, 2007), learning English vocabulary (Nguyen & Khuat, 2003), learning Chinese language (Lee, Cheon & Key, 2008), educational games customization tools (Zarina, 2008), historical aspects of educational games design (Nor Azan & Wong, 2009), the design of game-based learning for children (Nor Azli, Nor Azan & Shamsul Bahri, 2008) and learning Arabic vocabulary through online games (Muhammad Sabri & Nor Aziah, 2009).

These various attempts have inspired this study to explore the potential of implementing digital games in Arabic language teaching and learning. Based on principal researcher's personal experience of 10 years as an Arabic language teacher, there is still a lack of computer-assisted technology use in the Arabic language classrooms. This is also indicated by Mohd Feham & Isarji (2000), Ashinida, et al. (2004), Mohd Feham (2006) and Zawawi (2008). Mohd Feham (2006) further indicated that there had been fewer inventions and innovations in the field in Arabic language learning and several reasons

have limited the number of educational software and courseware in Arabic language. Majority of Arabic language teachers were found incompetent in using computer and courseware in teaching process due to poor computer literacy especially among the veteran generations (Zawawi, 2008) and lack of computer training (Ashinida et al., 2004). Furthermore, there is the difficulty to find Arabic courseware (Mohd Feham & Isarji, 2000; Mohd Feham, 2006; Zawawi, 2008). Thus, the technological production of machinery for Arabic language teaching and learning is very important as it is currently dominated by the American-English language, whether it is software or hardware (Ditter, 2006).

To reiterate, the purpose of this paper is: (1) to investigate the participants' level of experience in playing online games and learning via online games, (2) to explore the participants' perception and belief regarding online game as a tool for learning, and (3) to generate early design principles for the design and development of an online Arabic vocabulary learning games prototype.

## **Methods**

The study was a descriptive study designed to elicit qualitative responses from the participants. The participants involved in this study were selected from a pool of elementary Arabic language learners at the Centre for Foundation Studies, IIUM, who are 18 and 19 years of age. The whole population of 133 learners who were learning Arabic course in semester 3 for the 2008/2009 academic year have been asked to answer a survey for this study. However, due to unavoidable factors such as absenteeism and late attendance to the classrooms, only 115 learners responded. This response rate is still acceptable as the recommended sample size is 90, 99 and 111 based on the confidence level of 90%, 95% and 99%, (Krejci & Morgan, 1970) and as calculated in an online sample size calculator at the URL of: <http://www.raosoft.com/samplesize.html>

The participants were asked to answer a survey that consisted of five open-ended questions that were aligned to the purpose of the study. The questions are as follows:

- Q1- Do you play computer games/video games at home/mahallah/cyber café?
- Q2- Do you agree that playing integrated computer games/video games with educational content can enhance your attitude and motivation towards learning Arabic language?
- Q3- Do you have any experience in learning environment using online educational computer games?
- Q4- Do you believe that playing educational computer games/video games can improve your achievement in Arabic examination?
- Q5- What are your comments and suggestions to produce an interesting online game for learning Arabic vocabulary?

The answers required a choice of 'yes' or 'no' response with open-ended spaces provided for participants to give their reasons for the responses. Question 5 on the other hand, was also an open-ended nature in order to gather their comments and suggestions.

## Findings

The findings of the study are reported in this section. The demographic profile of the respondents is presented before delving into the respondents' perception of online games. Students' demography

As shown in the Table 1 below, 115 students responded to this survey. The sample consisted of 108 (93.9%) first year students and 7 (6.1%) second year students. It comprised an almost balanced number of male and female students with 51 (44.3%) and 58 (50.4%) females. A total of 6 (5.2%) of them did not respond.

Table 1: Gender

Gender	Male	Female	Missing	Total
<u>n</u>	51	58	6	115
%	44.3	50.4	5.2	100

A majority of the population came from Architecture programme with a number of 97 (84.3%) students, while the balance came from other various programmes such as Medicine (1.7%), Biological Sciences (6.1%), Physical Sciences (2.6%), Information and Communication Technology (3.5%) and the same number of students (0.9%) for each of Allied Health Sciences and Engineering programmes. Table 2 shows the descending tabulation of population based on programme of study as follows:

Table 2: Programme of study

Prog.	AED	SBIO	ICT	SFIZI	MEDIC	ALLHS	ENGIN	Total
<u>n</u>	97	7	4	3	2	1	1	115
%	84.3	6.1	3.5	2.6	1.7	0.9	0.9	100

## Responses from the survey

The responses and answers from the participants according to the main questions are as follows. The first question investigated whether the respondents played computer games/video games at home, hostel or cyber café.

The finding showed majority of the teenage learners in CFSSIUM were interested in playing computer games/video games. In this survey, a number of 90 respondents (78.3%) played games, while the rest (21.7%) did not like to play computer or video games at all as described in Table 3.

Table 3: Responses for question 1

<b>Gender</b>	<b>Yes</b>	<b>No</b>	<b>Missing</b>	<b>Total</b>
<u>n</u>	90	25	0	115
%	78.3	21.7	0	100

Among the reasons given from open-ended comments by those who liked to play games were; for fun and as a de-stressor (“to release tension”), to fill up spare time, playing it for enjoyment and entertainment, as a hobby, being influenced by friends and a habit of addiction to play the games. On the other hand, reasons by those who did not like to play games were: not interested to play, the games/play activity was useless and wasting time and the problem of technicality pertaining to the low speed of internet connection in the campus especially the Wi-Fi connection. The high percentage of respondents who were interested towards gaming is a prospect to be exploited and will substantiate the initiative to utilize games for educational purposes in Arabic language learning.

The second question tapped the students’ views on the capability of integrated computer or video games with educational content to enhance attitude and motivation towards learning Arabic language.

A majority of the respondents comprised of 91 (79.1%) learners responded positively to the assumption that playing integrated computer or video games with educational content can enhance their attitude and motivation towards learning Arabic language. A total of 24 (20.9%) students disagreed as indicated in Table 4:

Table 4: Responses for question 2

<b>Gender</b>	<b>Yes</b>	<b>No</b>	<b>Missing</b>	<b>Total</b>
<u>n</u>	91	24	0	115
%	79.1	20.9	0	100

The above finding showed that the majority of respondents had a positive perception towards using educational computer games in enhancing their attitude and motivation towards learning Arabic language. The reasons given were related to computer games with criteria of challenge, competition, entertainment and game play activities that comprise the potential of making Arabic learning more interesting and attractive.

The third question looked at the experience of students in using online educational computer games in their learning environment. A majority of respondents had experienced learning Arabic using online educational computer games. A number of 83 (72.2%) students had experienced using online game-based learning application compared to the rest of 32 (27.8%) as indicated in Table 5. They mentioned some of the related names or URL of the websites such as [www.arabiccfcs.blogspot.com](http://www.arabiccfcs.blogspot.com) etc.

Table 5: Responses for question 3

<b>Gender</b>	<b>Yes</b>	<b>No</b>	<b>Missing</b>	<b>Total</b>
<u>n</u>	83	32	0	115
<u>%</u>	72.2	27.8	0	100

The finding also highlighted the lack of existing online educational games used as platforms for students to learn Arabic in a new or trendy method. The researcher also found that the student-mentioned online games were not well designed and had no well structured contents of Arabic learning, but somehow managed to motivate students in their learning. Samples of both positive and negative responses are shown in Table 6:

Table 6: Students' perceptions of educational games towards their attitude, motivation and achievement in examination

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**Reasons for 'Yes' answers:**

- a) Had an experience in last semester.
- a) Had an experience in last semester.
- b) Can help in increasing Arabic vocabulary.
- c) Add more fun in Arabic learning.
- d) Make students more familiarized with the language.
- e) Can release stress through learning new words and grammar.
- f) Teenagers like to learn through audio visual and nice interface.
- g) Ability to create attractive environment to stimulate mind and interest in learning Arabic.
- h) Can play and learn at the same time.
- i) An interactive and fun learning activity.
- j) Make learning more engaging and produce better results.
- k) Make the students study harder in order to win in the game.
- l) Games that have attractive sound and colorful pictures will make learning more attractive.

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**Reasons for 'No' answers:**

- a) Do not believe that computer games can make Arabic learning more interesting.
  - b) The teenager is not a child who likes to play games.
  - c) Not interested.
  - d) Not sure of the outcome of games learning.
  - e) Playing games is not the same as learning process.
  - f) The factors mentioned are not very much related.
  - g) The games are commonly using difficult words in Arabic vocabulary.
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The fourth question asks the respondents regarding their belief on the potential of playing educational computer or video games to improve their achievement in Arabic language

learning. A majority of them have similar pattern of positive perceptions as shown in Table 7.

Table 7: Responses for question 4

<b>Gender</b>	<b>Yes</b>	<b>No</b>	<b>Missing</b>	<b>Total</b>
<u>n</u>	90	25	0	115
<u>%</u>	78.3	21.7	0	100

The descriptive finding indicated similar response from the respondents as compared to response from Question 2. The respondents indicated that playing integrated computer or video games with educational content could enhance their attitude and motivation towards learning Arabic language. The open-ended responses mentioned were also similar to those mentioned in Question 2.

The fifth question solicits comments and suggestions from the respondents as a pre-design and development survey to produce an actual and practical online games prototype for learning Arabic vocabulary. The comments and suggestions leading to the production of an interesting online game prototype for learning Arabic vocabulary are analyzed and grouped accordingly as shown in Table 8:

Table 8: Comments and suggestions

<b>No.</b>	<b>Main theme and sub-theme</b>
1	<p style="text-align: center;"><b>Interface</b></p> Improve user-friendly and interface. Use simple and easy words. Put nice pictures and graphics. Use attractive sound or music. Make it colourful. Make it fun and interesting learning. Have no error in presentation of text, technical and sound. Add more animations and colourful games.
2	<p style="text-align: center;"><b>Support</b></p> Usability of games with e-dictionary. Use dual or tri-language (English-Malay-Arabic) Have a mechanism to be referred to (to understand unknown vocabulary) Use repeated vocabularies to help students in memorization. Need to try the games first.
3	<p style="text-align: center;"><b>Challenge</b></p> Create different level of games. Games need a lot of strategies to be completed. Should be challenging and adventurous.

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Table 8 (continued)

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4	<b>Suitability</b>
	Make it suitable based on ages of users. Make it relevant to teenager's interest and nature. Emphasize more on the motives of learning (objectives) The game should not be childish.
5	<b>Ease of use</b>
	Have free registration and easy login. Use simple instruction and easy to understand.
6	<b>Value-addedness and variety</b>
	Variety of activities in online games implementation. Can refer to other games in the implementation process. Add some facts of Arabic language origins. Can enhance computer skills. Add some facts of Arabic language origins.

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The findings showed that the participants had positive responses towards the potential of online digital games in enhancing the learning Arabic language. In addition to their enthusiasm, the respondents put forward several concerns pertaining to Arabic language learning to be discussed next.

### **Discussions of Findings**

The above results and findings of this survey have shown a promising and positive perception among Arabic language learners towards using an online educational game in enhancing learning and improving their attitude, motivation and achievement in Arabic language learning as perceived before. Although there is a limited resource of games as teaching and learning aids in Arabic language, the respondents have a high expectation towards this multimedia application to be implemented in their classroom. The high frequency of gaming habit among teenage learners in this study and the positive comments given by them contribute towards the possibility of producing interesting online games for learning Arabic. Those who showed less interest in the use of this game-based learning application viewed it as childish and had reservations about the effectiveness of online games as an Arabic language learning tool.

This study has shown high levels of needs and expectations towards the use of online games as a multimedia application in the classroom. The need for support in language learning and the value-addedness of games are among two suggestions put forward by the respondents that must be considered seriously. Students need more than just fun to support their learning; they also see the utilization of online games for language learning as a means to enhance their computer skills and to link to other elements such as the historical aspect of the language. This is an additional challenge for the Arabic language teachers. In order to design and develop an educational game that could enhance the learner's attitude and motivation in learning Arabic, a collaborative effort is warranted. A good network and cooperation between Arabic language instructors and the instructional



designers should be established to ensure that educational games are based on learning objectives, sound learning contents, and specific effective pedagogical strategies for learning Arabic. Moreover, this effort could help the Arabic instructors who are less skilled to upgrade their computer literacy and skills as well.

To support the use of online games among IIUM learners in Arabic language learning, basic elements such as ease of use, challenge and attractive interface must be included. Interestingly, several other design and development principles such as those listed below can be derived from the study:

- a) Provide options or links to other games.
- b) Incorporate other aspects of Arabic language learning such as the history/origin of the language.
- c) Provide support for language learning such as e-dictionary, translator and descriptions of terms in the games application.
- d) Align the games towards the attainment of learning.
- e) Learners tend to view games as capable of skewing their learning intention.
- f) Build value-added components in the games such as enhancement of computer skills.

### **Implications towards Design and Development from Front-End Analysis**

The Arabic language still lacks teaching and learning aids even though we have entered the 21<sup>st</sup> century with the creation of various advanced multimedia applications from Web 1.0 until Web 3.0. However, the potential of employing technology to support learning is incumbent and well explicated in the responses from the respondents in this study. The above findings are used as a part of the front-end analysis for the learning needs of design and development of this prototype (Muhammad Sabri & Nor Aziah, 2009). The learner needs analysis was conducted based on the design and development of product and tool research framework (Richey & Klein, 2007) which is also known as Type 1 of developmental research (Richey, Klein, & Nelson, 2004). The ADDIE's instructional design model is selected as the instructional design (ID) model in this study since it fits the design and development research methods, objectives and approaches (College Station, 2001). The full framework of a front-end analysis as mentioned by Dabbagh (2006) comprising of four major components of performance analysis, environmental analysis, learner analysis and needs assessment is shown in Figure 1:

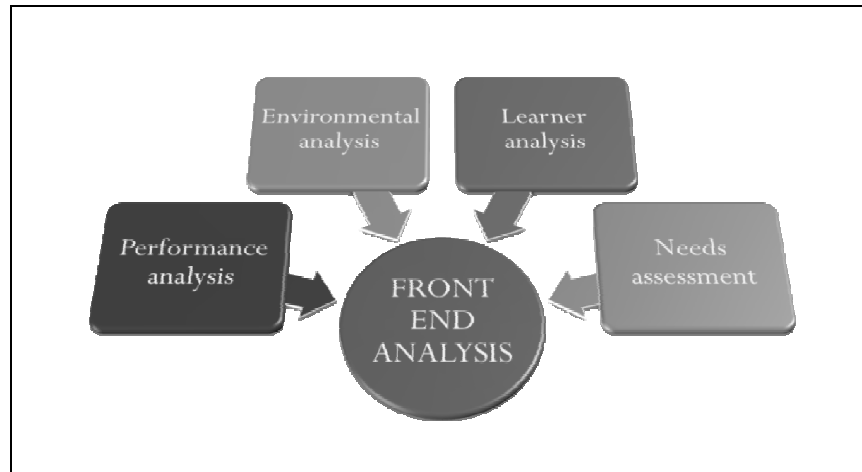


Figure 1: The components of the front end analysis

However, this paper is limited to the discussion on only two components from this framework which was the learner analysis and needs assessment from the learner’s perceptions. Table 9 shows the overall findings from this front-end analysis that was conducted based on suggested research framework by Dabbagh (2006):

Table 9: Summary of findings from front-end analysis

Type of Analysis	Conclusion
<p><b>A- Learner’s Analysis and Needs Assessment</b></p> <ul style="list-style-type: none"> <li>i) Learner’s primary language</li> <li>ii) Nationality</li> <li>iii) Programme of study</li> <li>iv) Learner’s attitude towards learning Arabic</li> <li>v) Reasons in learning Arabic in IIUM (open-ended responses)</li> <li>vi) Early perception on online Arabic vocabulary learning games prototype</li> <li>vii) Educational games can improve learners’ attitude, motivation and achievement</li> <li>viii) Additional comments and suggestions (open-ended responses)</li> </ul>	<ul style="list-style-type: none"> <li>i) The learners are ready and interested in learning Arabic language by using online games.</li> <li>ii) The games to be designed will be based on Arabic language syllabus for science-based learners.</li> <li>iii) The games will facilitate 2<sup>nd</sup> language learning principles</li> <li>iv) The games will be designed to increase learners’ attitude and motivation in learning Arabic.</li> <li>v) Will be using learner-centered approach.</li> <li>vi) Focusing on types of words and interactivity in games prototype.</li> </ul>
<p><b>B- Needs Assessment</b></p> <ul style="list-style-type: none"> <li>i) Pre-design survey with the lecturers</li> <li>ii) Brainstorming with peer lecturers and PhD colleagues</li> <li>iii) Consultation with experts in ID and SME (Arabic language)</li> </ul>	<ul style="list-style-type: none"> <li>i) Gathering the responses and comments from the lecturers’ perceptions towards the design and development of Arabic games prototype.</li> <li>ii) Discussing the issues related to the design and development.</li> <li>iii) Consulting the experts relating to issues in design and development.</li> </ul>

Table 9: (continued)

<b>C- Environmental Analysis</b>	
i) Checking the IT facilities with senior computer programmer.	i) The IT facilities are ready and sufficient to facilitate the implementation of online Arabic vocabulary games among users (lecturers and learners).
ii) Checking the IT facilities with administrative and technical staff.	
iii) Visit to research site.	
<b>D- Performance Analysis</b>	
i) Analyzing the reasons of failure in Arabic subjects among learners in semester 2005/2006, 2006/2007, 2007/2008 and 2008/2009	i) There is a need to design the online Arabic games to increase learner's attitude and motivation towards learning Arabic.
ii) Reasons of failure in Arabic subjects (open-ended responses)	ii) There is a need to design the online Arabic games to help learners enjoy attractive and additional learning aids.
iii) Main problems in learning Arabic (open-ended responses)	

### The Design and Development of an Online Arabic Games Prototype

The actual games prototype in this paper was designed and developed based on the results and findings from previous front-end analysis as mentioned before. There are eight (8) main features as the important aspects of this games prototype, as shown in the followings:

- a) The main banner is IIUM's banner meant to promote a sense of love and pride towards learner's learning organization with related pictures, animations and logos of IIUM and CFSIIUM.
- b) The Islamic greeting phrase is displayed in animation to promote Islamic values among learners.
- c) There are 34 vocabulary games which are categorized into seven main categories of vocabulary learning which varied from the level of alphabets, words, synonyms, antonyms, grammar, phrases, sentences and vocabulary test games.
- d) The English language is used as the main learning instructions to facilitate Arabic language learners at the beginner level.
- e) The level of games difficulties was arranged and designed based on difficulty level of vocabulary learning, which is from easy to difficult, from alphabet games until sentences games.
- f) All the games are limited to certain period of time as a challenge for learners to complete the game play and finish all activities correctly.
- g) The multiple choices of Arabic games are displayed to provide freedom among learners in choosing and playing the games they prefer in order to enhance their confidence in learning Arabic.
- h) The role of teacher in the learning interaction is a facilitator or mentor to guide and assist learners requiring help or when encountering problems while playing the games.
- i) The motivational aspects in the games are the scoring marks for the correct given answers, and also the games immediate feedback that help the players reflect on the correct answers and further reinforce their memorization.

## Samples of Screenshots from this Online Games Prototype

The samples of screenshot for the online games prototype that was designed from previous front-end analysis and described in the previous design and development processes are shown in the following Figure 2 and Figure 3:



Figure 2: Main screenshot of online Arabic vocabulary learning games prototype



Figure 3: One of screenshots of the online Arabic vocabulary learning games prototype

## Conclusion

This paper described a survey on perceptions among Malaysian teenage learners in a higher learning institution towards the utilization of online games in Arabic language learning and how the partial front-end analysis represented by learner's needs and needs assessment was conducted to gather their responses as future users of this online games application. The results and findings from this survey contribute towards structuring a design and development framework of an edutainment games prototype in language learning. Although the findings were intentionally discussed towards the design and development of games prototypes in Arabic language learners in CFSIIUM, it may be applied to other Arabic language learning environments, levels and learners as well as other disciplines of knowledge and subjects taught in educational institutions. After the completion of the design and development of this prototype, the researchers have participated in several research exhibitions in IIUM (2011), UiTM (2010) and Carnival of Islamic Innovation 2010 (Malaysian national level). This prototype won a silver medal

award in the invention category in the research exhibitions conducted in UiTM (October 2010) and IIUM (February 2011).

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