Arabic Language Learning (All) For Kids

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ABSTRACT

Arabic Language has an exceptional position in Islam. It is the language of Quran, thus the need to learn and understand Arabic amongst Muslims is of paramount importance. For countries where their native language is not Arabic, the language is only taught in special schools. Arabic language needs to be introduced to children at early ages such as in the kindergarten. With the advent of computer technology, various kind of multimedia tools have been developed for the purpose of language learning. Since children are attracted to computer applications especially those that involve multimedia, there is a need to develop Arabic language learning applications for them. Even though there are few applications available in the market for that purpose, most of them do not fully utilize the multimedia elements. The prime objective of this study was to propose an Arabic Language Learning (ALL) for kids of ages between 4 to 6 years old that enable them to learn the language. In the process, an interactive field-tested ALL for kids has been developed as an alternative to the traditional learning tools. The results of user evaluation on the ALL indicate that it has good usability in terms of Learn ability, Usefulness, Ease of Use and Outcome/Future Use. The results also indicate that there is a significant difference between novice and expert users for Usefulness and Ease of Use, while no significant difference for learn ability and Outcome/Future Use.

Keywords
Arabic language, foreign language, interactive, multimedia

1.0 INTRODUCTION

With technological advances, multimedia has become a new medium that provides interactivity on new media. It affects the way we learn, work, and play such as websites, multimedia software compact-disk ROMs (CD ROMs), and encyclopedias (Hudetz and Friedewald, 2002). In the 21st century, the use of multimedia software CD ROMs has increased rapidly (Vaughan, 2006). The changes in multimedia technology definitely had resultant effects on all aspects of our life. We use this technology in many domains such as commercial, promotional, education and training applications (Barry and Lang, 2006). It provides highly effective utilization for people that can get the information that they need, when they need it without matter where they are located (Taguchi *et. al.*, 1999). One of the basic types of e-learning is using Interactive Educational Multimedia (IEM) support. It means this supports are used to be an instrument of learning. Tutorials and exercises are done virtually using this support. The kids will undergo learning process, which comprises of audio, visual and interactive features via the supports.

The overall intention of this study is to provide non-Arabic speaking kids with a tool to learn the language in attractive and enjoyable ways. This study may be used by teachers in kindergartens to introduce the children to a foreign language and can be done with minimum supervision.

2.0 NEW TECHNOLOGIES AND LANGUAGE LEARNING

There seemed to be many new media technologies that have the possibility to assist in language learning (Fallahkhair, Masthoff, and Pemberton, 2004). Examples of paper-based language technologies include dictionaries and books, through language laboratories, audio tapes, television programs, Interactive CD ROMs, Internet and mobile technologies (Pemberton, 2007). Some of these technologies have satisfied their promise, while others are considered as limited or complete failures (Salaberry, 2007). The reasons for the failure of a technology to make a mark are diverse. For instance, their pedagogical effectiveness may be doubtful (Salaberry, 2007). In fact, new language teaching technologies have too often tended to be accompanied by a step backwards in pedagogy, with developers showing an inclination to put too much trust in the originality factor (Warschauer and Healey, 1998). This study concerned with "learner acceptance", i.e. the readiness of the learner to use the technology as part of their learning strategy. While "captive learners", such as children in school,

may have to accept their teacher's choice of technologies. This study reports on the approaches that a number of independent learners have adopted towards their language learning and their attitudes towards a range of language technologies. The aim is to understand their motivations, the methods that they found useful and the problems they met. This should help to recognize opportunities for matching the abilities of using interactive software to the real needs of language learners (Fallahkhair, Masthoff, and Pemberton, 2004).

Learning with multimedia is promising and growing. It has changed teacher's perception as well as learner's about learning. A study by Neo (2005) indicates that multimedia mediated based instruction motivates learners to work in a couple and create their own solutions to problems. Multimedia motivates learners to continue learning and obtain knowledge faster and above all sustain the knowledge gained (Faryadi, 2006).

3.0 RELATED RESEARCH ON ONLINE LEARNING

3.1 Research on language learning

Based on a study by Qais *et.al* (2007), Bahasa Arab Interaktif Kurikulum (BAIK) and Traditional method of teaching the Arabic as foreign language learning for children in the classroom generally had positive effects on students' comprehension skills. However, it is interesting to note that learners taught via BAIK significantly outperformed the students taught via traditional methodology. *Bahasa Arab Interaktif Kurikulum* (BAIK) and Traditional method of teaching the Arabic as a foreign language learning in the classroom generally had positive effects on students' comprehension skills. However, it is interesting to note that learners taught via BAIK significantly outperformed the students taught via traditional methodology.

T-*test results revealed that there is a significant increase in students' comprehension skills compared to that of the traditional method of learning the Arabic language (Qais, 2007). This indicates that learners in BAIK increased their comprehension skills significantly compared to the traditional teaching method. The Arabic vocabulary delivery method helped them to achieve significant comprehension skills. The Arabic vocabularies were supported by sounds, pictures, repetition and Malay translation for an effective learning. This is in conformity with Mayer's Multimedia learning principles stating that students learn better with pictures, animation and sound rather than words alone (Mayer, 2003).*

A study conducted by Marcoul (2005) reports a French language learning designed for the students at City university in London. The platform of the study used a WebCT. It was run together with face to face courses for lower intermediate level students. Moreover, the main objective of the online course was to investigate whether independence could be achieved by collaborative learning and self-assessment. The objective was to apprehend the students' assessment on the level of competence and their linguistic progress online. The feedbacks were collected and analyzed to examine whether the online course could smoothen the progress of their learning process and their learning autonomy. The result proved that the students' learning style could explain their degree at autonomy in learning. That is, the students who showed more independent skills in their studies were likely to be more autonomous than the students who preferred face to face learning.

3.2 Interactive Multimedia (IMM) Research

The probable of IMM for education has been considered widely in the 90's and continued to be investigated. For example, Carlson and Falk (1991) found that multimedia to be an effective approach for providing pre-service teachers with pre-observational experiences. In a similar area, Clark (1995) studied the utility of understanding teaching (an IMM program) for pre-service teachers. His study showed that the program was extra effective for using multimedia system than the standard book.

More studies discussed the effect of multimedia and their potential for learning and teaching have concentrated on students' knowledge gains as well as on issues concerning the effective design of interactive multimedia environments (Ioannou *et.al*, 2007). Some of these studies focused on specific multimedia programs that were developed to achieve specific goals. Findings from a study by Frear and Hirschbuhl (1995) indicated that IMM had a significant effect on both students' achievement and their problem solving skills. Similarly, Wydra (2007) found that the experimental group had significant improvement gain in self-learning ability apart from of other variables. Experimental treatment included use of the interactive multimedia module. His conclusion was the program is instructionally effective and feasible for use. The interactive multimedia program is an effective, self-sufficient source for individualized education.

Based on study by (Almekhlafi, 2006), the relative usefulness of two instructional media (an IMM CD-ROM, and a videotape) for helping users learn ESL (English for Second Language) teaching strategies. Results showed that a significant differentiation among the two groups in understanding gain of ESL strategies. Users were able to recognize more strategies than Videotape users.

A study by Nagata (2002) on a Japanese language learning tutor program showed that students' accomplishment enhanced tremendously and their approach indicated an interested student response. All aforementioned studies shared one common finding which is the effectiveness of IMM for learning and teaching and its potential for enhancing teaching methods and learners' knowledge gain if designed and used perfectly. Almekhlafi (2006) concluded that IMM may always be effective. Its effectiveness depends on many factors such as the nature of IMM, the students' who used it, the way of instruction, and the time span of using it.

4.0 ARABIC LANGUAGE LEARNING (ALL) FOR KIDS

ALL consists of five main sections which include i) letters learning, ii) letters writing, iii) letters order, iv) structure words and v) structure sentences. Fig 1 (a), (b), (c), (d) and (e) show snapshots of the main sections. The methodology for this study was adapted from the System Development Research Methodology (SDRM) (Nunamaker and Chen, 1990). The adapted methodology consists of five phases; i) Conceptualization, ii) Information gathering, iii) Prototype design, iv) Prototype development and v) Evaluation.
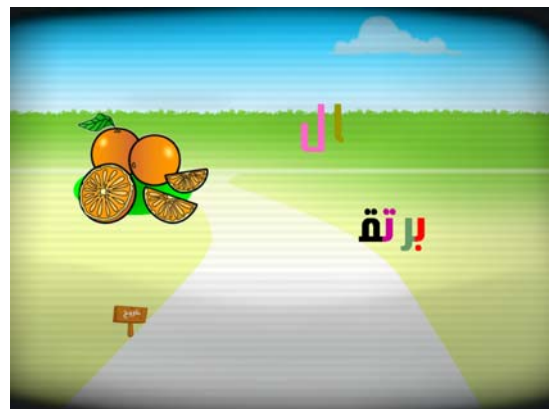

Fig 1 (a): Snapshots of the letters learning
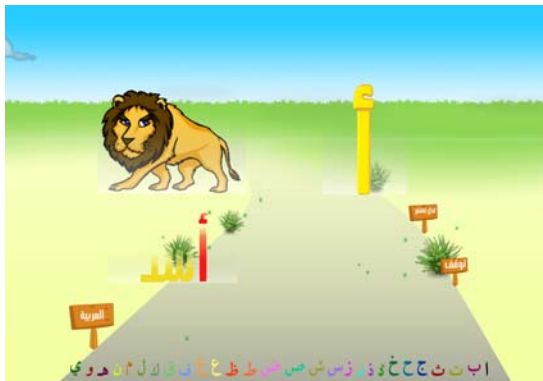

Fig 1 (b): Snapshots of the letters writing

Fig 1 (c): Snapshots of the letters order

Fig 1 (d): Snapshots of the structure words

Fig 1 (e): Snapshots of the structure sentences

5.0 USER EVALUATION OF ALL

User evaluation was conducted to determine users' perception on the usability aspect of the ALL prototype. The instrument was adapted from Davis (1989) and Lewis (1995). The instrument covers three dimensions: *Learnability, Usefulness, Ease of Use* and *Outcome/Future Use.*

5.1 Instrument For User Evaluation
For user evaluation, a set of questionnaire which comprises of General Information and User Evaluation sections was used. The General

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Information section functions as a mechanism to collect users' demographic data and users' experience and knowledge with the computer. The user evaluation section is intended to collect data on users' opinion regarding the ALL prototype usability aspects. A 5-point Likert scale anchored by "Strongly Disagree" (1) and Strongly Agree (5) was used.

5.2 Method For User Evaluation

The ALL user evaluation was conducted on thirty respondents and they were selected using convenient sampling technique. Respondents consist of parents and teachers. Each respondent was given brief explanation regarding the usage and the user interface of the ALL prototype. Each user was allocated ample time to try and explore the content of the prototype. Once they were done, users were given a questionnaire for user evaluation.

6.0 RESULTS

Descriptive statistics, reliability analysis and t-test were used in this study. SPSS version 13 for Windows was used to analyze the data. Results from the descriptive, reliability, and t-test analyses will be discussed in the following section.

As far as the gender is concerned, 18 (60.0%) of the respondents were males and 12 (40.0%) were females. Based on the race, 18 (60%) were Asian, 6 (20%) were Arabs, and 6 (20%) were from others. For their native language, 12 (40%) of them is Malay, 6 (20%) is Arabic, 10 (3%) Chinese, and the rest 9 (30%) is various languages. The respondents' experience and knowledge with computer were assessed in order to be grouped as novice or expert. 16 (53.3%) were categorized as novices and 14 (46.7%) as experts. The percentages tell that the respondents' computer experience would not change their preference and expectation. A minimum of eight users are required for reliable measures for each variance in the data. Thus, there is sufficient number of participants for each group (Nielsen, 1993).

Both validity and reliability were addressed for the usability evaluation questionnaire. One of the most commonly reliability coefficient used is Cronbach Alpha (Coakes, 2005). The reliability of a questionnaire is the ability of the questionnaire to give the same results when filled out by like-minded people in similar circumstances. It is usually expressed on a numerical scale from zero (very unreliable) to one (extremely reliable) (Kirakowski, 2007).

Thus, Cronbach alpha values were calculated using SPSS 13.0 to determine the data inter-item reliability which assesses the degree of internal consistency between multiple measurements of a dimension. Table 1 presents the Cronbach alpha value for each measure. The *Learnability, Usefulness, Ease of Use* and *Outcome/Future Use* measures have Cronbach alpha of greater than 0.7, thus, these measures satisfy the internal reliability criterion.

Table 1: Cronbach Alpha Values for All Dimensions.

Measure	Number of items included	Cronbach Alpha
Learnability	8	0.738
Usefulness	6	0.723
Ease of use	6	0.736
Outcome/ future use	4	0.775

Usability evaluation from users' perspective is important in obtaining users' opinion towards the usability of the ALL. The descriptive statistics for all the measures are presented in Table 2. A one-way Chi-Square test of homogeneity was conducted on the responses for all the items. A significant p-value indicates that the responses are not equally distributed across the items. As shown in Table 2, the results are positive with p-values significant at 0.01 for *Learnability*, *Usefulness*, *Ease of Use* and *Outcome / Future Use*.

Table 2: Descriptive Statistics for All Measures.

Measure	N	Mean	Std. Deviation	P (Chi-Square)
Learnability	30	4.06375	0.837625	.000[*]
Perceived Usefulness	30	3.9583333	0.8948333	.083[*]
Perceived Ease of use	30	4.1566667	0.83	.006[*]
Outcome / future use	30	3.915	0.8475	.057[*]

[*]: Significant at the 0.01 level.

Table 3 shows the descriptive statistics for all the items. Twelve items with means more than 4 are bolded which indicate that most of the participants agreed on these items and just neutral on the rest of the items that are related to the ALL. Overall, the results indicate that the participants agreed that ALL has good usability.

Table 3: Descriptive Statistics for All Items.

Item		Mean	Std. Deviation
(ALL) LEARNABILITY			
1	It was easy to learn to use ALL.	3.97	0.928
2	The information provided by ALL was easy to understand.	**4.27**	0.907
3	The information provided in ALL helped me in teaching process.	3.93	0.868
4	It provides clarity of wording.	**4.27**	0.785
5	Data grouping is reasonable	3.80	0.847

#	Item	Mean	Std
	for easy teaching.		
6	The ordering of information is logical.	3.80	0.961
7	The command names are meaningful.	**4.20**	0.714
8	It provides no penalty teaching.	**4.27**	0.691
(ALL) PERCEIVED USEFULNESS			
9	Using (ALL) would enable me to accomplish tasks more quickly	**4.01**	0.860
10	Using (ALL) would improve my job performance	3.87	0.923
11	Using (ALL) in my job would increase my productivity	3.93	0.973
12	Using (ALL) would enhance my effectiveness on the job	3.97	0.910
13	Using (ALL) would make it easier to do my tasks	**4.20**	0.805
14	I would find (ALL) useful in my job	3.77	0.898
(ALL) PERCEIVED EASE OF USE			
15	Learning to operate (ALL) would be easy for me	**4.50**	0.682
16	I would find it easy to get (ALL) to do what I want it to do	3.97	0.850
17	My interaction with (ALL) would be clear and understandable	**4.10**	0.803
18	I would find (ALL) to be flexible to interact with	**4.13**	0.973
19	It would be easy for me to become skillful at using (ALL)	3.97	0.765
20	I would find (ALL) easy to use	**4.27**	0.907
(ALL) OUTCOME/FUTURE USE			
21	I was able to complete my teaching quickly using ALL	**4.23**	0.728
22	I could effectively complete my teaching using ALL	3.70	0.915
23	I was able to efficiently complete the teaching using ALL	3.53	0.986
24	From my current experience with using ALL, think I would use it regularly	**4.20**	0.761

6.1 Comparison between Novice and Expert Groups

Independent samples t-test was used to compare the mean values between novice and expert groups for all the measures in order to signify the differences statistically. Table 4 shows the means, standard deviations and paired t-test for all the measures. Based on the paired t-test, as the significance values are less than 0.05 (Coakes, 2005), there was significant difference between novice and expert groups for usefulness and ease of use. However, there was no significant difference between novice and expert groups for learnability and outcome/ future use.

Table 4: Mean, Standard Deviation and Paired t-test for all measures

Measures	Group	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig
Learnability	Novice	16	4.0562	0.84475	0.21125	0.4859	28	0.48
	Expert	14	4.07125	0.826125	0.220625	0.501	26.95	
Usefulness	Novice	16	4.05333	0.90216	0.2255	2.039	28	.001
	Expert	14	3.84667	1.01333	0.2706667	1.992	25.9165	
Ease of use	Novice	16	4.13833	0,80667	0.2016667	3.484	28	.002
	Expert	14	4.178333	0.88	0.235	3.645	26.4875	
Outcome/ Future Use	Novice	16	3.7675	0.924	0.23125	4.121	28	.609
	Expert	14	4.0925	0.794	0.21225	4.202	27.5095	

7.0 CONCLUSION

Arabic Language Learning for kids was developed to help children to learn Arabic language. The prototype was evaluated and the results indicate that it was designed with good usability. The *Learnability, Usefulness, Ease of Use* and *Outcome/Future Use* measures have Cronbach alpha of greater than 0.7, thus, they satisfy the internal reliability criterion. Results of user evaluation on the ALL indicate that there is a significant difference between novice and expert users for *Usefulness* and *Ease of Use*, while no significant difference for *learnability* and *Outcome/Future Use*. Results from this study indicate that the multimedia learning environment such as ALL motivated kids to continue learning the Arabic Language at home. The findings of this study concur with other numerous studies in the field of multimedia language learning

Mayer (2003), Clark (1995) and Qais *et.al.,* (2007). It is hoped that the findings of this study will encourage kindergartens to incorporate ALL into their curriculum for teaching and learning in order to improve and enhance the children understanding and knowledge regarding Arabic language.

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