The Effectiveness of the Use of Animation in Arabic Language Learning

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Abstract

Implementation of animation as an Arabic language teaching aid is an innovation in creating an atmosphere that can influence student achievement. This study aimed to identify the effectiveness of the use of animation in Arabic language teaching and learning among diploma students at Universiti Sultan Zainal Abidin (UniSZA), Terengganu, Malaysia. A total of 66 diploma students were randomly selected and divided into experimental group (n = 33) and control group (n = 33). The results obtained from the data collected from pre-and post-test for each group were analyzed using t-test in SPSS version 17.0. The results showed a significant difference of ($t = 8789$, $df = 64$, $p < 0.05$) between the achievement of the experimental group and the control group in the post test. The difference in mean score of the experimental group and the control group was 33.03. This shows that there is significant improvement in Arabic language according to the groups. The difference prove that the use of animation in learning sessions contribute to the achievement of students in the Arabic language. This study advocate the idea that animation applications can be integrated as part of language teaching aid to positively improve student achievement, classroom learning environment and student motivation.

Keywords: Implementation; innovation; animations; teaching aids; learning Arabic language

1. Introduction

The digital animation has been in spotlight in today's societies especially children and teenagers. Animation is one of the multimedia elements capable of expressing a human fantasy to reality. Norazamudin (2005) stated that the word animation is derived from the Latin meaning 'turned on' or 'bring to life' and refers to a process of making an object which is essentially static that looks alive. Contrary to the common belief, animation is not solely focused on entertainment, travel and business alone, but also plays a great role in education. In the world of education, the animation plays an important role as the interest grabber of the students to learn and can help teachers to motivate students towards a more enjoyable learning. This statement is also supported by (Aminordin, 2007; Abd Rashid et al., 2012), who stated that animation is an effective way to attract attention and the potential to make learning more interesting and fun. Apart from being able to capture the student's attention, animation can also convey messages faster than the use of other media. According to Jamalludin and Zaidatun (2003), animation can convey complex concepts in a visual and dynamic. This simplifies the description of the concept or demonstration of a skill that can be easily understood and remembered by the students. In addition, digital animations are capable of motivating and stimulate students' thinking in order to reduce cognitive load in receiving lesson. This is parallel with studies done by Baharuddin et al. (2003) stating that interactive multimedia teaching materials can increase the rate of acceptance of a material that is taught by 30% more than students using traditional learning methods. This allows the students to utilize more senses to collect information, thus indirectly accelerate and improve the process of understanding (Ko & Rossen, 2008) and maintain that information in a longer period of time in memory (Paivio, 1986).

This study was conducted to determine the role of digital animation in Arabic language learning. It also focuses on the achievement of students in the experimental group (using animation as learning aids) and control group (conventional learning methods). The aim is to compare their performance after attending sessions on teaching methods, respectively. Hopefully, this research can provide the stimulus and encouragement for teachers to master technology to be applied in the classroom so that teaching can be varied from time to time to suit the age, teaching objectives and so forth. The objectives of the study are as follows:

1) Investigate the performance of the experimental group (using animation as learning aids) and control group (conventional learning methods) after Arabic language learning sessions.

2) Identify significant difference in the Arabic language achievements in the post-test between the experimental and control groups.

2. Literature Review

2.1 Animation in Learning

Preliminary studies on the effectiveness of using animations as learning materials was carried out by King, 1975 (Saw, 1999). The results showed that post-test scores for the three patterns of learning which were animated performances, static diagrams and text do not show a significant difference. Therefore he concluded that animation is not appropriate to be applied in comprehension and conceptual learning; however it is more suited in tasks involving timing and movement. Large (1996) however believed that animation is effective in learning a series of steps thus indicating that the contents of teaching material might affect the efficiency of animation.

Spangenberg's (1973) study discovered that the performance of students who watched the video tapes (animation) in a learning session were better than the performance of students who watched a series of static images. It was consistent with the findings of studies done by (Mayer & Anderson, 1991; Mayer & Sims, 1994). Baek & Layne (1988) showed that the post-test mean scores for Mathematics studies which contain animated graphics are higher than studies using static graphics or text only. Baek & Layne also discovered that students in the animated graphic group use a shorter time to learn. This finding was supported by the studies done by Park & Gittelman (1992) who found that the animated graphic presentation was more effective than static graphics performance for computer-based teaching skills. According to Park & Gittelman, animation can help illustrate the complex structure, functions and procedures of the relationship between the object and the motion. This study was supported by ChanLin (2001) who found that the use of animation was more effective than static learning.

Mayer and Moreno's (2002) study regarding the integration of animation in multimedia teaching aid found that there is a very consistent effect on the use of animation in multimedia learning process compared to conventional techniques which is verbal information relay (lecture). This study confirms the use of multimedia presentations, such as animations in the learning process to make the process more meaningful and effective.

2.2 Animation in Language Learning

There are few previous studies related to language learning through animation software. Boswood (1997) in his study found that the use of animation in the language learning process which he described as edutainment (education by entertainment) bring pleasure and create a more conducive learning environment. The study done by Kayaoglu et al. (2011) found that there is a significant improvement in post-test results of students who utilize animation in their learning compared to the pre-test. This finding is parallel with the results of a study conducted by Lin & Tseng (2012) on 88 students who learn difficult English words in junior high school in northern Taiwan. The results of their study showed that there were significant differences between the three groups, where the achievement of groups of students who learn English words using video animation and text over the group using text and images, and text only. A study conducted by Abdul Rasid et al. (2012) to identify the perceptions of 56 Malay teachers in primary schools in Sepang district regarding the integration of animation in the Malay language teaching has proven to be effective in creating a fun studying atmosphere and affect students' emotions despite the lack of awareness of its benefits among teachers. Thus, these studies support the idea to integrate animation applications in language learning classes. The method however is not to be mistaken as an alternative but as an additional means or aids to contribute positively to the achievement of the students and also to the classroom learning environment and student motivation.

Implementation of animation is not just limited to English language learning but also to be used in learning Arabic language. Studies on the use of web-based animation technologies in learning the Arabic language has been carried out by Janudin (2009). The study found that some of the advantages of the application can be identified, including the flexibility of users accessing the application, attractions engaging learning through the presentation of multimedia elements, particularly the use of animation technology, while it is easier for consumers to explore all the links in the application. Hence it can be said that this application is an innovation in the teaching and learning of Arabic language. The study conducted by Norhayati (2011) on 20 diploma students at Universiti Sultan Zainal Abidin (UniSZA) Terengganu, discovered that students with high perceptions and respond positively to the use of animation in learning Arabic with an average value of 4.34. Therefore, animations are appropriate in Arabic language teaching and learning aid and are capable in encouraging students to master it.

3. Research Methodology

3.1 Research Design

This study is conducted based on field study adopting quantitative approach. This study was conducted at Universiti Sultan Zainal Abidin (UniSZA) Gong Badak Campus involving 66 first year diploma students from the Faculty of Business Management & Accounting and Faculty of Design and Engineering Technology. The subjects were students who do not have basic in Arabic language, identified by tests performed before the study was conducted. The sample was divided into two groups: a control group (traditional learning) and the experimental group (using animated learning aids). The students were made to attend an eight (8) week Arabic language classes. Figure 1 below illustrates the procedure of the study and Figure 2 shows the screenshots of the courseware that being used in the research.
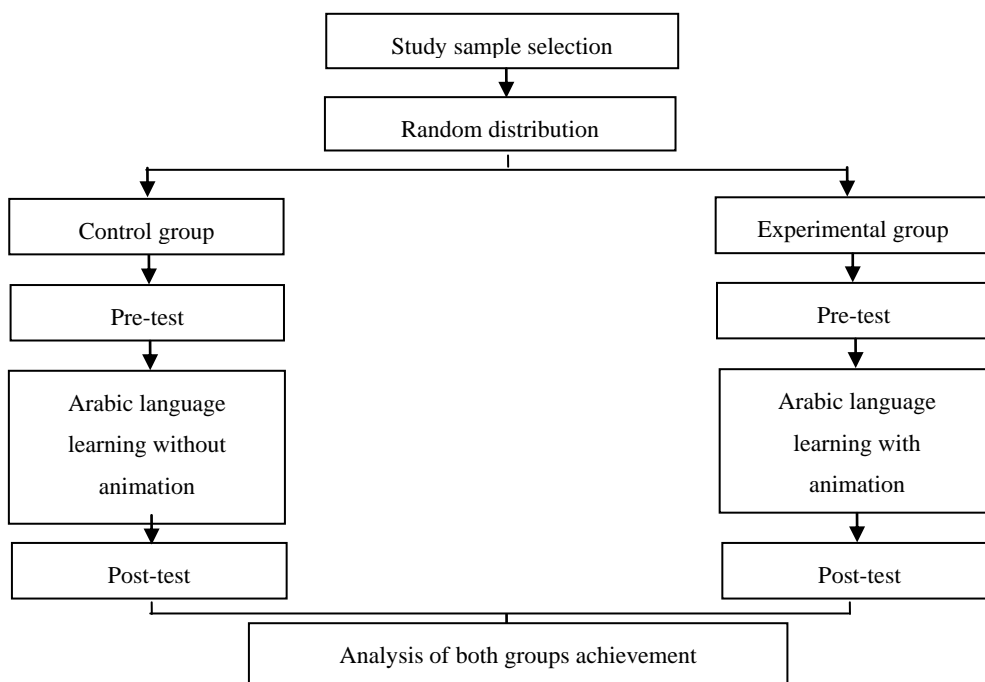

Figure 1. Framework of research design

Figure 2. Screenshots of the courseware

3.2 Research Instruments

This study adopted pre and post-tests to obtain the data regarding the effectiveness of this method. Both groups underwent preliminary test to assess their level of Arabic language understanding. Testing is conducted prior to Arabic language learning sessions. After carrying out a pre-test, the sample attended Arabic language classes for eight (8) weeks. Post-test were then conducted after the completion of the learning session to identify the level of achievement of the sample after the process of learning.

3.3 Data Analysis

The results of the tests conducted at the end of the study were analyzed using SPSS version 17.0. T-tests were conducted to identify the presence of significant difference in the student achievement of the Arabic language of both control and experimental groups. Significant improvement in performance between the control and

experimental groups were also tested.

4. Results and Discussions

Table 1 illustrates the student achievement in the pre and post-test of control group students. Results showed that pre-test mean score was 37.82 per cent and post-test mean score was 40.79 percent.

Table 1. Statistics of achievement in the pre and post-test of control group

Control Group test	N	Mean	Std. Deviation	t	df	Sig.
Pre test	33	37.82	12.333	-1.246	32	.222
Post test	33	40.79	14.439			

The results obtained shown that the post-test mean scores of Arabic language exceed the mean pre-test scores. The increment of the post-test mean score was 2.97 per cent. Paired *t*-test results were not significant (t = -1.246, df = 32, p> 0.05). These results indicated that there is no significant difference between pre and post-test performance in Arabic language for the control group.

Table 2. Statistics of achievement in the pre and post-test of experimental group

Experimental group test	N	Mean	Std. Deviation	t	df	Sig.
Pre test	33	33.97	16.433	-12.111	32	.000
Post test	33	73.82	16.050			

Table 2 shows the results of pre-test and post-tests for the experimental group. Mean scores for pre-test was 33.97 and 73.82 per cent for the post-test. It shows the post-test mean scores for the experimental group exceeded pre-test. A 39.85 per cent increase in post-test mean score in Arabic language test was recorded. Meanwhile paired *t*-test results were significant in which significant value is less than the alpha (0.05) with the t = -12.111, df = 32. These results indicate that there were significant differences between pre-and post-test performance of the experimental group in Arabic language performance.

The data analysis proven that there was an increase in the pre and post-test of both control and experimental group achievements. However, the increase of the experimental group was higher than that of control group. Thus, the implementation of animation in language learning indeed enhances students' performance.

This study also aimed to identify significant differences in performance in Arabic language between the experimental group and the control group. Therefore, *t*-tests were conducted and the findings are as shown in Table 3.

Table 3. The *t*-test of performance in the experimental group and the control group in the post test

Experimental & Control group	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Test results	8.789	64	.000	33.030	3.758	25.523	40.538

After conducting a *t*-test analysis of independent samples, the results in Table 3 indicate that there is a significant difference, t = 8.789, df = 64, p <0.05 between the achievement of the experimental group and the control group in the post test. This shows that the mean score of the experimental group (73.82) outperformed the control group score (40.79) significantly. The difference in mean score of the experimental group and the control group was 33.03. Thus it is proven that there is a significant difference in performance in Arabic language in both groups.

The results showed that there was a definite increase in achievement in Arabic language of UniSZA students after adopting animation in the learning session. This proves that animation can help students without Arabic language basic to improve their performance. This study is consistent with several other studies that have been done (Norhayati 2011; Kayaoglu et al., 2011). Therefore, this study supports the idea of integrating multimedia applications such as animation in language learning classes as an alternative that contributes positively to the learning environment in the classroom and motivate students.

Several factors are found to have a role in the increase in post-test scores for the experimental group in this study. The key factors that may lead to an increase achievement is the presentation of content in the form of animation together with multimedia elements such as pictures, video, voice and songs appropriate to the content of the

lesson had managed to draw the students' attention. These factors are consistent with Bright and Prokosch (1995) and Kumar (1995) who stated that the use of multimedia software is capable of maintaining students' attention during lesson and also motivate them to continue studying the learning materials. In addition, the animation can also convey messages faster than the use of other media. In addition, animations help accelerate students' understanding and retain information for a longer time (Jamalludin & Zaidatun, 2003). This is explained by the theory of "Dual Coding" (Paivio, 1986). According to this theory, the human cognitive system consists of two subsystems: the verbal system and image system (visual). Words and sentences usually only processed in the verbal system (except for material that is concrete), while the image is processed through the image system and the verbal system. Hence combining texts in pictures enhance memorization because of dual coding in memory (compared to single coding). This finding is consistent with Miller's concept in cognitive theory in which short-term human memory can remember 5 to 9 items at one time. This is to ensure that the concepts or content delivered can be encoded by the human brain and later stored in long-term memory space. This is because the ability of a person's mind is limited in analyzing the information at one time.

The other factor is interactive animation software allows students to actively engage and make the learning process more enjoyable. According to Rusmini (2003), active learning has been found to give rise to curiosity and healthy competitive atmosphere among the students and make the learning more meaningful. The interested users are brought to the content of the presentation delivered leading to a more effective information relay. This finding is parallel to a Behavorial learning theory which stated that learning is a mechanical process that results from the relationship between stimulus and response. According to Skinner (in Jamalludin & Zaidatun, 2003), a stimulus given to the person will influence the reaction to the stimulus given. When this is done, learning will take place. This can be seen in the process of learning Arabic language where students' interest in the subject is maintained by good teaching method thus capturing their attention.

On the other hand, the factor that caused a less satisfactory increase in the control group post-test might be accounted to the teachers' approach and the learning environment. The teacher-centered approach adopted by the teachers without utilizing any teaching aid affect the students' performance. This conventional method is obsolete in this era of globalization. It negatively impacted Arabic language learning process as it creates a boring learning atmosphere thus impeding the students from remaining focused.

5. Conclusion

From this study it can be concluded that the use of animation as a teaching aid in learning Arabic language helps improve student achievement. Therefore, the use of multimedia elements, animation in particular in teaching and learning should be adopted as teaching method by the lecturers. This study is hoped to aspire educators on the effectiveness of the use of animation in teaching process and eventually improve student achievement. This study works as a guide and reference in the development of teaching aids for enhancing teaching software or materials to make it more compatible with the syllabus as well as an added value and enhance expertise in the development of the Arabic language as a field that can compete in the era of information and communication technology.

Acknowledgements

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