THE EFFECTIVENESS OF MULTIMEDIA COURSEWARE ON STUDENTS' COMPREHENSION OF TAJWEED AND RECITATION OF AL-QURAN

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Abstract

The purpose of this quasi experimental study is to investigate the effectiveness of multimedia tajweed learning courseware on students' comprehension and their recitation of Quranic verses. A multimedia courseware with three modes of presentation (multimedia with video mode, multimedia with video and subtitle mode, and multimedia with voice recognition mode) was designed as the treatment. A total of 158 students from six schools in Malaysia were involved in this study. A pre-test was administered to determine their level of comprehension of tajweed and their recitations of several Quranic verses involving the tajweed to be learned. After 140 minutes of treatment, a post-test was administrated to measure the effects of the treatment. The post-test results showed an improvement in both the dependent variables – the students' comprehension of the tajweed as well as their recitations of the Quranic verses involving the learned tajweed. The three modes of multimedia presentation ultimately showed positive impact on the comprehension of tajweed and recitation of the Quran whereby voice recognition system was identified as the most effective mode which allowed the students to record, playback and save the audio files.

Keywords: Tajweed comprehension, al-Quran recitation, multimedia presentation modes

1.0 INTRODUCTION

In today's era of computer technology, multimedia is widely known as one of the modern tools that are very useful in making our daily routines easier in many ways. According to Mayer (2001), visual and verbal are the two multimedia elements that could bring the interest of the learners and activate their working memory and the long term memory. Therefore, multimedia has been widely used as a learning material to support teaching and learning.

Multimedia is also used in teaching and learning of Islamic education. In the context of Malaysian education, there are numerous supporting learning materials such as multimedia courseware that have been distributed to the schools nationwide. However, according to the teachers and students, the courseware is only based on documentary sources, not interactive and not challenging. Several researchers (e.g.: Rosmaria, 2003; Norasikin, Zawawi, Zarina, Siti Fadzillah & Khairuddin, 2005) found that none of the courseware that is used in government schools promotes a better understanding of tajweed and the recitation of Quran.

In Malaysia, the learning of Quran recitation has been taught from the early stage of primary school years (7 years old or Grade 1) until the end of the secondary school (17 years old or Grade 11). However, some students are still having problems in reciting the Quran. In their study, Nasir and Rubiah (1999) found that about 35% students (n=80) are very weak while 38% (n=80) are moderate in understanding the tajweed rules and Quran recitation. There are two biggest problems faced by these students concerning Quran recitation. The first one is the difficulties in understanding the tajweed rules due to the Arabic terms being used (e.g.: the *Idgham* and *Izhar* terms; the names of the rules are quite similar to each other such as *Mad Silah Towilah* and *Mad Silah Qosiroh*). Secondly is the difficulty to recite the Quran by following the correct flow of the tajweed rules.

Due to these problems, there is a need to develop a learning courseware that gives a better understanding of tajweed rules and demonstrate the correct way to recite the Quranic verses (also called *kalimah*). Furthermore, the authors have also developed the multimedia with three modes of courseware to investigate the effect of this courseware on Malaysian secondary school students' comprehension of the tajweed rules and their recitations of the Quranic verses.

2.0 THREE MODES OF MULTIMEDIA

2.1 Multimedia with Video (MV)

MV is a presentation that combines multimedia elements such as text, graphics, audio, video and interactivity. In this courseware, the video shows an expert reader or *qari* reciting the *kalimah*. The text or *kalimah* recited by the *qari* was placed outside of the video frame. Figure 1 shows an example of the MV interface.

Fig. 1: The Interface of MV

2.2 Multimedia with Video and Subtitle (MVS)

MVS is also a presentation the combines multimedia elements such as texts, graphics, audio, video and interactivity. This mode is different with the MV mode in that this MVS is using the same language subtitle concept, and when the *qari* recites the *kalimah*, the text color of the recited *kalimah* will be changed. Figure 2 shows the interface of MVS.

Fig. 2: The Interface of MVS

2.3 Multimedia with Voice Recognition (MVR)

MVR is also a multimedia presentation that adapts the same template as MV. However, the MVR brings a different feature whereby the presentation was embedded with small system of voice recognition that allows the user to: (i) record, (ii) playback, and (iii) save the audio file. In other words, after listening to the *qari's* recital from the video, the student is allowed to record his/her recitation of the *kalimah*, save it and play it back. Figure 3 shows the interface of MVR.

Fig. 3: The Interface of MVR

3.0 RESEARCH QUESTION

1. Which is the best multimedia mode in increasing the students' comprehension of tajweed rules?
2. Which is the best multimedia mode in increasing the students' Quran recitation?

4.0 METHODOLOGY

A total of 158 Form 2 or Grade 8 (14 years old) students from three secondary schools in a northern state of Peninsular Malaysia participated in the study. A pretest of understanding the tajweed rules and a pretest of al-Quran recitation have been carried out to investigate the students' prior knowledge before they undergo the treatment. The pretest score was later used as the covariate when analyzing the differences in terms of posttest scores among the three treatment groups using ANCOVA. The students took about 140 minutes to complete the treatment, i.e., learning from the multimedia courseware. After they have completed the treatment session, the three groups sat for the two posttests in order to measure their comprehension of the tajweed rules as well as to measure their al-Quran recitation. A written test was administered to measure the participants' comprehension. Each student was also required to recite the Quranic verses involving the tajweed rules learned from the courseware, and the teacher graded the student's recitation.

5.0 FINDINGS

In order to answer the first research question, the pretest of the students' comprehension on the tajweed rules was used as covariate. The adjusted mean sore for the post test is 8.00. Based on Table 1, the students who received the MVR treatment obtained the highest mean score (mean: 28.57), followed by the group using MVS (mean: 23:50) and MV (mean: 18:13). The ANCOVA result indicates a significant difference in terms of tajweed comprehension between the three modes of treatment groups at the 0.05 level of significance (F: 898, p: 0.00).

The post hoc results in Table 2 indicate that MVS group obtained significantly higher score compared with the MV group (p: 0.032, the mean difference: 5.38). The MVR group also performed significantly better compared to the MVS group (p: 0.047, the mean difference: 5.06). A significant difference was also found between the MVR and the MV groups (p: 0.00, mean difference: 10:44). Therefore, MVR obtained the highest score, followed by the group and finally the MV group. It other words, the finding shows significant differences in terms of tajweed rules comprehension between the MVR, MVS and the MV groups, with the MVR group obtained the highest score, followed by the MVS group and finally the MV group.

Table 1

Result of Posttest of Comprehension of Tajweed Rules for the Three Modes of Presentation

Group	N	Adjusted Mean	SE	F	p	Result
MV	46	18.13	1.74			
MVS	46	23.50	1.71	8.984	0.000	Sig.
MVR	48	28.57	1.74			

Table 2

Result of Post Hoc of Comprehension of Tajweed Rules

	Post Hoc		Mean Difference	p	Result
Understanding Tajweed Rules	MV	MVS	-5.38	0.032	Sig.
	MVS	MVR	-5.06	0.047	Sig.
	MVR	MV	10.44	0.000	Sig.

In order to answer the second research question, the pretest scores of Quran recitation were used as the covariate. The analysis revealed the adjusted means of the post test at 20.68. Based on Table 3, the MVR group obtained the highest recitation score (mean: 34.50), followed by the MVS group (mean: 30.25), and the MV group (mean: 30.15). The ANCOVA univariate analysis showed a significant difference in terms of Quran recitation among the three treatment groups at the 0.05 level of significance (F: 5.797, p: 0.004).

The post hoc results in Table 4 indicate that the MVR group performed a significantly higher recitation score as compared to that of the MVS group (p: 0.005, mean difference: 4.25). A significant difference was also observed between the MVR and MV groups (p: 0.003, mean difference: 4:35), with the former outperformed

the latter group. In addition, although the MVS group obtained a higher recitation score compared to the MV group (mean difference: 0.98), the comparison between these two groups yield a non-significant finding (p: 0.945). Thus, overall, it can be concluded that there are significant differences in Quran recitation between groups of students who received the MV, MVS and MVR courseware.

Table 3
Result of Posttest of Quran Recitation for the Three Modes of Presentation

Mode	N	Adjusted Mean	SE	F	p	Result
MV	46	30.15	0.98			
MVS	46	30.25	1.01	5.797	0.004	Sig.
MVR	48	34.50	1.01			

Table 4
Result of Post Hoc of Quran Recitation

	Post Hoc		Mean Difference	p	Result
Recitation of al-Quran	MV	MVS	-0.98	0.945	Not Sig.
	MVS	MVR	-4.25	0.005	Sig.
	MVR	MV	4.35	0.003	Sig.

6.0 DISCUSSION

Data analysis shows that there is a significant difference in comprehension in the tajweed rules among the groups who received the three different presentation modes; MV, MVS and MVR. The post hoc finding indicates that the MVR group obtained significantly higher comprehension score as compared to the MVS and MV groups. This result showed that the elements in the MVR interface have stimulated the students' comprehension of tajweed rules as compared to the other two modes. The voice recognition system that allows students to record, playback and evaluate their own recitation is an advantage that could help them to understand more about tajweed rules. During learning, the students in the MVR group indirectly perform a type of self-assessment when they playback their own voice recording (their own recitation of the Quranic verses) and the compared it to the *qari's* recitation. According to Mohd Azizi and Isha (2008), when students can assess and reflect their own work, they can eventually analyze their own progress, identify their strengths and weaknesses, and try to improve their work.

The implications of self-assessment can provide intellectual stimulation by establishing learning experience (Valkanova, 2004). Self-evaluation enhances the learning autonomy and encourages students to do better (Chen, 2008). In regard to MVS, the subtitle only helps the students to follow the recitation from the *qari* but the students did not perform any self-assessment. This is due to the fact that no recording of the student's recitation is done in this courseware mode, and thus, the absence of any audio files that can be played back and be compared it to the *qari's recitation*. Furthermore, the students who had undergone the MVS treatment ultimately lost their focus on the tajweed rules as they were too eager to follow the recitation of the *qari* and the color changing of *kalimah*. Meanwhile, the students who received MV were having problem in focusing to the video and *qari* at the same time. This problem occurred due to the split attention principle - students will have problems in learning when they had to divide their attention to several elements exist in the media (Moreno, 2006).

7.0 CONCLUSION AND SUGGESTION

Based on the findings, it can be concluded that multimedia courseware for teaching the holy Quran should be more interactive and provide more opportunity for students to learn at their own self-paced. Self-assessment helps students to find their own mistakes and try to do improvement on their own. Students will be able to understand more about tajweed rules as well as improve their Quran recitation when they do reflection and self-assessment of their own recitation in the audio files recorded. Moreover, voice recognition is one of the many ways to help students produce a smooth Quran recitation. Further research should be done in the field of voice recognition as it has the capability to improve the memorization of the Quranic verses and Arabic writing.

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