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## Effectiveness of Quran Tune on memory in children

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### Abstract

Whereas various studies have been done to discover effectiveness of music on memory, few researches have applied about the Quran tune as rhythmic music to improve memory performance. The present study examined the effect of Quran tune on students' memory. The study method was experimental with pre-test, post-test and control group. School was selected conveniently, but the subjects randomly among girls, grade 5. In order to evaluate the memory of subjects, Wechsler's digit span and alphabet succession tests (version 4) were applied. First we gave both tests to students, and then we Quran tune was played to them for 15 minutes using headphones, finally the two tests were applied once more. This procedure was done in control group with the exception that no tune was played during 15 minutes. The control subjects were monitored not to do any effective or intervening activity to influence memory. Data were analyzed using t-Test. The research findings indicated that Quran group was significantly different from control group in terms of digit span ( $p < 0.001$ ) as well as alphabet succession ( $p < 0.001$ ).

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### 1. Introduction

Memory is an important factor in learning (Masoura, 2006) and defects in memory functions such as disarray in short term and working memories and mild deficits in decoding, cognitive and meta cognitive strategies lead to learning disabilities (Lerner, 2003. Taroyan, Nicolson & Fawcett, 2007). Memory is a mental system that serves to store and process information for a series of complicated cognitive tasks like understanding, thinking, computing, reasoning and learning (Baddeley, 1986)

Music comprehension is a captivating activity of human mind. Music is combination of melodies and making sound in order to make beauty or expressing the feelings (Hockett, 1960). Today, many researches all over the world

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study the music and its neurophysiologic effects. In psychology realm, music is considered as a kind of language that has specific areas in mind. Therefore, these areas will be activated by hearing a harmonic melody (Fitch, 2006).

Music has had a positive effect on memory of patients suffering from Alzheimer (Whitley, 2002). There is a connection between cognition and music (Lipe, 1995, Cash, 1997, Corkerton, Morros, Norman, 1997). Also, systematic and regulated teaching of music is effective in memory processing (Chiho and Chun, 2003). Short term memory functioning works better by using auditory rhythmic stimulus in comparison to visual ones (Collier & Logan, 2000). In a study, Kholfi, Bayan Zade, Mohammadi and Shafaroudi (1384) showed that music therapy was effective in increasing attention and memory scores. Silverman came to this conclusion that music is surprisingly effective in suppressing and encountering symptoms of severe mental retardation. Cecato, Caneva and Lamonaca (2006) investigated the possible effectiveness of specific protocol of music therapy and specific performance of attention and memory in schizophrenic patients. The results indicated that patients who benefited from specific protocol music therapy had significant improvements in Wechsler memory scores and life skills.

There are evidences showing the effect of music on learning improvement (chikahisa, et al., 2006). Learning music has correlation with music learning and IQ raises (Schellenberg, 2004). The effects of music on memory, attention, spatial, mathematical and reading abilities children are known. (Ulfarsdottir & Erwin, 1999). In addition music leads to students' improvements in school performances (Gardiner, Fox, Jeffrey, 1996).

Since harmonic melody of Quran as music has rhythm, it can affect some areas of mind. Therefore, in this study the effectiveness of Quran melody as a kind of harmonic music on memory has been investigated. Little research has been done on the effects of Quran and most of them are about the effects of music on memory. Therefore, this study focuses just on the impacts of Quran on memory.

## **2. Method**

### *2.1. participants*

In this research, among elementary schools of Tehran city one school was selected by random sampling. 32 female students were chosen among 12-year-old students and were randomly put in the experimental and control group.

### *2.2. procedure*

The study design was experimental with pre and posttest design with the control group. The experiment was done in two rooms with suitable light, two chairs and a desk. There was an examiner in each room. Participants would go in one by one. First, well-trained examiners talked to the subjects and attracted their trusts. In the experiment group the digit span and letters sequence subscales were performed. Then, Quran was broadcasted for them by headphone for 15 minutes and the two tests were taken again. In the control group, after taking the two tests, the subject had to seat for 15 minutes without doing any effective or distracting activity that influences her memory.

### *2.3. Tools*

In this study digit span and letters sequence subscales of Wechsler intelligence scale for children-revised (WISCR) was used to assess memory. This scale is designed by Wechsler (1969) in order to assess children IQ and is one of the most accepted and used scales in this realm. It is comprised of 12 subscales and has two verbal and non-verbal parts. Its validity by splitting approach is 97% for the total IQ, 97% for the verbal IQ and 93% for the practical IQ. The Persian form of the scale normalized by Shahim (1998) for assessing IQ of 6 to 13 year-old children is used in this research.

## **3. Results**

As it is presented in table 1, letters sequence subscale is decreased in the control group while it has reached from 17, 66 to 19, 37 in the experiment group. The mean of digit spam subscale has no significant change in the control group while it has increased from 18, 75 to 20, 62 in the experiment group.

Table 1: statistical parameters of total scores of anxiety, situation and personality subscales of experimental and control groups

Posttest			Pre test			Group	variable
Std. Deviation	Mean	N	Std. Deviation	Mean	N		
3/8	19/37	16	4/3	17/68	16	Quran control	Letters sequence
2/64	17/75	16	3/65	18/5	16		
4/45	20/62	16	3/53	18/75	16	Quran control	Digit spam
3/84	18/43	16	3/5	18/81	16		

The findings represented that changes in the digit spam and letters sequence were not significant in the control group while they were both significant in the experiment group.

Table 2: analysis of the experimental and control groups' t-test in pre and post test

p	df	t	group	variable
0/0001	15	-4/52	Quran control	letters sequenc
0/32	15	1/01	control	
0/0001	15	-2/36	Quran control	digit spam
0/54	15	0/62	control	

## Discussion

Findings of this research was consistent with findings of other studies in the field of effectiveness of music on memory, like studies of Cioho, Chun(2003), Whitley(2002), Khalaf beige, Bayan zadeh, Mohammadi, and Shefaroudi (1384). Although each of these studies has focused on a different part of memory, all has examined memory in the same scope.

Since this study has investigated only the auditory scope, it cannot be compared with Choller's and Logan's research (2002), but it can be inferred that music and harmonic rhythms influence memory due to stimulating auditory cortex. The findings are also in concordance with studies of Cecato, Canevu, Lamonaca (2006), however, the subjects of this study were normal children not schizophrenic ones. Because memory is the basis of learning it can be perceived that by listening to harmonic music like Quran melody we can strengthen learning and this finding is in accordance with results of Chikahisa's and his colleagues study (2006). Bolstering learning results in improvement of academic performance, which is in agreement with the research of Gardiner, Fox and Jeffrey (1996).

## 4. Conclusion

Paying attention to important factors in fortifying memory leads to improvement of learning process in students. Different methods have been designed in this field but we cannot absolutely accept and perform all of them for students in different ages. However, by listening to Quran for only 15 minutes a day, without using any other skill or training, we can improve students' memories. Therefore, it has been suggested that academic centers and school managers use this strategy as a memory fortifying technique and observe their students achievements.

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