Emotion and Memorizing Qur'an Ability: The Factors That Affect Verbal Working Capacity

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Keyword: Emotion, memorize, Qur'an, ability, factors, verbal, working, capacity

Abstract: This study aimed to explore the factors that affect verbal working memory capacity of Qur'an memorizing students. There were 48 students (25 female and 23 male) and 4 teachers (1 female and 3 male) of two Tahfidz institution in Bogor, West Java, Indonesia, who participated in this study. The study used survey and interview techniques. Individual has different response to the phonological loop phenomenon because they have differences in working memory capacity. Emotion, executive attention ability and motivation are factors that affect the increase or decrease in working memory capacity.

1   INTRODUCTION

According to the theory of Baddeley and Hitch (as cited in Baddeley, 2012), working memory is an active storage to store and manipulate information. Baddeley's model is useful for describing and organizing duration, capacity, and mechanisms in working memory. Working memory is a multi-component system with multiple domain-specific component of short-term storage under control of central executive unit. The approach from working memory proposed by Baddeley showed that working memory is not a passive storage but the new information and the information on the long-term memory was combined, modified, and manipulated so that it can be used for a variety of cognitive activities (Matlin, 2013). Working memory consists of (1) the slave system (which is responsible for the short-term information storage) and (2) central executive which is responsible for coordination of complex cognitive processes and direct the relevant information at the time inhibits irrelevant information. Baddeley working memory split into two storage buffers, which arephonological loop for verbal information and visuospatial sketchpad fornon-verbal information.

One of behaviours that describe the activity of cognitive and verbal skills and keep working is to memorize the Qur'an or *hifzul* Qur'an. Memorizing and retaining the text of Qur'an is high-level cognitive activities. Even though, Qur'an is a text of Considerable length. It consists of 30 Parts, and 114 Chapters of varying length. The total number of verses in the Qur'an are 6666. According to the fluency, reading style and speed of the Reciter.

Qur'an reciter is identicalwith the ability of verbal working memory. The length of time required to read the_Qur'an from sheet to sheet can be varied in accordance with fluency, reading style and speed of reading. How does the process of becoming a hafidz so as to Qur'an reciter as much as 30 chapters and keep memorizing 30 Juz Qur'an? Differences in the response from the processing of information both during encoding and recall of the Qur'an text, indicating the existence of individual differences. Whether it is influenced by factors such as psychological factors, physical or environmental factors? Anything that affects the process of memorizing the Qur'an? Does that affect the capacity of verbal working memory in the Qur'an memorizers? Important to know the factors that affect the performance Qu'ran reciters.

2   METHOD

2.1   Design and Participant

This research is the ex-post factor field study quantitative research, which is the non-experimental

quantitative research design. From the aspect of the research objectives, the research is explorative descriptive research. Methods of data collection were of two types; the first are a structured and detailed interview for Qur'an teachers and students. The interviews were conducted to explore the process of Qur'an memorizing and the possible factors or processes influencing the process of memorization of the Quran. In an attempt to view the process holistically, the interview questions included open-ended questions on the possible human factors (iman or faith, self-discipline, emotion, motivation, fatigue), environmental factors (food, noise), memory control processes (repeating, writing, understanding, etc.) and Quranic text characteristics (rhythm, writing style etc.). The second method for data collection are the survey on people that are involved in the Quranic memorization process. Strengthen the findings from interviews as well as to explore for the factors that influence verbal working memory conducted with open questionnaire. The population of this research was 48students in TahfidzFalakiyah (25 students) and TahfidzKhoiruUmmah (23 students) Bogor West Java, Indonesia. The data collection technique used questionnaire that distributedamong 48 students of the Qur'an reciters (the average of age is 16.5 years).

3 RESULT AND DISCUSSION

The capacity ofthe working memory refers to the ability tomaintain, manipulate and access the mental picture thatis requiredto support a complex cognition. Working memory capacity is closely linked to the ability tomaintainattention and as a predictor of achievement (Gathercole, Brown and Pickering, 2003; Jarrold and Towse, 2006). Besides variations in working memory capacity can predict high-level cognitive abilities such as solving the problem of general fluid (*gf*) intellegence (Broadway and Engle, 2011). Individuals with greater capacity tend toperformbetter on cognitive tasks thanindividualswith a lower capacity. Research on individual differences and variations in working memory, explaining that each individualhas limited working memory capacity and relatively fixed and consistent (Alloway, Gathercole, Kirkwood and Elliot, 2009; Jarrold and Towse, 2006). Also, some individual differencesin working memorycan beexplained by the storage capacity. The fundamental characteristic is that working memory capacityislimited, which limits cognitive

performance (Alloway, Gathercole, Kirkwood and Elliot, 2009). Some variance in working memorycan beattributed to normal cognitive development ofindividualsas they age. Working memory capacity increased from childhood to adolescence, and at the adult stagehas been reached (Jarrold and Towse, 2006).

What factors are affecting verbal working memory capacity of Qur'an reciters? Survey the data results can be seen in the graph below.
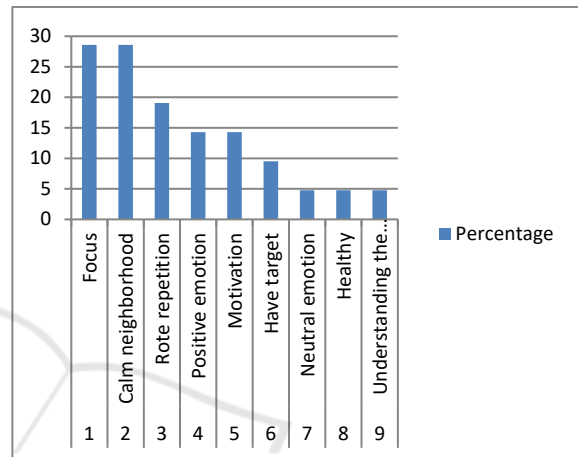

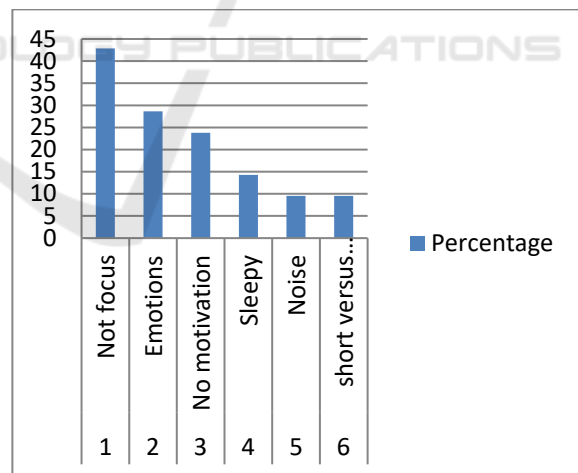Figure 1: The percentage of factors that increase the verbal working memory capacity.

Figure 2: The percentageof factorsthat decrease the verbal working memory capacity.

From figure 1 and figure 2, the big four factors are influential both in increasing or decreasing the verbal working memory is (1) Focus (2) Environment (3) Emotions (4) Motivation. Factors focus or lack to focus has the highest percentage

levels, to improve or worsen verbal working memory.

According to one student stated that if individual keep concentration, it will ignore distractions. This is called selective attention (Eysenck and Keane, 2007) stated that selective attention process occurs when multiple stimuli appear, but only one is focused or given attention (dichotic listening experiment).

Environment interference that their concentration is noise. Students find it hard to concentrate when they heard a noise in the form of continuous noise, the noise that comes from the sound that grade noise did not falter, in this case the sound of their friends who also memorize the Qur'an.The class noise stimulus will become irrelevant information and will act as an additional stimulus to the phonological loop. This would make a person difficulty in processing the relevant information. However, on the other hand there are also students that feel disturbed.

Individual differences in maintaining the relevant information related to working memory capacity. Individuals with working-memory capacity of a low have difficulty to ignore information that is not important, so that people with working-memory capacity low, more easy to be distracted from the work being done.Suspected that differences in working memory capacity of individualsrelated to differences in attentionexecutive system, which acts as a supervisor in coordinating both processing and storage could also include working memory variants that occur im cognitive tasks of high level. In addition executive control individuals associated with emotion regulation (Miyake and Shah, 1999).

However, everyone has a different ability to control your thoughts and actions. Miyake et.al had examined individual difference in executive function (Santrock John, 2014). The study focused on three capabilities: (1) updating (constantly monitored and rapidly increase or decrease the working memory content), (2) shifted (flexibly changed between tasks or mental sets), and (3) inhibition (deliberate overriding of dominant or prepotent responses). Target executive function should be attached to the context of a specific task (that can be operationalized), a score derived from the completion of the task of executive function.

A survey was conducted on the kinds of emotions that can increase and decrease verbal working memory. The results of the survey to 48 students showed that emotions affect verbal working memory. Figure 3 shows the emotion that can increase verbal working memory and Figure 4 shows
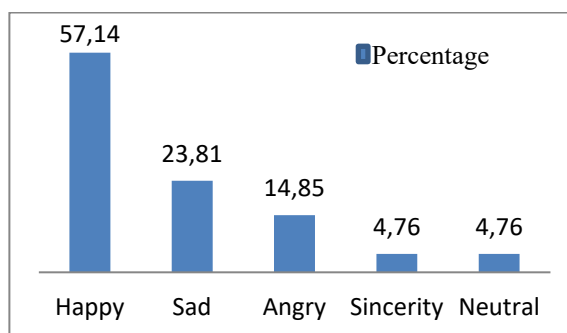
the emotion that can decrease the verbal working memory.

Figure 3: Graph the percentage of emotion that increase the capacity of verbal working memory.

In Figure3. it can beseen that not only positive emotions, like happiness, but a number of negative emotions was found to increase working working memory capacity, such as sadness, remembering parents who have died according to reports two students and a teacher can improve verbal working memory capacity.While negative emotions are relatively dominant in reducing verbal working memory capacity (Figure 4).
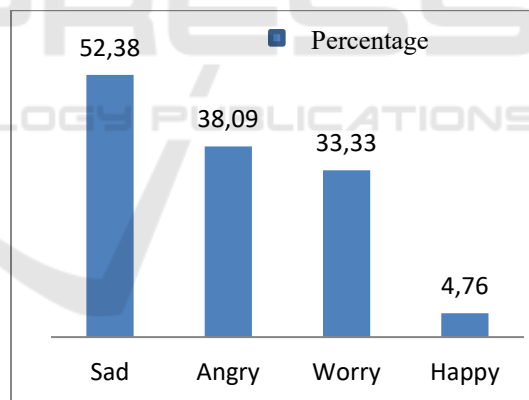

Figure 4: the percentage of emotion that decrease the capacity of verbal working memory.

Emotion is one of the affective function of humans. In general, the emotion can be defined as a feeling or affect what happens to humans when involved in an interaction that is important to them, especially for welfare (Myers, 2010; Gray, 2001) stated that emotions arise because of external factors that are human involvement with environment. Emotions can affect working memory capacity. According to Yang, Yang and Isen (2013), positive emotions were able to sharpen or reinforce verbal working memory, but weaken or reduce spatial

working memory, the study found that positive emotions compared to neutral, capable of improving the operating performance on verbal working memory span task (Ryan and Deci, 2000).

The survey results showed that motivation is another factor that affected the increase and decrease in working memory capacity. The research in educational settings reported that people who have the desire itself in completing the task, while it is an intrinsic motivation, the results showed the individuals who have a high intrinsic motivation is associated with increased learning and achievement (Oberauer, 2009).

Motivation relationshipto working memory capacity is as assumed that working memory is a system that provides access to an overview of goal-oriented processing (Ryan and Deci, 2000). At least in humans it involves processes such as language comprehension, reasoning, planning, thinking hypotheses, and creatively solved problems. The process of memorizing the Qur'an involved working memory. Students who have the intrinsic motivation to achieve the target to memorize several chapters of Qur'an will be able to maintain attention and ignore irrelevant information as a nuisance.

4 CONCLUSION AND SUGGESTION

It can be concluded that the individual difference are because of differences in working memory capacity. The executive attention ability, emotion, and motivation are factors that affect the increase or decrease in working memory capacity. Both positive and negative emotions can improve working memory capacity however, negative emotions dominantly decrease working memory capacity.

The limitation of the current study was limited sample size. For future study the number of samples had to be increased. To this end, future studies are recommended to examining how emotion can affect working memory capacity of Qur'an memorizing students.

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