UMRAN - International Journal of Islamic and Civilizational Studies
http://jurnalumran.utm.my

Techniques for Memorizing the Quran: A Comparative Study of the Memory System Tendencies of Maahad Integrasi Tahfiz Selangor (MITS) Students

Fakhrur Ridza Muslim[a], Mohd Amzari Tumiran [a]*, Mohd Zahirwan Halim Zainal Abidin[b]

[a]*Academy of Contemporary Islamic Studies, Universiti Teknologi MARA, 40450 Shah Alam, Selangor*
[b]*Academy of Contemporary Islamic Studies, Universiti Teknologi MARA, Perak Brance, Campus of Seri Iskandar, 32610 Seri Iskandar, Perak*
**Corresponding author: amzari92@uitm.edu.my*

Article history

Received: 2023-01-10 Received in revised form: 2023-09-01 Accepted: 2023-09-15 Published online: 2024-06-30

Abstract

Memorizing the Quran typically employs memorizers' common techniques, which also result in manners appreciation, and the development of motivation and self-inspiration in them as well. The approach is frequently utilized as a spontaneous practice when memorizing the Quran. However, the memorizing strategies used frequently change depending on the memory system's propensity: (a) semantics; (b) episodic; and (c) visual. This study aimed to identify and compare techniques for memorizing the Quran among the students of Maahad Integrasi Tahfiz Selangor (MITS) Klang, Selangor. MITS secondary school students from form one to form four were involved as a sample (n=192). The methodology used in this study is quantitative. A questionnaire and IBM SPSS Statistics (version 27) computer software were utilized in the instrumentation. The Friedman test and descriptive statistics were used to analyze the data. Techniques for memorizing the Quran using a semantic memory system indicated the most frequent practice (63, 32.8%) compared to the visual memory system (44, 23%) and episodic memory system (18, 9.4%). Additionally, the Friedman test found that the techniques in memorizing the Quran that use the semantic memory system (mean rank: 2.17) are the most frequently used with a significant difference $\chi^2(2)=36.892$, $\varrho=.000$ compared to the visual memory system (mean rank: 2.02) and episodic memory system (mean rank: 1.82). This study suggests that secondary school students of MITS Klang have a tendency towards the semantic memory system in memorizing the Quran compared to the visual and episodic memory systems. Further studies related to semantic methods in *hafazan* can be explored, perhaps through qualitative methods as well as a wider range of studies.

Keywords: memorizing techniques, memory system, Quranic memorization, *tahfiz*.

1.0 INTRODUCTION

Memorizing is one approach to comprehending the content of the Quran (Colina & Listiana, 2021). Allah has made memorizing the Quran simple. Memorizing the Quran typically employs memorizers' common techniques, which also result in manners appreciation (Sarihat, 2019), and the development of motivation and self-inspiration in them as well (Aslan, 2022). Memorizers of the Quran might be native Arabic speakers, non-native Arabic speakers, or non-Arabic speakers (Saleem, 2018). The approach is frequently utilized as a spontaneous practice when memorizing the Quran. For example, one approach for memorizing the Quran is to continually listen to a tape of the recitation, follow the melody of a prominent reciter, and memorize by retaining the verse's meaning.

However, the memorizing strategies used frequently change depending on the memory system's propensity. Memorizers of the Quran have a preference for a specific memory system (Saleem, 2018): (a) semantics; (b) episodic; and (c) visual. The use of these various memory systems is predicted to have a varied influence on a learning method in Islamic educational tradition, such as comprehension and appreciation. Furthermore, memorizers of the Quran are more likely to be in good physical, psychological, and health condition (Ishak et al., 2021). Maahad Integrasi Tahfiz Selangor (MITS) Klang is selected as a location in this study as one of the *tahfiz* institutions under Jabatan Agama Islam Selangor (JAIS).

The objective of this study is to identify and compare techniques for memorizing the Quran among the students of Maahad Integrasi Tahfiz Selangor (MITS) Klang, Selangor. Memorizing, often known as part of working memory, is a type of short-term memory (STM) (Baddeley, 2020). The identifiable and comparable variant memorizing techniques are expected to generate new ideas for future research into enhancing the lifespan of STM and converting it to long-term memory (LTM). The purpose of identification and comparison is to improve the quality of memorization of the Quran.

1.1 Memorizing in Islamic Education

In Islamic education, memorization is a common method of learning. Since the revelation of the Quran, as well as prophetic traditions, companions of the prophets have been encouraged to memorize them.

> *"It was narrated from Ibn Tawus that his father said: I heard Ibn 'Abbas saying: "We used to memorize ahadith, and ahadith were memorized from the Messenger of Allah (pbuh). But if you go to the extremes of either exaggeration or negligence (in narrating ahadith), there is no way we can trust your ahadith."" (Ibn Majah, Kitab al-Muqaddimah (1), hadith no. 27).*

> *"Narrated Ibn `Abbas: The Prophet (pbuh) used to move his tongue when the divine Inspiration was being revealed to him. (Sufyan, a subnarrator, demonstrated (how the Prophet (pbuh) used to move his lips) and added. "To memorize it." So Allah revealed: "Move not your tongue concerning (the Qur'an) to make haste therewith (Qur'an 75:16)."" (Al-Bukhari, Kitab al-Tafsir (65), hadith no. 4927).*

Quranic memorization is the act of memorizing the Quran (*hifz*). The term *tahfiz* education describes the educational method that produces Quran memorizers (*huffaz*). Memorizing the Quran was an essential method of preserving information throughout the early stages of Islam. Memorizing in *tahfiz* al-Quran began when the first revelation was given to the Prophet Muhammad (pbuh). Allah had directed his angel, Gabriel to teach the Quran to Prophet Muhammad at that time. When teaching the Quran to Prophet Muhammad, Gabriel then repeated the passages and employed the memorizing method:

> *"We will make you recite, [O Muhammad), and you will not forget" (Al-A'la 87: 6)*

According to the revelation experience, memorizing in *tahfiz* education was one of the ways to convey Islamic teachings demonstrated by Prophet Muhammad (Fauzan & Mohamad, 2017). As a result, when teaching the Quran to his companions, Prophet Muhammad adopted the memorizing approach (Al Hafiz et al., 2016). Since then, memorizing has been a vital technique of learning the Quran, in addition to preventing the diminishing number of successive *huffaz* and fabrication of Quranic passages.

1.2 The Basic Memory System

Memory is typically described as the storage of information for later use (Rahmatian & Armiun, 2013). Learning and psychological changes influenced by experiences are stored as a memory for preservation and recovery (Kensinger & Ford, 2020). Memory is created by a complex network of important neurocognitive processes that promotes learning and permits the development of new knowledge and information encountered through new experiences. (Benedek & Fink, 2019). It has been intensively researched in a variety of fields., e.g., biopsychology (Aleixo & Sumner, 2017), neurocognitive (Sawi & Rueckl, 2019), and cognitive informatics (Wang, 2009).

William James introduced the basic memory components in 1890 (James, 1890), and they consist of three major sections: (a) the after-image; (b) the primary memory; and (b) the secondary memory. Because of the availability of additional sensorial inputs to the memory (e.g., hearing and touch), the idea of sensory memory gradually replaced the concept of after-image memory. A subsequent hypothesis in 1998 (Sternberg, 1998) defined memory components as: (a) sensory memory; (b) short-term memory; and (c) long-term memory. This definition of memory components has been used until nowadays.

Sensory memory (SM), also known as sensory register, is where vital information is retrieved from the number of inputs entering the brain and is regarded as a main source of intelligence. (Wan et al., 2020). It can only be held for half a second and no longer (Shiffrin, 2018). The two basic categories of sensory memory are (a) iconic memory, which is associated with visual stimuli (Quilty-Dunn, 2020); and (b) echoic memory, which is connected to auditory stimuli (Kinukawa et al., 2019).

After being defined as the main memory, short-term memory (STM) performs a subsequent process of chosen information. This procedure takes roughly 20 seconds until the registered item in STM is gone altogether (Baddeley, 2020). This is because STM conducts the SM's registration function to the LTM. Furthermore, the WM capacity is restricted to 7±2 chunks of information (Chanquoy et al., 2007).

Long-term memory (LTM), also known as permanent memory, stores data concerning (Guo, 2016): (a) Semantic Memory, which is concerned with words and forms; (b) Episodic Memory, or the order of experience chapters; and (c) Procedural Memory, which refers to the automated processes of behavioral skill. The memorizing process involves all of these categories of memory (SM, VS, PL, EB, and CE). For maintaining and retrieving knowledge, cognitive memory is dependent on information coherence to and from the LTM (Revlin, 2013). This corresponds to the Arabic verbal root "*hifz*", which means "to preserve" (Gent, 2011). However, this study focussed on visual, semantic, and episodic memories regarding memorizing the Quran.

1.3 Past Research on Memorizing the Quran

In contrast to Islamic education, the study of the memory system typically encompasses the areas of neurology, medicine, and linguistics. Shukri et al. (2020) proposed many ways to remember the Quran, including the capacity to focus on Quran verses through oral or visual means, repetition, comprehension, organization, exercise, balanced nutrition, enough sleep, and the use of technology as a memory aid (Shukri et al., 2020). The Quran memorizing approach has a

significant impact on the quality of memorization. Fathur Rozi et al. (2022) proposed that the approach of *sabaq* (new memorization based on existing constituents), *sabqi* (repeating the new memory of selected constituents), and manzil (repeating the old memorization of certain constituents) can increase the quality of memorizing the Quran (Rohmad & Fathah, 2022). This repetition strategy is believed to consolidate new learning memory while retaining old memory (Tabibian et al., 2019).

Memorizing the al-Quran en masse (*muraja'ah*) is also advised by Suhandi (2022) and Basir et al. (2020) as a way to improve the memory of memorizing the Quran. *Muraja'ah* is completed by each member of the group reading approximately two or three pages of the Quran in turn. This activity is recommended to assist in offering spiritual support, increase enthusiasm, and keep discipline while memorizing the Quran (Basir et al., 2020; Suhandi, 2022).

Meanwhile, Hurriyati et al. (2022) contend that strict discipline improves working memory, concentration, and information processing capabilities (Hurriyati et al., 2022). According to Sirin et al. (2021), memorizing the Quran improves verbal and visual memory, attention, and lexical and semantic fluency. This favorable effect is supported by substantial variations in oral learning, visual learning, attention, and phonemic and semantic fluency before and after the memorizing practice (Sirin et al., 2021).

Sirin et al. (2021) study was shown to be adaptive for the development of ideas concerning verbal and visual memory, attention, and lexical and semantic fluency in memorizing the Quran in numerous studies presented. Similarly, Sulianti et al. (2018) presented a lip-sync approach for al-Quran memorizing, which is normally performed by listening to prominent Quranic reciters (Qari) readings. However, the research of Shukri et al. (2020) and Fathur Rozi et al. (2022) should be considered, since they provide the notion of memorizing repetition as an activity that develops memory. The *muraja'ah* approach, proposed by Basir et al. (2020) and Suhandi (2022), is given attention as part of the construct of this study, in keeping with the emphasis on discipline in memorizing by Hurriyati et al. (2022).

This concludes that the research on memorising the Quran in the literature review suggests a few memorization techniques that link to the memory system. Memorization, which is referred to as a component of working memory, is a kind of short-term memory (STM) (Baddeley, 2020). The use of recognisable and comparable variant memorising approaches is anticipated to provide novel insights for future investigations aimed at augmenting the lifetime of short-term memory (STM) and facilitating its conversion into long-term memory (LTM). The process of recognition and comparison is intended to enhance the efficacy of Quranic memorization. The primary objective of this study was to examine the cognitive processes associated with the retention of the Quran, specifically concerning visual, semantic, and episodic memory.

2.0 MATERIALS AND METHOD

The methodology used in this study is quantitative. In this study, MITS secondary school students from form one to form four were involved as a sample (n=192) (Table 1 & Figure 1) as the inclusion criteria. The exclusion criteria used are students who: (a) are on vacation; (b) subject to disciplinary action; (c) have unsatisfactory health/illness; and (d) were not at school when the data collection process was carried out. The stratified sampling with Krejcie & Morgan (1970) technique was utilized in separate calculations of sample size for each form of school. MITS Klang has the largest number of students compared to other MITS schools.

Table 1: Sampling Frame.

		Form of School (*N*, *n*)*				Total
		One	Two	Three	Four	
Gender	Male	*N*=25, *n*=24	*N*=24, *n*=23	*N*=25, *n*=24	*N*=25, *n*=24	*N*=99, *n*=95
	Female	*N*=28, *n*=26	*N*=27, *n*=25	*N*=27, *n*=25	*N*=22, *n*=21	*N*=104, *n*=97
Total		*N*=53, *n*=50	*N*=51, *n*=48	*N*=52, *n*=49	*N*=47, *n*=45	*N*=203, *n*=192

**N*: Population size, *n*: Sample size

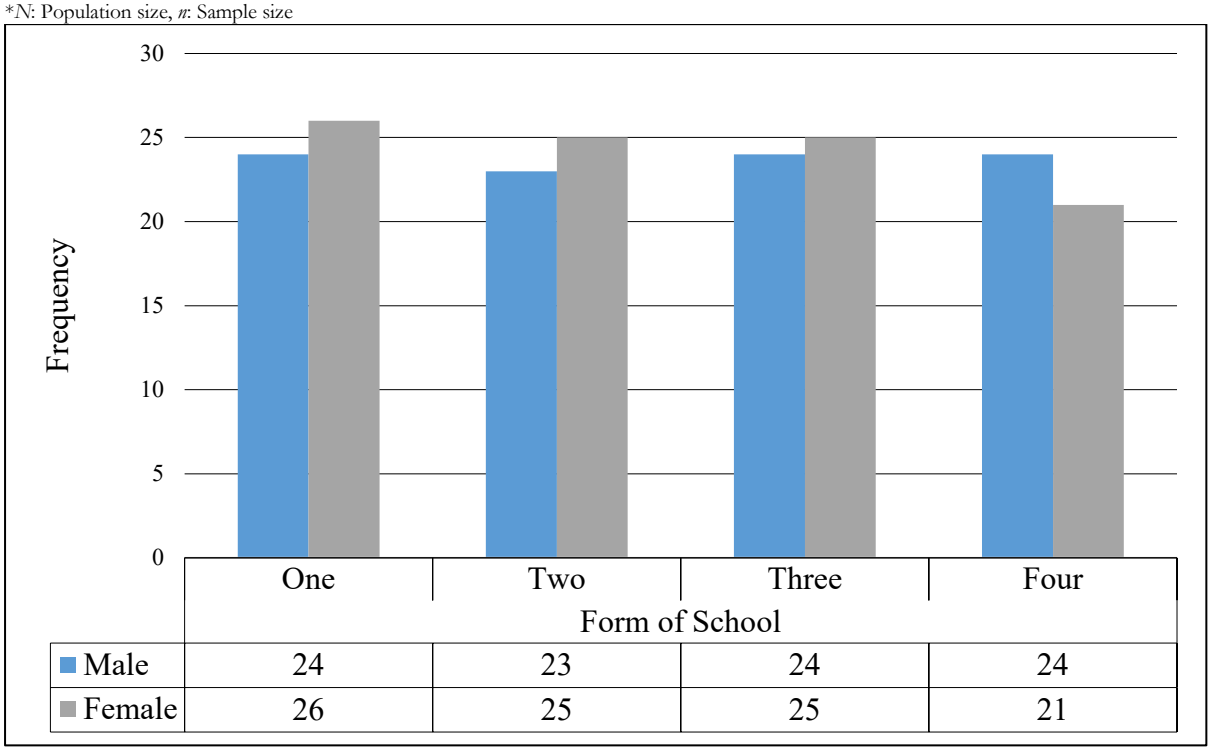

Figure 1: Form of School and Gender-based Demography of Respondents.

A questionnaire and IBM SPSS Statistics (version 27) computer software were utilized in the instrumentation. The Friedman test and descriptive statistics were used to analyze the data. The construct of the questionnaire's item is based on the technique that is often employed by students in memorizing the Quran (Table 2).

Table 2: Items of the Questionnaire.

Type of Memory Systems	No.	Techniques for Memorizing the Quran
Episodic	1.	Listen to a friend's recitation
	2.	Start memorizing the last sentence
	3.	Mark memorized sentences
	4.	Remembering keywords
	5.	Repeat aloud after listening to *Qari*'s recitation
	6.	Repeat silently after listening to *Qari*'s recitation
	7.	Test reading by connecting sentences
	8.	Choose a specific convenient time to memorize
Semantic	9.	Remembering the storyline
	10.	Understand the meaning of the sentence
	11.	Looking for the source of the verse
	12.	Understand the teaching of the verse
Visual	13.	Record own recitation
	14.	Recite with and without looking at the text
	15.	Recite aloud
	16.	Imagine verses from the Quran
	17.	Repeat in mind (without making a sound)
	18.	Rewrite verses from the Quran
	19.	Use the method of *Tasmi'*

	20.	Repeating in small group
	21.	Repeating en masse (*muraja'ah*)
	22.	Recite in a melodic recitation manner (*tarannum*)
	23.	Imitating *Qari's* distinctive style of *tarannum*
	24.	Memorize by identifying similar sentences
	25.	Repeat the recitation in person

3.0 RESULTS AND DISCUSSION

3.1 Descriptive Statistics Analysis

General descriptive statistics (Table 3) and mean frequencies (Table 4 & Figure 2) show differences between "not practice" and "practicing" of the memory system based on the techniques for memorizing the Quran. Techniques for memorizing the Quran using a semantic memory system indicated the most frequent practice (63, 32.8%) compared to the visual memory system (44, 23%) and episodic memory system (18, 9.4%). Advanced statistical analysis was carried out to calculate the further value of the differences, by using the Friedman test subsequently.

Table 3: General Descriptive Statistics (Frequency) of Techniques for Memorizing the Quran (*n*=192).

Type of Memory Systems	No.	Not Practice			Practicing	
		Never	Ever	Sometime	Often	Always
Episodic	1.	51	72	47	15	7
	2.	176	9	-	6	1
	3.	45	45	37	28	37
	4.	15	20	49	55	53
	5.	87	60	26	13	6
	6.	126	45	19	2	-
	7.	10	43	61	42	36
	8.	5	8	20	61	98
Semantic	9.	24	35	61	42	30
	10.	8	29	40	55	60
	11.	68	54	41	21	8
	12.	31	55	55	40	11
Visual	13.	138	31	15	6	2
	14.	2	9	11	31	139
	15.	5	15	46	54	72
	16.	3	11	27	55	96
	17.	51	81	33	15	12
	18.	25	51	40	20	56
	19.	12	21	34	53	72
	20.	69	63	40	16	4
	21.	15	37	58	58	24
	22.	21	33	41	36	61
	23.	71	50	31	20	20
	24.	10	29	59	55	39
	25.	2	6	22	46	116

Table 4: Mean Frequencies of Memory System Tendencies (*n*=192).

Memory System	Practice Status	Mean Frequencies (%)
Episodic	Not Practice	174 (90.6)
	Practicing	18 (9.4)
Semantic	Not Practice	129 (67.2)
	Practicing	63 (32.8)
Visual	Not Practice	148 (77.0)
	Practicing	44 (23.0)

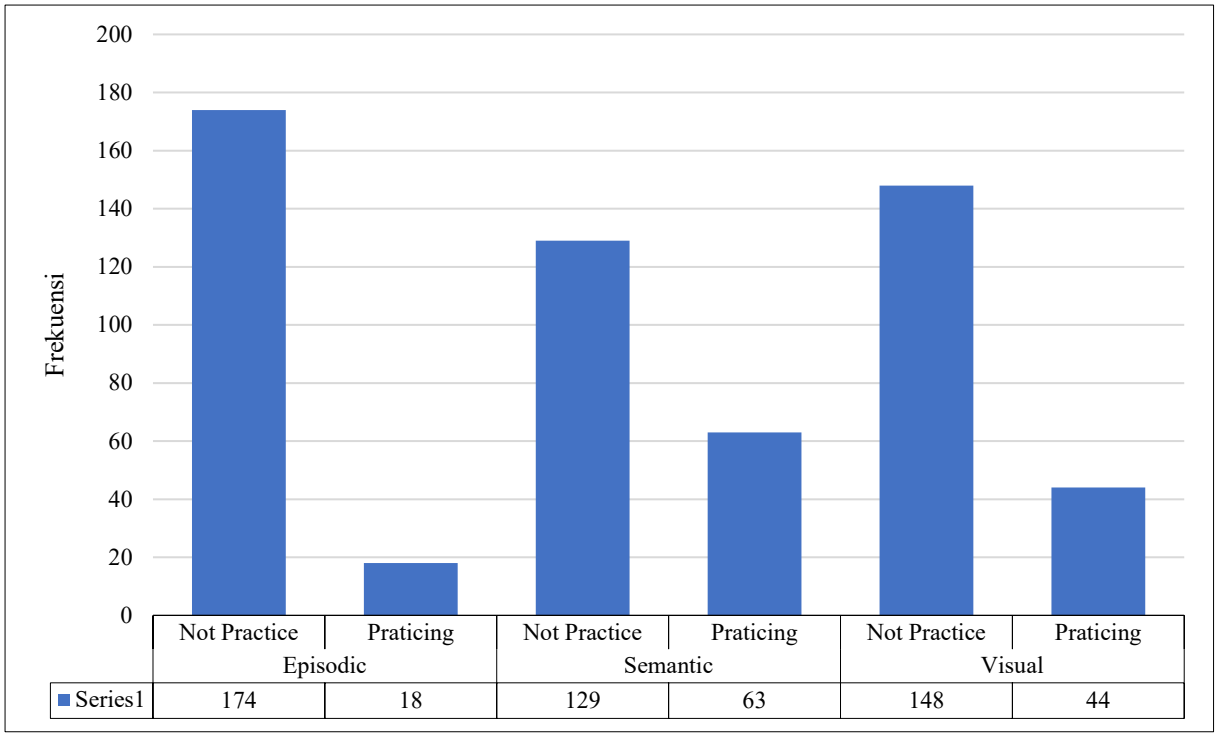

Figure 2: Frequency of Memory System in Techniques for Memorizing the Quran.

3.2 Friedman Test

The Friedman test was used to compare the frequencies of the type of memory system in techniques for memorizing the Quran. This non-parametric inferential statistical test (Table 5) found that the techniques in memorizing the Quran that use the semantic memory system (mean rank: 2.17) are the most frequently used with a significant difference $\chi^2(2)=36.892$, $\varrho=.000$ compared to the visual memory system (mean rank: 2.02) and episodic memory system (mean rank: 1.82).

Table 5: Ranks and Test Statistics of Friedman Test.

Ranks	Episodic Memory System Semantic Memory System Visual Memory System	1.82 2.17 2.02
Test Statistics	N Chi-Square df Asymp. Sig.	192 36.892 2 .000

This result is congruent with Sirin et al. (2021), who discovered that memorizing the Quran improves individual lexical ability (connecting the words) and semantics (linking the meaning), as well as verbal memory, visual memory, and attention ability (Sirin et al., 2021).

The findings of this study are congruent with those of Osborne (2016), who discovered that the sound of surah recitation corresponds to the meaning and sound pattern (i.e., rhyme) of the Quranic text. It is simple to obtain audio recordings of *Qari* recitations of the Quran (Osborne, 2016). This practice is congruent with al-Quran memorizing strategies that target the semantic memory system, i.e., attempting to comprehend the meaning of the verse textually or paratextually through *Qari's* distinctive style of *tarannum* (melodic recitation manner). Semantics, in general, is one of the most essential methods for understanding the meaning of words (Khani Moghaddam, 2022). However, emulating *Qari's* reciting manner without regard for understanding is included in the visual memory system.

Meanwhile, Saleem (2018) proposes four main features that support the memorizing process based on memory capacity: (a) immediate rote repetition without looking at the text; (b) immediate rote repetition without looking at the text; (c) delayed memory (ability to recall Quran verses at different times); and (d) repetition at different times based on the amount of memorized verses. Part of these memorizing characteristics (Saleem, 2018) is congruent with this study, which found that repetition is important for strengthening memorization. This is in line with Anwar (2019), which found that repetition is one of the most important techniques to consolidate existing memory and improve the quality of memorization.

However, the findings of this study disagree with those of Jaafar (2021), which discovered that children tend to use the visual memory system frequently, which increases perceptual abilities. Otherwise, this study discovered that the techniques for memorizing the Quran among MITS students commonly tend to be the semantic memory system, as opposed to visual and episodic. Black et al. (2020) suggest that Quran memorizers who did not understand Arabic had the same memorizing aptitude as those who did (Black et al., 2020). The semantic memory system incorporates the strategy of remembering the Quran by comprehending the meaning of this verse. Understanding the meaning of the Quran also leads to good manners, such as *tawadu'* (humble manner) among memorizers (Sarihat, 2019).

Working memory capacity is used to store learning memories in the form of STM throughout the process of memorizing the Quran. Working memory is the STM that is processed through comprehension and problem-solving, which is in line with semantic memory. Working memory of semantics can retain memory for a long time and link disparate pieces of information in memory (May & Einstein, 2013; Banikowski & Mehring, 2017).

Furthermore, memorizing the Quran is likely to have a large and favorable impact on an individual's STM function (Khan & Dzulkifli, 2021). However, Quran memorizers may employ images and other aspects of the text as a catch in memory to compensate for linguistic meaning. The memorized Quranic verses can be stored in LTM as a single massive entry or in smaller parts of memory containing non-semantic elements (Saleem & Umer, 2021). In summary, Quran-memorizing approaches that target the semantic memory system are likely to improve STM compared to LTM.

Meanwhile, Friedman et al. (2018) discovered that visual learning memory processes are predicted to allow sensory patterns to survive in LTM. However, it also prevents proactive memory storage, which requires new learning (Friedman et al., 2018). As a result, Quran memorizing strategies that rely heavily on visual memory systems should have a considerable "lag time" before the mind is ready to accept memory stimulation from new learning information. Nonetheless, when compared to the approach of memorizing the Quran that tends to visual and episodic memory systems, this study produced semantic memory at the highest frequency. The duration constraint to acquire fresh learning information is not intended to impair the approach of memorizing the Quran from this semantic memory system.

4.0 CONCLUSION

This study suggests that secondary school students of MITS Klang have a tendency towards the semantic memory system in memorizing the Quran compared to the visual and episodic memory systems. The tendency pattern of this semantic memory system is built through a technique that underlies the understanding of the meaning of memorized verses of the Quran. The strengthening of the pattern of the semantic memory system in memorizing the Quran is expected

to improve STM. Further investigation on particular aspects of the relationship between visual memory and LTM is recommended for future studies. The relationship then is predicted will reveal new potential strategies in consolidating memorization of the Quran.

There is a significant necessity to analyse institutional needs to construct an appropriate curriculum to conserve and develop a deeper grasp of the Quran (Nik Abdullah et al., 2021). The memorizers of the Quran are supposed to practice specific manners for improving memorization: purifying intentions (focussing on memorization objective), *talaqqi* (proofreading and memorization verification by the senior memorizers or teachers), *musyafahah* (face-to-face memorization repetition and proofread), and able to write the verses that have been memorized (Al Hafiz & Md Sawari, 2018). Further studies related to semantic methods in *hafazan* can be explored, perhaps through qualitative methods as well as a wider range of studies.

Acknowledgement

The authors wish to express gratitude to the Academy of Contemporary Islamic Studies, Universiti Teknologi MARA for technical support.

List of Reference

Al Hafiz, M. M., & Md Sawari, S. S. (2018). Managing standardize memorization strategy in tahfiz centres: A guideline for quality performance in Quranic memorization. *International Journal of Research, 5*(16), 1409-1417.

Al Hafiz, M. M., Yusof, M. F., Ghazali, M. A. I., & Sawari, S. S. M. (2016). Historiography of Quranic memorization from the early years of Islam until today. *Mediterranean Journal of Social Sciences, 7*(1 S1), 279-283. http://doi.org/10.5901/mjss.2016.v7n1s1p279

Aleixo, P. A., & Sumner, K. (2017). Memory for biopsychology material presented in comic book format. *Journal of Graphic Novels and Comics, 8*(1), 79-88. https://doi.org/10.1080/21504857.2016.1219957

Anwar, M. A. (2019). Revitalizing the method of repetition in the recitation of the Qur'an. *Istawa: Jurnal Pendidikan Islam, 4*(2), 156-167. http://doi.org/10.24269/ijpi.v4i2.1995

Aslan, A. (2022). Relevancy of research evidence with the success of al-Quran memorising: Young hafiz motivational approach. *Jurnal Ilmu Pendidikan Islam, 20*(1), 1-26. https://doi.org/10.36835/jipi.v20i1.3929

Baddeley, A. (2020). Short-term memory. In *Memory* (pp. 41-69). Routledge.

Banikowski, A. K., & Mehring, T. A. (2017). Strategies to enhance memory based on brain-research. *Focus on Exceptional Children, 32*(2), 1-16. https://doi.org/10.17161/foec.v32i2.6772

Basir, A., Muhdi, M., & Masitah, S. (2020). The repetition (*muraja'ah*) alternative method to motivate *santriwati* memorizing the Qur'an in Ma'had Tahfitdzul Quran Umar Bin Khattab-Banjarmasin. *Journal of Advanced Research in Dynamical and Control Systems, 12*(8), 376-388. https://doi.org/10.5373/JARDCS/V12I8/20202485

Benedek, M., & Fink, A. (2019). Toward a neurocognitive framework of creative cognition: The role of memory, attention, and cognitive control. *Current Opinion in Behavioral Sciences, 27*, 116-122. https://doi.org/10.1016/j.cobeha.2018.11.002

Black, R., Mushtaq, F., Baddeley, A., & Kapur, N. (2020). Does learning the Qur'an improve memory capacity? Practical and theoretical implications. *Memory, 28*(8), 1014-1023. https://doi.org/10.1080/09658211.2020.1811347

Chanquoy, L., Tricot, A., & Sweller, J. (2007). *La charge cognitive: Théorie et applications*. Paris: Armand Colin.

Colina, N., & Listiana, A. (2021, March). Al-Quran Based Learning in Early Childhood Education. In *5th International Conference on Early Childhood Education* (ICECE 2020) (pp. 19-22). Atlantis Press.

Fathur Rozi, M. A., Mufron, A., & Tufa, S. (2022). Pelaksanaan kaedah sabaq sabqi manzil dalam meningkatkan kualiti ingatan al-Quran. *Dimar: Jurnal Pendidikan Islam, 3*(2), 128-138.

Fauzan, A. S., & Mohamad, S. (2017). Kesan hafazan al-Quran dan hubungannya dengan pencapaian akademik pelajar. *Al-Turath Journal of Al-Quran and Al-Sunnah, 2*(2), 54-59.

Friedman, G. N., Johnson, L., & Williams, Z. M. (2018). Long-term visual memory and its role in learning suppression. *Frontiers in Psychology, 9*, 1896. https://doi.org/10.3389/fpsyg.2018.01896

Gent, B. (2011). The world of the British hifz class student: observations, findings and implications for education and further research. *British Journal of Religious Education,* 33(1), 3-15. https://doi.org/10.1080/01416200.2011.523516

Guo, Y. (2016). Cognitive analysis of long-term memory in interpreting. International *Journal of Language and Linguistics, 4*(3), 103-113. https://doi.org/10.11648/j.ijll.20160403.13

Hurriyati, E. A., Fitriana, E., Cahyadi, S., & Srisayekti, W. (2022). The predictive role of IQ, mood, emotional reactivity, and effortful control on working memory among *hafidz* Qur'an. *The Open Psychology Journal, 15*(1). http://doi.org/10.2174/18743501-v15-e2202210

Ishak, I., Rahman, S. A., Ibrahim, F. W., Khair, N. M., Warif, N. M. A., Harun, D., Ghazali, A.R., Ariffin, F., Din, N.C., Mohamad, S. Mohd Haneefa, M. S., Mastor, K. A., & Ismail, S. (2021). The impact of Quran memorization on psychological and health well-being. *Review of International Geographical Education Online, 11*(8), 337-344. https://doi.org/10.48047/rigeo.11.08.33

Jaafar, G. A. H. (2021). Development of visual perception skills in children. *Psychology and Education, 58*(3), 1546-1576. https://doi.org/10.17762/pae.v58i3.3888

James, W. (1890). *Principles of psychology*. New York: Holt.

Kensinger, E. A., & Ford, J. H. (2020). Retrieval of emotional events from memory. *Annual Review of Psychology, 71*, 251-272. https://doi.org/10.1146/annurev-psych-010419-051123

Khan, R., & Dzulkifli, M. A. (2021). Understanding *hifdh* and its effect on short-term memory recall performance: An experimental study on high school students in Saudi Arabia. *Indonesian Journal of Psychological Research, 2*(1), 12-21. https://doi.org/10.32505/inspira.v2i1.2934

Khani Moghaddam, M. (2022). Semantics of the word "Ihsan" in the Qur'an based on the relations of companionship, succession. *Stylistics Studies of the Holy Quran, 5*(2), 314-331. https://doi.org/1022034/sshq.2022.352325.1172

Kinukawa, T., Takeuchi, N., Sugiyama, S., Nishihara, M., Nishiwaki, K., & Inui, K. (2019). Properties of echoic memory revealed by auditory-evoked magnetic fields. *Scientific Reports, 9*(1), 1-8. https://doi.org/10.1038/s41598-019-48796-9

May, C., & Einstein, G. (2013). *MEMORY: A Five-Day Unit Lesson Plan for High School Psychology Teachers.* America: Teachers of Psychology in Secondary Schools (TOPSS) of the American Psychological Association.

Nik Abdullah, N. M. S. A., Abdullah, N. S., & Kama, N. (2021). The needs of huffaz Quran in learning Arabic language and the relationship between memorizing Quran and understanding Arabic language. *Al-Qanatir: International Journal of Islamic Studies, 23*(1), 113-125.

Osborne, L. E. (2016). Textual and Paratextual Meaning in the Recited Qurʾān: Analysis of Performance of Sūrat al-Furqān by Sheikh. In *Qur'anic Studies Today* , 240-258. Routledge.

Quilty-Dunn, J. (2020). Is iconic memory iconic?. *Philosophy and Phenomenological Research, 101*(3), 660-682. https://doi.org/10.1111/phpr.12625

Rahmatian, R., & Armiun, N. (2013). Cognitive strategies of encoding, storage, and retrieval of lexicon popular techniques applied by Iranian French language learners. *International Education Studies, 6*(8), 47-57. https://doi.org/10.5539/ies.v6n8p47

Revlin, R. (2013). *Cognition: Theory and practice*. New York: Worth Publishers.

Rohmad, M., & Fathah, U. A. (2022). Juz'i method: the technique of speeding up the memorization of the Quran at the Pondok Tahfidz Islamic Centre Bin Baz. *International Journal of Social Science and Human Research, 5*(9), 4083-4095. https://doi.org/10.47191/ijsshr/v5-i9-15

Saleem, A. (2018). Memorization without comprehension: A window onto the 'extremities' of the capability of human brain. *Al-Idah, 36*(1), 25-40.

Saleem, A., & Umer, M. (2021). Memory for text: the relationship between form and meaning. *Global Language Review, 6*(2), 24-29. https://doi.org/10.31703/glr.2021(VI-II).03

Sarihat, S. (2019). Sifat Tawâdhu' Ḥâfidz Al-Qur'an. *Jurnal Studia Insania, 6*(2), 158-172. https://doi.org/10.18592/jsi.v6i2.2212

Sawi, O. M., & Rueckl, J. (2019). Reading and the neurocognitive bases of statistical learning. *Scientific Studies of Reading, 23*(1), 8-23. https://doi.org/10.1080/10888438.2018.1457681

Shiffrin, R. M. (2018). Short-term store: The basis for a memory system. In *Cognitive theory* (pp. 193-218). Psychology Press.

Shukri, N. H. A., Nasir, M. K. M., & Razak, K. A. (2020). Educational strategies on memorizing the Quran: A review of literature. *Development, 9*(2), 632-648. https://doi.org/10.6007/IJARPED/v9-i2/7649

Sirin, S., Metin, B., & Tarhan, N. (2021). The effect of memorizing the Quran on cognitive functions. *The Journal of Neurobehavioral Sciences, 8*(1), 22-27. https://doi.org/10.4103/jnbs.jnbs_42_20

Sternberg, R. J. (1998). In *Search of the Human Mind* (2nd ed.). Orlando: Harcourt Brace & Co.

Suhandi, I. (2022, June 28). *JHQ-IAIN Pekalongan methods of maintaining the memory of the Quran of hafidz hafidhoh students*. https://doi.org/10.31219/osf.io/d6cyr

Tabibian, B., Upadhyay, U., De, A., Zarezade, A., Schölkopf, B., & Gomez-Rodriguez, M. (2019). Enhancing human learning via spaced repetition optimization. *Proceedings of the National Academy of Sciences, 116*(10), 3988-3993. https://doi.org/10.1073/pnas.1815156116

Wan, C., Cai, P., Wang, M., Qian, Y., Huang, W., & Chen, X. (2020). Artificial sensory memory. *Advanced Materials, 32*(15), 1902434. https://doi.org/10.1002/adma.201902434

Wang, Y. (2009). Formal description of the cognitive process of memorization. In *Transactions on Computational Science V*, 81-98. Springer, Berlin, Heidelberg.