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# QUR'ANIC MEMORISATION: EXPLORING COGNITIVE PROCESSES AMONG THE *HUFFAZ*

BY

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## ABSTRACT

Through a framework of cognitive psychology, this study explores the cognitive processes involved in memorising the Qur'an using the Information Processing Approach (IPA). This study adopts a qualitative case study design consisting of in-depth interviews with five (5) experienced *huffaz* (memorisers of the Qur'an). The responses revealed that sensory memory, Short-Term Memory (STM) and Long-Term Memory (LTM) processes are involved in memorising the Qur'an. During the sensory memory stage, participants highlighted the importance of teacher-student face-to-face encounter to ensure students achieved proficient Qur'anic recitation based on a recognized *sanad* (recitation style) before they start to memorise. This significant process is termed as *talaqqi-musyafahah* (face-to-face verbal instruction). Due to the fact that the Qur'an is *Kalamullah* (Speech of Allah), all participants pointed out that careful attention to details is critical. Participants emphasized the need to observe high levels of attention when transferring the information from sensory memory to STM. Data analysis revealed that at least ten (10) encoding strategies are used in the Qur'anic memorisation process which include: *takrir* (articulatory rehearsal process); *muraja'ah* (accumulative revision); chunking; complex sentences; writing and note taking; gradual testing strategy; visual imagery; pondering upon the meaning of the *ayah*; *tazkirah*; and self-reference effect. With regards to permanent retention of the Qur'an in the heart of the *huffaz*, the participants pointed out at least four (4) retention strategies are applied which include: *Istiqamah* (consistent in daily *muraja'ah* (revision)); *Istiqamah* in *'amal* (reflecting the Qur'an through behaviour – portraying the *Akhlaq* (moral character) of the Qur'an); teaching the Qur'an to others; and serving as an *Imam* (leader for congregational prayer). The participants emphasised that one's faith is the most significant factor for ensuring commitment to Qur'anic memorisation. This study attempted to initiate further investigation on this faith oriented memorisation tradition from a cognitive psychological perspective. This research is exploratory and there is a need for additional studies to establish the theoretical foundation of Qur'anic memorisation, particularly in the field of cognitive psychology.



تهدف هذه الدراسة إلى استكشاف العملية الإدراكية المستخدمة في حفظ القرآن الكريم من منظور علم النفس الإدراكي من خلال استخدام تقنية عملية جمع المعلومات (IPA). وقد تبنت هذه الدراسة المنهج النوعي عبر استخدام أسلوب تصميم دراسة الحالة. وأجرت الباحثة مقابلات معمقة مع خمسة حفظة للقرآن الكريم وهم من ذوى الخبرة في طرق حفظ القرآن. وقد أوضحت أجوبة المشاركين في الدراسة إلى أن الأساليب المتبعة في حفظ القرآن تتمثل في الذاكرة الحسية، والذاكرة قصيرة المدى (STM) والذاكرة بعيدة المدى (LTM). وأشار المشاركون إلى أهمية عملية تلقى بين المتعلم والمعلم وجهاً لوجه في مرحلة الذاكرة الحسية للتأكد من أن المتعلم قد اكتسب مهارة تلاوة القرآن في طرق التلاوة قبل شروعه في الحفظ. ويعرف هذا الإجراء المهم بالتلقى عن طريق المشافهة. وبما أن القرآن الكريم كلام الله، فقد أكد جميع المشاركين على أهمية الاعتناء بالتفاصيل والجزئيات عند قيامهم بنقل المعلومات من الذاكرة الحسية إلى الذاكرة قصيرة المدى. وتوصلت الدراسة إلى نتائج أساسية منها وجود عشرة إستراتيجيات على الأقل تستخدم في عملية حفظ القرآن الكريم، وتشمل كلاً من التكرار والمراجعة واستخدام فقرات ممنهجة ورصد الملاحظات والاختبار التدريجي والصور المرئية والتأمل في معاني الآيات والتذكر إلى التأثيرات الذاتية. أما بخصوص التقنية المستخدمة للاحتفاظ الدائم بها تم حفظه في قلب الحافظ، فقد أشار المشاركون إلى أربع استراتيجيات على الأقل، وتشمل كلاً من: التخلق بالقرآن والمراجعة الدائبة وتعليم القرآن للآخرين وإمامة الناس في الصلوات. وأكد المشاركون كذلك على أن العامل الأهم الذى يؤثر في التزامهم خلال عملية حفظ القرآن والحفاظ عليه هو إيمانهم به. وقد وعت نتائج الدراسة كذلك إلى ضرورة ربط ثقافة الحفظ بما توصل إليه علم النفس الإدراكي الحديث، وذلك يتطلب مزيد من الدراسات التي تبرز أوجه العلاقة بين طرق حفظ القرآن المعروفة وما توصل إليه علم النفس الإدراكي على وجه الخصوص.

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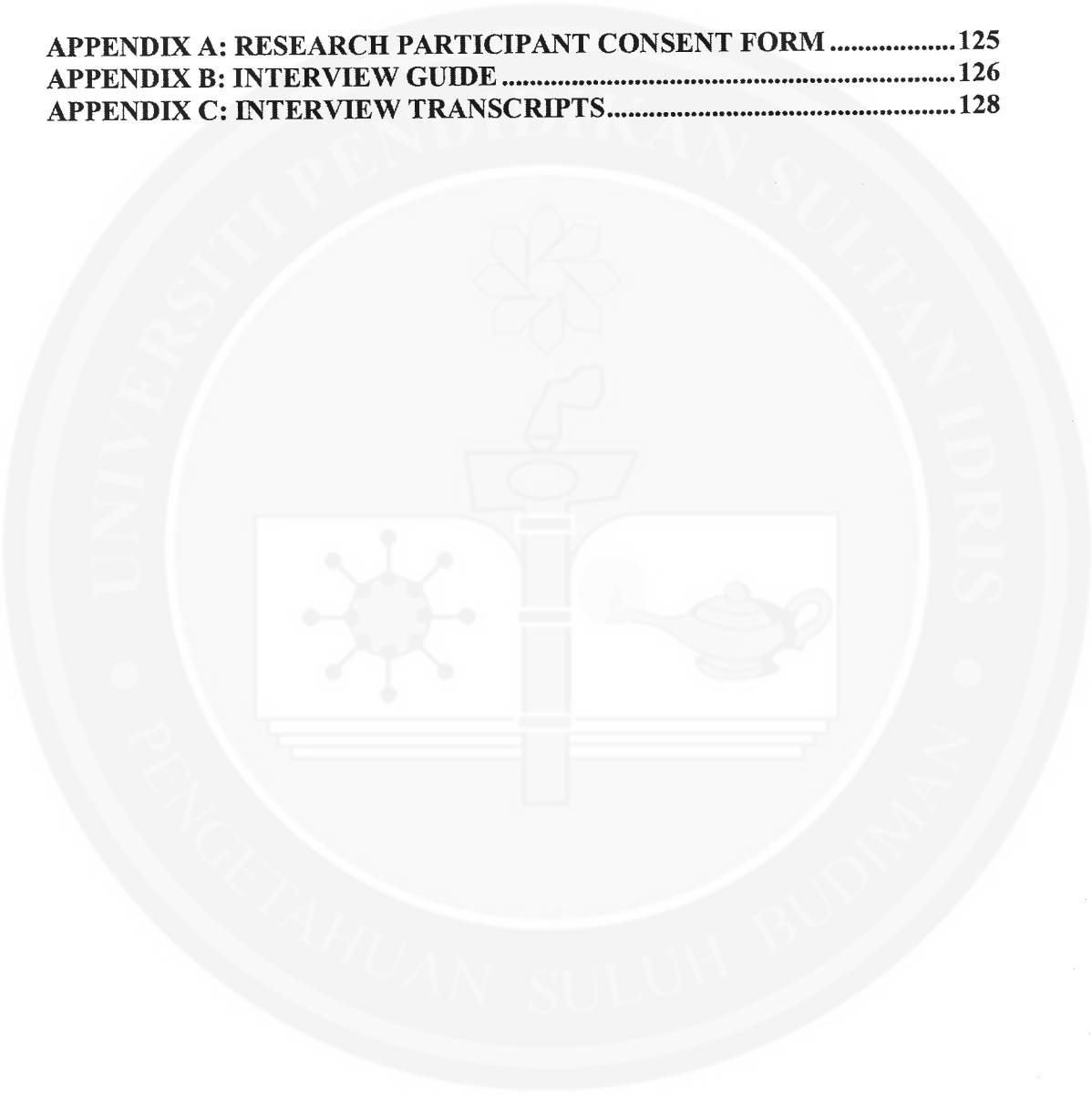
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## CHAPTER ONE

### INTRODUCTION

#### 1.1 BACKGROUND OF THE STUDY

Memorising the Qur'an is a commitment that expresses one's effort to please Allah because as Muslims, we believe that the Qur'an is the speech of Allah. In this, precision and accuracy in the articulation of the Qur'anic verses is compulsory.

According to Ingrid Mattson (2008):

"In reciting Al-Qur'an, the very words of God are reproduced in the throats of the reciters and perceived in the ears of listeners. With each articulation of Qur'anic phrase, the believer is recreating speech of a God who is as alive today as he has been forever. This is not a performance of historical speech but a rearticulation of the eternal words of the living God." (p. 82).

Therefore, precision and accuracy in articulating the words of God is demanded from the *huffaz*. The Qur'an states that God is closer to man "*than his jugular vein*" (5: 16).

The system of memorising the Qur'an started when Prophet Muhammad (p.b.u.h) received revelation from Allah through the archangel Jibril. An authentic *hadith* narrated by Said bin Jubair recorded the process of memorising the Qur'an from how Prophet Muhammad (p.b.u.h) received it to how he taught the companions to memorise it.

Ibn 'Abbas in the explanation of the Statement of Allah. 'Move not your tongue concerning (the Quran) to make haste therewith.' (75.16) Said "Allah's Apostle used to bear the revelation with great trouble and used to move his lips (quickly) with the Inspiration." Ibn 'Abbas moved his lips saying, "I am moving my lips in front of you as Allah's Apostle used to move his." Said moved his lips saying: "I am moving my lips, as I saw Ibn 'Abbas moving his." Ibn 'Abbas added, "So Allah revealed 'Move not your tongue concerning (the Qur'an) to make haste therewith. It is for us to collect it and to give you (O Muhammad) the ability to recite it (the Qur'an) (75.16-17) which means that Allah will make him

(the Prophet) remember the portion of the Qur'an which was revealed at that time by heart and recite it. The Statement of Allah: And 'When we have recited it to you (O Muhammad through Gabriel) then you follow its (Qur'an) recital' (75.18) means 'listen to it and be silent.' Then it is for Us (Allah) to make It clear to you' (75.19) means 'Then it is (for Allah) to make you recite it (and its meaning will be clear by itself through your tongue). Afterwards, Allah's Apostle used to listen to Gabriel whenever he came and after his departure he used to recite it as Gabriel had recited it." (SahihBukhari Volume 1, Book 1 No. 4)

The *hadith* cautions the prophet (p.b.u.h) not to attempt to commit the Qur'an to memory in haste and that Allah has promised to ensure that the Qur'an is firmly rooted in the memory, understanding, and practice of the prophet. Allah's directive to pay close attention to the manner in which Jibril recited the Qur'an by moving his tongue is an indication of the manner through which the Qur'an should be retained in memory. However, Allah reminds the prophet that it is only Allah who grants the proper understanding and memory of the Qur'an in the heart.

In the last part of the *hadith*, the prophet narrates that Allah instructed him to '*listen to it and be silent*' when Jibril recites the Qur'an to him, then Allah emphasized that the understanding of the meaning of the revelation is upon Him. After that, Prophet Muhammad (p.b.u.h) told the companion that he follows the same processes every time he memorises the Qur'an and his recitation to the companion was identical to the manner through which he received it from Jibril.

The *hadith* indicates that there are four principles involves in the process of memorising the Qur'an. First, memorisation cannot be rushed, and the Qur'an should be listened to with the utmost care and concentration as a means to grasp its meaning. The Qur'an instructor should also be awarded careful attention to ensure the correct recitation, as reflected in the careful attention showed by the prophet to the recitation of Jibril. Second, the ability to recite and memorise the Qur'an solely depends on the permission of Allah. This indicates that irrespective of effort,

memorising the Qur'an is a gift from Allah granted to whom He pleases. Third, the wisdom to understand the meaning of the Qur'an is a gift granted from Allah. Fourth, the prophet (p.b.u.h) declared that he has transmitted the Qur'an to the companions exactly as he received it from Jibril. These processes of memorising the Qur'an have been recorded in an authentic *hadith* and form the basis of systematic oral transmission of the Qur'an through memorisation from one generation of *huffaz* to the other.

Among the prominent models of memorising the Qur'an are the Saudi model (Muhammad YaseenAlfi, 2004), the Mauritanian model (Muhammad Yaseen Alfi, 2004), and the Turkish model (Abdul Hafiz & Norhanan, 2010). These models for Qur'anic memorisation are all based on the aforementioned *hadith*. The process of memorising the Qur'an stresses the effort to preserve the authenticity of the Qur'an as it passes through generations. The uniqueness of the process of memorising Qur'an is the underlying belief that succeeding to memorise the Qur'an does not solely depend on the memoriser's effort but more importantly on the permission of Allah. This fact is clearly indicated in the previously mentioned *hadith*. The reason being is that the Qur'an is not a normal book but a divine book consisting of revelations from Allah.

However, effort and commitment to memorise the Qur'an is essential. Therefore, in the process of memorising the Qur'an, *huffaz* use some techniques to help them to memorise better and to retain their memorisation. Muhammad Yaseen Alfi (2004) suggested the implementation of memorising strategies such as mnemonic techniques to memorise the Qur'an. Mnemonic techniques are among many strategies used to boost memorising performance suggested by empirical studies in the field of cognitive psychology. These strategies are tested effective means to improve memory. However, its efficacy depends on the type of information and how

it is processed (Goldstein, 2011). In order to appropriately implement memorising strategies based on cognitive psychological studies in the context of Qur'anic memorisation, it is important to understand the actual cognitive processes involved when *huffaz* memorise the Qur'an. In fact, the subject of human memory has been deliberately discussed in the field of cognitive psychology.

One of the most influential theories on memory is the Information Processing Approach (IPA) proposed by Atkinson & Shiffrin (1968). The IPA describes human cognition by analyzing it into a set of steps in which information is processed (Anderson, 2000). According to IPA principles, human memory can be explained as sequential stages. Each stage consists of a unique process of sorting incoming information. The eventual response is assumed to be the outcome of this series of stages and operations (e.g.; perception, coding of information, retrieval of information from memory, concept formation, decision and response (verbal or action). Each stage receives information from preceding stages and then performs its unique function. Since all components of the IPA are in some way related to each other, it is difficult to identify an initial stage, but for convenience we can think of the sequence as starting with incoming information.

As a religious oriented tradition, Qur'anic memorisation processes engage spiritual aspects that may not be discussed in the field of cognitive psychology. However, the fact that the memorising strategies used by *huffaz* in their effort to memorise the Qur'an can be explored thoroughly from cognitive psychological perspective is obviously acceptable. For this reason, this study seeks to explore the cognitive processes involved in memorising the Qur'an from cognitive psychology theoretical framework of IPA. At this explorative level, gaining information directly from participants with first-hand experience in memorising the entire Qur'an is

necessary for credible data. To achieve the purposes of the research, data was collected using a qualitative case study consisting of in-depth interviews with selected experienced *huffaz*.

## 1.2 STATEMENT OF THE PROBLEM

The uniqueness of the tradition of Qur'anic memorisation has attracted scholastic attention from various fields of study. This tradition has been studied from various perspectives with different research methodologies. However, there is lack of research that explores the process of memorising the Qur'an from the perspective of cognitive psychological.

A theologian, Anna Gade (2004), conducted an ethnographic study on the Qur'anic memorisation tradition in Sulawesi, Indonesia. Gade (2004) discussed the personal, emotional, and spiritual engagement involved in the process of memorising. Hence, to Muslims, the Qur'an is the source of all knowledge. Qur'anic education is the foundation of the Islamic education system. Educational studies on Qur'anic memorisation focus on the school system, the curriculum, and the teaching and learning process in Qur'anic schools (Abdul Hafiz, Ajmain, Mohd Ismail, Azhar, & Idris, 2003; Abdul Hafiz, Hussin, Azmi Shah, Sulaiman Shakib, Kamarul Azmi, 2005; Abdul Hafiz & Norhanan, 2010; Azmil, Abd. Halim & Misnan, 2013; Nazia Nawaz et al., n.d; Sedek, Mustaffa, Ishak, Khadher, Fauzi, Faisal, Mohd Yakub, Monika, Mohd Murshidi, Jilani, Ahmad, Selamat, & Mohd Roslan, 2013; Boyle, 2006; Moore, 2008; Gent, 2011; Berglund, 2010; Shalabi, 2011; Diallo, 2011).

Linguists applied the linguistic approach in an effort to improve Qur'anic memorisation practices (Muhammed Yaseen Alfi, 2004). Other linguistic study discussed the significance of Qur'anic memorisation to language acquisition,

linguistic creativity, and scholastic achievement (Mohammed A. Zaid, 2011). Moore (2008) studied the process of language socialization in Qur'anic schools according to the socio-linguistic perspective. Shalabi & Taylor (2011) studied the role of Qur'anic learning in the enculturation process among Muslim children. Zadshi, Stoki & Emamipour (2009) and Kimiaee, Khademien & Farhadi (2012) conducted quantitative studies on the psychological perspective of Qur'anic memorisation. Zadshi et al. (2009) investigated the psychosocial aspect of Qur'anic memorisation, whereas Kimiaee et al. (2012) investigated the level of mental health between the Qur'anic memorisers and non-memorisers. The following table (Table 1.1) summarises previous studies conducted on Qur'anic memorisation.

The analysis of previous studies, (Table 1.1) proves that the tradition of Qur'anic memorisation has been explored from various perspectives including theological, educational, linguistic, socio-cultural, and psychological perspectives. However, there is limited evidence that shows Qur'anic memorisation has been studied from a cognitive psychological perspective. Literature suggested that, there are several prominent Qur'anic memorisation models used in the process of memorising the Qur'an. The models highlighted memorising strategies used in the process of memorising the Qur'an are parallel to the memorising strategies discussed by the memory models discussed in the field of cognitive psychology. Human memory and the process of memorising have been systematically studied in the field of cognitive psychology. In this regard, IPA is a profound theory that discusses memorising processes from a cognitive psychological framework. As such, it is adopted as the theoretical framework for this research.

The present study explores the cognitive processes involved in memorising the Qur'an. It is an explorative study based on information collected directly from

participants with first-hand experience in memorising the Qur'an, which is an approach best suited to answer the research question(s). The nature of qualitative research allows the study of a given phenomenon directly from the participants with first-hand experience of the topic (Creswell, 2009). This quality of qualitative research methodology affects the current trend of psychological researches. Although much qualitative studies were done on Qur'anic memorisation (Gade, 2004; Boyle, 2006; Moore, 2008; Gent, 2011; Berglund, 2010; Shalabi, 2011; and Diallo, 2011), it is yet to be studied from a cognitive psychological theoretical framework. Therefore, this study is designed to use a qualitative case study method to fill this lacuna.



Table 1.1 Summary of the Analysis on Qur'anic Memorisation Studies

Study Perspective	Research Methodology	Focus of study	Author(s)
Theological Perspectives	Qualitative Study	The personal, emotional and spiritual engagement in the Qur'anic memorisation process	Gade (2004)
Educational Perspective	Quantitative Studies	The effectiveness of memorisation techniques	Abdul Hafiz et al. (2003); Abdul Hafiz et al. (2005); Abdul Hafiz et al. (2010)
		The relationship of teachers' background and teaching methodologies to students' memorisation	Azmil et al. (2013)
	Qualitative studies	The relationship of Qur'anic memorisation and students' academic performance	Nazia Nawaz et al. (n.d)
		Socio-cultural significance in Qur'anic schools system – Morocco	Boyle (2006)
		The significance of Qur'anic memorisation classes – British	Gent (2011)
Linguistic Perspective	Qualitative Studies	Socio-cultural view of the teaching and learning process in Qur'anic classes within Sweedish educational system	Berglund (2011)
		The significance of Qur'anic education in shaping the knowledge culture – PeulFuuta, Africa	Diallo (2011)
Socio-linguistic Perspective	Qualitative Study	The effectiveness of memorisation system adopted in Qur'anic school	Sedek et al. (2013)
		Applied linguistic approach to improve Qur'anic memorisation practices	MuhammedYaseen Alfi (2004)
Socio-cultural Perspective	Qualitative Study	The significance of Qur'anic memorisation on language acquisition, linguistic creativity and scholastic achievement	Mohammed A. Zaid (2011)
		The significance of Qur'anic schools in language socialization process	Moore (2008)
Psychosocial Perspective	Quantitative Studies	The influence of Qur'anic learning to Muslim children upbringing: Parents' perspective	Shalabi& Taylor (2011)
Mental health Perspective	Quantitative Studies	The relationship of Qur'anic memorisation to students' moral judgement and social development	Zadshi et al. (2009)
		The effect of Qur'anic memorisation on students' mental health	Kimiaee et al. (2012)
Neuroscience Perspective	Qualitative Content Analysis	Brain activities of learning reward system in Qur'anic memorisation context	Saat et al. (2011)



### 1.3. PURPOSE OF THE STUDY

This study explores the cognitive processes involved in Qur'anic memorisation from the cognitive psychological perspective using IPA as the theoretical framework.

### 1.4. RESEARCH QUESTIONS

The research central question of this study is:

What are the cognitive processes involved in memorising the Qur'an?

The central question formulated to understand the whole cognitive processes in memorising the Qur'an. In order to answer the central research question, there are important aspect in memorising process suggested by the theoretical framework and literatures. In reference to the IPA principles on the cognitive processes of memory, the encoding strategies used affect the retention of the information in the LTM. Therefore, it is critical to explore what are the encoding strategies used in the process of memorising the Qur'an. The following sub-question is formulated to understand the strategies used by *huffaz*.

What are the encoding strategies used in the process of memorising the Qur'an?

Literature suggests that one of the most significant aspects of Qur'anic memorisation is that permanent retention of the memorised Qur'an in the heart of the *huffaz* is compulsory. Therefore the second sub-question is formulated.

Having memorised the Qur'an, what are the retention strategies used by the *huffaz* to retain it?

## **1.5. SIGNIFICANCE OF THE STUDY**

### **1.5.1. Significance of the Study to the Body of Knowledge**

The tradition of Qur'anic memorisation has been studied from numerous perspectives, however, it has yet to be studied from the cognitive psychological perspective. This explorative study contributes in setting the foundation for further and deeper investigations on understanding the cognitive processes involved in memorising the Qur'an from a cognitive psychological framework. Therefore, this study contributes in initiating the effort to the development of a cognitive psychological framework on the tradition of Qur'anic memorisation.

### **1.5.2. The Practical Significance of the Study**

The tradition of Qur'anic memorisation constitutes an important component in ensuring the preservation of the Qur'an by ensuring the continuation of the chain of its transmissions across generations. The role of Qur'anic memorisation in preserving the authenticity of the Qur'an is beyond the verbal articulation of the verses. Memorising the Qur'an engages a deep thought processes that eventually shapes the individuality of the *huffaz*. Therefore, understanding the cognitive processes involved in memorising the Qur'an contributes in the implementation of appropriate memorising strategies especially in Qur'anic schools in order to produce high quality *huffaz*.

## **1.6. DEFINITION OF TERMS**

### **1.6.1. Cognitive Process**

*Conceptual Definition.* From the perspective of cognitive psychological, cognitive processes refer to the mental processes that explain how the human mind works.

Goldstein (2011) claimed that human mind controls the mental functions such as

perception, attention, memory, emotion, thinking, reasoning, and decision making (p. 5).

*Operational Definition.* In this study, the cognitive process involved in memorising the Qur'an is referred to as the theoretical framework proposed by Atkinson & Shiffrin (1968) which is known as the Information Processing Approach (IPA) on memory. In regard to the theoretical frameworks (IPA), the cognitive processes are explained in three (3) important stages; Sensory memory, Short-Term Memory (STM) and Long-Term Memory. The following is the elaboration of the three concepts of memory:

*Sensory Memory* - The sensory memory provides brief storage of information from the environment in its sensory form. We receive the environmental stimuli from all our five senses: visual, auditory, olfactory, taste and touch.

*STM* – *STM* is the system that is able to store small amount of information in a brief period of time. It is responsible to code information presented in sensory memory and chooses some to be transferred to LTM.

*LTM* - *LTM* is like an archive of information that we gain throughout our life. LTM has unlimited capacity of storage but the retrieval process of the information from LTM depends of how the information is encoded from the STM.

### **1.6.2. Memorisation**

*Conceptual Definition:* According to Goldstien (2011), memorisation is “the process involve in retaining, retrieving and using information about stimuli, images, events, ideas, and skills after the original information is no longer present” (p.116).

**Operational Definition:** This study focuses on memorisation in the context of the Qur'an. Qur'anic memorisation is the effort to retain the content of the Qur'an in the heart of the memoriser (*hafidz*). The word *hafidz* (in this context is the memoriser of the Qur'an), rooted from the Arabic term حفظ (*háfīḍa*) — يَحْفَظُ (*yaḥfaḍu*) (verb) refers to preserve, to conserve; to protect, to guard, to defend; to observe, to bear in mind, to comply; to be mindful, to be heedful; to keep up, to maintain, to sustain; to retain, to uphold; to hold, to have in safe-keeping, to take care; to keep, to store, to put away; to retain in memory, to remember, to know by heart; to memorise, to commit to memory; to reserve. Verbal noun: حفظ (*ḥifḍ*) preservation, maintenance, conservation, upholding; protection, defence, guarding; custody, safekeeping, storage; observance, compliance; memorisation, memorising, memory; discontinuance, stay, suspension. Therefore, in this study Qur'anic memorisation refers to the effort of memorising the Qur'an in the heart of the *huffaz* to preserve, to guard, to uphold, and to protect the authenticity of the Qur'an.

**Huffāz:** The singular form is *Hafidz* which literally means the guardian, protector, chaperon, conservator, keeper, maintainer, palladium, preserver, saving, tutelary, or warden. Technically it means the person who memorises the *Qur'ān* by heart (Baalbaki, 1968). Therefore in this study, the process of Qur'anic memorisation refers to the memorising process experienced by the *huffaz* who have successfully memorised the entire Qur'an.

### 1.6.3. Encoding Strategies

**Conceptual Definition of Encoding and Retrieval Processes.** Encoding process is the process of transferring the information in STM to LTM. On the other hand, retrieval

process is the opposite of encoding process. Retrieval process is the process of transferring the information in LTM back to STM (Goldstein, 2011). These two processes are equally important in order to understand the encoding strategies used in the memorising process. Craik & Lockhart's (1972) level of processing theory emphasized the process of interaction between STM and LTM. Successful retrieval of memorised information depends on the encoding strategies used in the process of transferring the information from STM to LTM (Goldstein, 2011).

*Operational Definition of Encoding Strategies.* Based on the understanding of encoding and retrieval process suggested by Goldstein (2011), the encoding strategies in this study refer to the strategies used by the *huffaz* in order to ensure stronger retention of the Qur'an in their hearts.

#### **1.6.4. Retention Strategies**

*Conceptual Definition.* Retention refers to an act of retaining (Oxford Dictionary).

*Operational Definition.* In the context of this study, retention refers to the ability of *huffaz* to retain their memorisation of the Qur'an permanently in their hearts. To the *huffaz*, retaining the Qur'an in their heart is a responsibility (Muhaimin Zen, 1985; Omar Mokti, 2011; Gent, 2011). Therefore, in this study retention strategies are defined as the efforts or strategies used by the *huffaz* in order to ensure the Qur'an is permanently retained in their hearts.

## CHAPTER TWO

# THEORETICAL FRAMEWORK AND LITERATURE REVIEW

### 2.1 INTRODUCTION

The objective of this study is to understand the cognitive process involved in Qur'anic memorisation from the cognitive psychological framework. This chapter discussed the theoretical framework and literature review of previous studies on Qur'anic memorisation. The organisation of the chapter is started with a discussion on the theoretical framework, and followed by the literature review and discussion on studies of Qur'anic memorisation. In this study, the cognitive processes on memory were based on the Information Processing Approach (IPA) theoretical framework. The literature reviews were gathered from journal articles, dissertations, books as well as reliable online materials. Studies conducted on Qur'anic memorisation could be categorized into quantitative studies and qualitative studies. Readings on previous literature review revealed that the process of Qur'anic memorisation has been studied from various perspectives which include, among others, socio-cultural, educational, and socio-linguistic perspectives. Nevertheless, there is very seldom, and almost rare to find studies that explore the process of Qur'anic memorisation from the cognitive psychological framework, and this study is considered among the very few in Malaysia to do so.

### 2.2 THE INFORMATION PROCESSING APPROACH (IPA) OF MEMORY

In the field of cognitive psychology, the subject of memory is discussed thoroughly with strong supporting evidences of empirical studies. One of the most significant theoretical frameworks on memory is IPA. Information Processing Approach (IPA)

attempts to describe human cognition by categorising it into a set of steps in which information is processed (Anderson, 2000). Solso (2000) indicated that IPA begins with a set of three assumptions as the following:

- Cognition can be understood by categorising it into a series of (mostly) sequential stages.
- At each stage, a unique process takes place on incoming information. The eventual response is assumed to be the outcome of this series of stages and operations (E.g. perception, coding of information, and retrieval of information from memory, concept formation, decision and response (verbal or action).
- Each stage receives information from preceding stages and then performs its unique function. Since all components of the IPA are in some way related to each other, it is difficult to identify an initial stage but for convenience, we can think of the sequence as starting with incoming information.

Theoretically, the IPA assumes that responses to complex tasks, such as concept, learning, reasoning, or planning, resulted from the execution of underlying strategies which in interaction with the problem materials; determine the sequence of specific information processing actions and decisions (Roberts & Newton, 2005). A primary focus of this approach is on memory (the storage and retrieval of information); a subject that has been of interest for thousands of years. Goldstien (2011) defined memory as “the process involved in retaining, retrieving and using information about stimuli, images, events, ideas, and skills after the original information is no longer present” (p.116).

### **2.2.1. The Information Processing Model (Atkinson & Shiffrin -1968)**

Information Processing Model (IPM) of Memory (Atkinson & Shiffrin, 1968) is also known as a model of memory because of its significant role in memory researches from 1960's to date. In addition, this memory model is synonymous to the phrase "boxes in the head" as it separates human information processing capabilities into three (3) different stages. As such, some scholars may prefer to call them the stage theory (Goldstein, 2011). In this theory, information is thought to be processed in a serial, discontinuous manner, as it moves from one stage to the next. The stages signify the structural features in the model which consist of Sensory Memory (SM); Short Term Memory (STM); and Long Term Memory (LTM). These stages differ in terms of their duration capacity on how much and how long information can be stored in each stage.

#### **2.2.1.1. Sensory Memory**

At this point, our senses are exposed to various environmental stimuli and acted as the initial medium that is responsible to transfer the information to our brain to be processed further. The sensory memory provides brief storage of information from the environment in its sensory form. We receive the environmental stimuli from all our five senses: visual, auditory, olfactory, taste and kinaesthetic. However, visual and auditory storages have been the most widely studied senses and in Sperling's experiment (1960), iconic (visual) and echoic (auditory) sensory memory have been shown to last only in a fraction of second.