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# Teacher Strategies to Improve Children's Learning Concentration in Qur'anic Memorization: A Cognitive and Self-Regulated Learning Perspective

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**Abstract**

Children's learning concentration is a critical determinant of success in Qur'anic memorization (*tahfiz*), yet limited research has examined the cognitive mechanisms underlying concentration in this unique educational context. This research investigates *tahfiz* teacher strategies for enhancing children's learning concentration from the perspective of cognitive psychology and Self-Regulated Learning (SRL) theory. Employing a qualitative, multi-site case study design, data were collected through in-depth interviews with *tahfiz* teachers (n = 8) at two institutions, participant observations over six months, and document analysis. Findings reveal four primary strategy domains: (1) attentional control strategies—including session segmentation, multisensory engagement, and environmental optimization; (2) working memory support strategies—including chunking, scaffolded repetition, and auditory–verbal rehearsal; (3) motivational regulation strategies—including intrinsic value cultivation, goal setting, progress monitoring, and social motivation; and (4) metacognitive development strategies—including self-monitoring training, reflective practice, and adaptive strategy use. The findings contribute to educational psychology by demonstrating how SRL principles operate in non-Western, memorization-based educational settings and by identifying practical, evidence-informed strategies for enhancing children's concentration during cognitively demanding tasks.

## INTRODUCTION

The ability to maintain focused attention during the learning process—commonly referred to as study concentration—is one of the most important cognitive prerequisites for academic success (Steinmayr et al., 2019; Rabiner et al., 2016). In cognitive psychology, concentration is understood as executive control over attention, i.e., the ability to selectively allocate processing resources to information relevant to a task while inhibiting competing distractions (Posner & Rothbart, 2007; Petersen & Posner, 2012). This cognitive function becomes especially important in educational tasks that require sustained effort, sequential processing, and long-term memory consolidation (Cotton & Ricker, 2022; Jiang et al., 2024).

Memorizing the Qur'an (*tahfiz*) is a unique learning context and places very high demands on children's attentional and memory systems. In contrast to conventional academic learning, which generally emphasizes comprehension and problem-solving, *tahfiz* requires verbatim retention as well as accurate oral reproduction of lengthy Arabic texts—often undertaken by children for whom Arabic is not a native language (Nawaz & Jahangir, 2015;

Azmil et al., 2020). This process requires sustained auditory attention, active verbal rehearsal, precise phonological processing, and extensive long-term encoding and retrieval—all cognitive functions that are still developmentally limited in childhood (Diamond, 2013; Best & Miller, 2010).

The cognitive demands in *tahfiz* are substantial. The Qur'an consists of approximately 6,236 verses across 114 surahs, totaling about 77,000 words in Classical Arabic (Boyle et al., 2020). Children enrolled in *tahfiz* programs typically aim to memorize most—if not all—of the text within two to six years. Daily memorization sessions generally last 2–3 hours, requiring a sustained level of concentration far beyond that typically expected in conventional educational environments (Mohamad et al., 2018).

Although *tahfiz* education is expanding globally and involves significant cognitive demands, research specifically examining the cognitive psychology of Qur'anic memorization remains limited (Nawaz & Jahangir, 2015). Existing studies have primarily focused on pedagogical methods, institutional management, or the religious-spiritual dimensions of *tahfiz*, while the underlying cognitive mechanisms and the specific strategies teachers use to support children's concentration and memory processes remain relatively underexplored (Azmil et al., 2020).

Self-Regulated Learning (SRL) theory provides a highly relevant theoretical framework for this research. The model developed by Zimmerman (2002) conceptualizes learning as a cyclical, self-directed process involving three main phases: forethought, performance, and self-reflection. Numerous studies have shown that SRL strategies consistently improve attention control and learning outcomes across various educational contexts (Dignath & Büttner, 2008; Baker, 2017). However, SRL research has largely been conducted within Western educational settings involving conventional academic tasks; thus, its application to non-Western contexts emphasizing intensive memorization remains underexplored.

Contemporary research on attention also provides additional theoretical grounding. The attention network theory proposed by Posner and Rothbart (2007) identifies three functionally and anatomically distinct networks: alerting (maintaining readiness for stimuli), orienting (selecting relevant information from sensory input), and executive control (resolving conflicts among competing responses).

Understanding how *tahfiz* teachers' strategies engage these attention networks can provide deeper insights into the cognitive mechanisms underlying improved concentration. Additionally, working memory research is highly relevant to the process of Qur'anic memorization. Baddeley's (2012) multicomponent model of working memory—comprising the central executive, phonological loop, visuospatial sketchpad, and episodic buffer—describes a cognitive architecture that enables the temporary storage and manipulation of information during learning. The phonological loop, which processes and maintains verbal-auditory information through rehearsal, is particularly relevant in *tahfiz*, where core activities involve oral recitation and auditory processing.

Previous studies on *tahfiz* education have primarily focused on teaching methods, curriculum development, and spiritual dimensions. For instance, Azmil et al. (2020) identified various pedagogical approaches used in *tahfiz* institutions, while Mohamad et al. (2018) emphasized the role of curriculum structure in supporting memorization outcomes. Additionally, Nawaz and Jahangir (2015) found that Qur'anic memorization may positively

influence broader academic achievement. However, these studies largely overlook the cognitive mechanisms underlying learning concentration and the specific strategies teachers use to regulate attention and memory processes in children.

Based on this background, this study formulates several research questions. First, what strategies are used by *tahfiz* teachers to enhance children's concentration during Qur'anic memorization? Second, how do these strategies align with cognitive psychology theories, particularly Self-Regulated Learning and attention research? Third, what cognitive mechanisms are activated through the implementation of these strategies? Finally, what are the practical implications of these findings for the development of evidence-based *tahfiz* education?

Based on this background, this study aims to identify and analyze the strategies used by *tahfiz* teachers to enhance children's learning concentration during Qur'anic memorization. Furthermore, it seeks to examine how these strategies align with cognitive psychology theories, particularly Self-Regulated Learning and attention theory, as well as to explore the cognitive mechanisms activated through their implementation. Ultimately, this study also aims to formulate practical, evidence-based implications that can contribute to the improvement and development of *tahfiz* education. This research contributes to the field of educational psychology in three main ways. First, it extends the application of SRL theory and attention research to non-Western educational contexts emphasizing intensive memorization. Second, it identifies empirically supported strategies for enhancing children's concentration in cognitively demanding learning tasks. Third, it offers practical implications for *tahfiz* educators seeking to optimize instructional methods based on principles of cognitive psychology.

## RESEARCH METHOD

This study used a multisite qualitative case study design as proposed by Robert K. Yin (2018), which was carried out in two children's *tahfiz* institutions in East Java, Indonesia. Data collection was carried out through semi-structured interviews with *tahfiz* teachers (n = 8), participatory observation for six months, and analysis of documents relevant to *tahfiz* learning activities.

Data analysis was carried out by following an interactive analysis model developed by Matthew B. Miles, A. Michael Huberman, and Johnny Saldaña (2014), which included the process of data reduction, data presentation, and continuous drawing and verification of conclusions during the study.

The validity of the data was maintained through several qualitative research validation techniques, namely triangulation of sources and methods, member checking, and in-depth involvement of researchers in the research field (prolonged engagement) as suggested by Yvonna S. Lincoln and Egon G. Guba (1985).

In this article, the data analysis was specifically focused on the cognitive and self-regulation dimensions of the strategies used by *tahfiz* teachers. The data encoding process uses an analytical framework developed based on the theory of Self-Regulated Learning (SRL) as well as research on attention control in cognitive psychology.

## RESULTS AND DISCUSSION

### Attentional Control Strategies

Session Segmentation and Pacing Teachers systematically arrange memorization sessions into several shorter segments according to the child's attention capacity. Teacher A explains:

*"A child can usually really focus for about 15 minutes. After that, their attention began to decline. So we memorize for 15 minutes, then take a 5-minute break—stretch, drink water, move for a while—and then come back again for a 15-minute murajaah session."*

This strategy is directly in line with research findings regarding the limitations of sustained attention in children (Betts et al., 2006).

Multi-Sensory Engagement Teachers engage multiple sensory channels simultaneously to improve the child's attention capture and maintenance. These strategies include:

1. visual involvement (following the text in the mushaf),
2. auditory processing (listening to the teacher's readings),
3. verbal production (reading or reciting verses by students),
4. kinesthetic involvement (pointing at words or moving the body slightly while reading),
5. and tactile involvement (touching the mushaf).

Teacher D explained:

*"The more senses involved, the stronger the child's concentration. When a child looks at the text, hears the reading, says the verse, and points with his finger, then all his attention will be focused."*

Teachers also carefully manage the physical learning environment to minimize attention distractions and create conditions that support concentration. These efforts include:

1. a quiet special room for memorizing,
2. consistent seating arrangements,
3. minimal wall decoration,
4. adequate lighting,
5. comfortable room temperature,
6. and get rid of electronic devices and toys.

Teacher B states:

*"Every element in the room has a purpose. The room should be quiet, clean, and free of anything that could distract the child from the Qur'an."*

Real-Time Attention Monitoring Teachers continuously monitor the child's attention condition through various behavioral indicators and immediately intervene when concentration begins to decline. Indicators observed include:

1. eye contact with the mushaf or teacher,
2. posture (standing up or starting to look down),
3. quality of reading (fluent or hesitant),
4. disturbing behavior,
5. and facial expressions.

Teacher F explained:

*"I continue to pay attention to each child. When I noticed signs of distraction—they started looking around, their posture dropped, or their readings flattened—I knew I had to act immediately. Sometimes a gentle touch on the shoulder is enough. Sometimes it is necessary to take a break or change activities."*

**Working Memory Support Strategies**

Chunking: Teachers divide the text of the Qur'an into small, more manageable parts, usually one verse or even a portion of a verse, which are adjusted to the child's working memory capacity.

Teacher C explains:

*"We never try to memorize too much at once. We memorize verse by verse, sometimes even half verse by half verse. Once the child has really mastered one small part, then we add the next part and connect it."*

Structured Repetition (Tikrar) Teachers use a systematic repetition pattern with a specific structure. Commonly used patterns include:

1. listening to the example reading from the teacher (3–5 times),
2. try to read with the teacher (5–10 times),
3. reading independently (10–20 times),
4. and murajaah from memorization several times.

Teacher G explained:

*"Repetition is the way information moves from short-term memory to long-term memory. But repetition should be structured, not random. We have a certain number of repetitions at each stage."*

Spaced Practice Instead of concentrating memorization in one long session, the teacher distributes the exercises to several sessions a day and performs murajaah regularly on the previous memorization.

Teacher A explains:

*"We memorize new verses in the morning when our minds are still fresh. In the afternoon we repeated yesterday's memorization. At night we repeat memorization for one week. This kind of repetition layer helps memorization become stronger."*

Auditory-Verbal Repetition Techniques Teachers use various recitation techniques to activate phonological loops, including:

1. Reading aloud (jahr),
2. A Slow Reading (Sirr),
3. tartil or rhythmic readings,
4. Bacaan ritmis,
5. as well as readings accompanied by body movements.

Teacher E explained:

"*Different reading styles activate the mind in different ways. A tune reading helps children remember the order of the verses because the melody is a clue to memory. Rhythmic readings help maintain tempo and attention."*

**Motivational Regulation Strategies**

Cultivating Intrinsic Values Teachers consistently instill personal, spiritual, and social values from memorizing the Qur'an to foster children's intrinsic motivation.

Teacher C says:

*"I often tell the story of the great hafiz and how the Qur'an raised their status in this world and the hereafter. When children understand their values, their motivation comes from within."*

Goal Setting and Visualization of Progress Teachers help children set specific and realistic memorization targets and display memorization progress through charts, cards, or digital recording systems.

Teacher A explains:

*"Every child has his or her own goals—how many verses this week, how many pages this month. When they hit the target, we celebrate. The progress graph in the classroom shows each child's memorization journey."*

Mastery-Oriented Feedback Teachers provide feedback that emphasizes individual effort and development, rather than comparisons between students.

Teacher D explained:

*"I never compare a child to his friend. I compare the child to himself. 'Last week you memorized 3 verses, this week 5 verses—that's tremendous progress.' It keeps them motivated."*

Social Motivation and Peer Teachers utilize social dynamics through paired learning activities, reading together, and peer-to-peer evaluation.

Teacher G explained:

*"Children really like to learn in pairs. They test each other's memorization, help with the difficult parts, and celebrate successes together. This social energy keeps them focused."*

**Metacognitive Development Strategies**

Self-Monitoring Training Teachers explicitly train children to recognize their own state of concentration and recognize when attention begins to decline.

Teacher B explains:

*"I teach children to be aware of their own thoughts. I asked: 'Are your thoughts here now or are they going anywhere?' They learn to examine themselves."*

Some children even develop personal signals, such as raising their hands when they feel they need a break.

Error Awareness and Self-Correction Teachers also train children to recognize errors in their own readings.

Teacher F explained:

*"I don't always immediately correct their readings. I let them read, and then I asked: 'Did you hear the inappropriate part?' Training their ears to find fault on their own helps develop metacognitive awareness."*

Teacher Learning Strategy Awareness helps children understand the reasons behind the learning strategies used.

Teacher C explains:

*"I explained why we repeat verses 20 times, why we memorize long periods before adding new ones, and why we need to rest. When they understand the reason, they start to be able to use the strategy themselves."*

Adaptive Strategies Selection Students are encouraged to try various memorization strategies and find the most effective method for them.

Teacher A explains:

*"Every child is different. Some are easier to memorize by listening, some by reading, some by writing. I help them find the way that works best for them."*

**Cognitive Psychology Analysis of Teacher Strategies**

The findings of the study show that *tahfiz* teachers, although generally lacking formal training in cognitive psychology, apply a variety of learning strategies that are significantly aligned with cognitive principles that have been established in the scientific literature.

Attentional control strategies: in harmony with the various dimensions in the theory of attention networks put forward by Michael I. Posner and Mary K. Rothbart. Segmentation of learning sessions functions to support the alerting network by maintaining an optimal level of preparedness through providing structured breaks. Multi-sensory engagement activates the orienting network by providing a variety of sensory channels that help attract attention. Optimization of the learning environment reduces the burden on the executive control network by eliminating stimuli that can interfere with concentration. Meanwhile, direct monitoring and intervention by teachers plays a role as a form of external executive control support that compensates for the child's internal executive control capacity which is still in the developmental stage (Diamond, 2013).

Working memory support strategies: also shows a strong compatibility with the working memory model developed by Alan Baddeley. The chunking technique overcomes the limitations of phonological store capacity by ensuring that each memorization unit is within the range of the child's working memory capacity. Structured repetition activates the process of articulatory rehearsal, which is the main mechanism for retaining information in a phonological loop. Spaced practice is consistent with various studies showing that exercise distribution is more effective than massed practice in improving long-term retention (Cepeda et al., 2006). In addition, various auditory-verbal repetition techniques systematically activate phonological loops through a variety of learning modalities.

Motivational regulation strategies: in line with the framework of Self-Determination Theory developed by Richard M. Ryan and Edward L. Deci, as well as the motivational component in the framework of Self-Regulated Learning formulated by Paul R. Pintrich. The cultivation of intrinsic value meets the basic psychological need for meaning and relatedness. Goal setting and progress visualization support the need for competency by providing clear benchmarks and visible evidence of achievement. Mastery-oriented feedback encourages an autonomous, growth-oriented motivational orientation. Meanwhile, social motivation takes advantage of the need for connectedness through interaction with peers.

Metacognitive development strategies: closely related to the phases of self-observation and self-reflection in the Self-Regulated Learning model proposed by Barry J. Zimmerman. Self-monitoring training develops self-observation skills that are essential for effective self-regulation. Awareness of mistakes and the ability to self-correct strengthen the capacity for self-evaluation. Awareness of learning strategies enhances metacognitive knowledge that allows students to choose strategies adaptively—a key characteristic of learners who have a high level of self-regulation (Zimmerman, 2002).

**Analysis Based on the Self-Regulated Learning Framework**

The mapping of teachers' strategies to the three-phase model of Self-Regulated Learning developed by Barry J. Zimmerman shows that there is a comprehensive alignment.

Forethought phase: Goal setting, learning intention formation, and strategy planning are evident in teachers' daily learning practices. Teachers help children set specific memorization targets (task analysis) and foster intrinsic motivation through emphasis on the spiritual and personal values of memorizing the Qur'an (self-motivation beliefs). Activities in this phase create cognitive and motivational conditions that support sustained study concentration.

Performance phase: Attention focus, multi-sensory engagement, repetition strategies, and direct monitoring are at the core of the implementation phase. In this context, teachers act as external regulators of the attention and use of children's learning strategies, which are gradually transferred to children as their self-regulation skills develop. This pattern is in line with the scaffolding approach in SRL development recommended by Perry et al. (2004).

Self-reflection phase: Progress evaluation, error analysis, and strategy selection activities adaptively reflect the self-reflection phase. Teachers create structured opportunities for children to evaluate the accuracy of their memorization, recognize patterns of errors, and adjust the learning strategies used. This reflective practice is known to strengthen the next learning cycle while developing self-regulation that is increasingly independent (Panadero, 2017).

**Contextual considerations**

Although the findings of this study show strong alignment with the Western cognitive psychology and SRL frameworks, there are several contextual aspects that need to be considered.

First, the spiritual dimension of motivation in *tahfiz* education operates differently than the motivational constructs commonly studied in educational psychology. Memorizing the Qur'an is understood by teachers and students as a form of worship that has a transcendental meaning. This results in forms of motivation that cannot be fully explained by frameworks such as self-determination theory or expectancy-value theory. This spiritual motivation appears to serve as a very powerful and sustained concentration booster, so the relationship between spiritual meaning and cognitive concentration is an important area for further research.

Second, the dominance of the oral-auditory aspect in *tahfiz* learning distinguishes it from most of the educational contexts studied in SRL research, which generally focus on reading, writing, or problem-solving activities. The emphasis on auditory processing and verbal production causes the phonological loop to bear a greater cognitive load, thus having implications for the design of learning strategies as well as the regulation of the learning environment.

Third, communal and relational contexts in *tahfiz* learning—which emphasize teacher-student relationships, peer support, and shared spiritual goals—create a social-motivational environment that is different from the individualistic learning context that SRL research is often the focus of. This communal dimension has the potential to provide a unique source of concentration support and is worthy of further empirical research.

**Practical Implications**

Based on the findings of this study, some practical recommendations for *tahfiz* educators can be formulated as follows:

1. Learning session design: Memorization sessions should be organized into focus segments of 15–20 minutes interspersed with break time, according to the child's ongoing attention capacity.
2. Multi-sensory approach: Teachers need to systematically engage visual, auditory, verbal, and kinesthetic channels to maximize attention capture and memory encoding processes.
3. Material grouping and scaffolding: New memorization materials need to be introduced in small units that correspond to the child's working memory capacity and are gradually linked to previous memorization.
4. Distance repetition: Memorization exercises should be distributed to several sessions a day, rather than focused on one long session, accompanied by regular repetition of previous memorization.
5. Metacognitive training: Teachers need to explicitly train children to monitor their own state of concentration, recognize effective strategies, and adjust learning approaches based on self-evaluation.

**Research Limitations and Future Research Directions**

The qualitative research design in this study provides an in-depth contextual understanding, but it has limitations in terms of statistical generalization. Therefore, further research can:

1. measure the concentration level quantitatively during the *tahfiz* session using objective instruments;
2. experimentally test the effectiveness of the learning strategies identified in this study;
3. examining variations in the development of concentration strategies in different age groups;
4. exploring the cognitive neuroscience aspects of the Qur'an memorization process through neuroimaging methods; and
5. Conduct cross-cultural comparative studies on *tahfiz* teaching strategies in different countries and educational institution contexts.

Motivational support Teachers need to foster intrinsic motivation through the provision of spiritual meaning, realistic goal setting, mastery-oriented feedback, and collaborative learning activities.

## CONCLUSION

This study investigates the strategies used by *tahfiz* teachers to enhance children's learning concentration during Qur'anic memorization through the lens of cognitive psychology and Self-Regulated Learning (SRL). The findings identify four key domains of strategy: attentional control, working memory support, motivational regulation, and metacognitive development, all of which align closely with established cognitive and SRL principles while also reflecting distinctive features of the Islamic educational context. The study extends SRL theory by demonstrating its applicability in non-Western, memorization-intensive learning environments and highlights spiritual motivation as a significant factor in improving concentration—an aspect not fully captured in existing motivational frameworks. Practically, these findings offer evidence-based guidance for *tahfiz* educators to optimize instructional practices and support children's cognitive development in Qur'anic memorization. Future research is recommended to empirically examine the causal impact of

these strategies through experimental or longitudinal designs and to further explore the integration of spiritual motivation within broader cognitive and educational psychology frameworks.

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