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Silent Epistemology in Tahfidz Learning: The Role of Napping in Memory Consolidation

Taufikin
Institut Agama Islam Negeri Kudus; Indonesia
Correspondence Email; taufikin@iainkudus.ac.id

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Abstract

Modern education still tends to view learning as a continuous conscious activity, thereby overlooking the role of the resting phase in the cognitive process. This study aims to reconstruct the meaning of napping in tahfidz learning as a philosophical phenomenon through the perspectives of ontology, epistemology, and axiology. The study was conducted at Madrasah Ibtidaiyyah Pesantren-Based through observations of 530 students and in-depth interviews with students, teachers, and religious leaders, using a qualitative approach grounded in philosophical-contextual analysis. The results indicate that napping serves as a rhythmic structure in learning, bridging phases of activity and consolidation. Students experience improved fluency in memorization, reduced errors, and enhanced clarity of thought after napping. These findings affirm that knowledge is formed not only through conscious processes but also through latent processes operating in silence. Furthermore, this practice contributes to emotional stability, psychological balance, and a more human-centered learning experience. The primary novelty of this study lies in the formulation of the concept of "silent epistemology" as a new paradigm in tahfidz education. Its implications point toward the reconstruction of learning designs that are more aligned with students' biological rhythms and spiritual needs.

Keywords

Nap, Memorization Education, Learning Rhythm, Memory Consolidation.

INTRODUCTION

In the contemporary global landscape of education, there is a strong tendency to view learning as an ongoing, active, intensive, and measurable activity (Antyukhova & Kasatkin, 2020, 2020; Ydesen & Andreasen, 2020). This paradigm has emerged alongside increasing demands for performance in modern education systems, which emphasize cognitive productivity and academic achievement as the primary indicators of success. However, this trend is beginning to be questioned in international discourse, particularly in relation to issues of well-being, mental health, and the sustainability of long-term learning. Recent studies indicate that educational systems that disregard human biological rhythms contribute to cognitive fatigue and a decline in learning quality (Klinzing et al., 2019; Paas & van Merriënboer, 2020). In this context, there is an urgent need to reconstruct our understanding of learning as a process that occurs not only during active consciousness but also during phases previously considered passive.

In the field of Islamic education, particularly Qur'anic memorization (tahfidz), this issue has become increasingly relevant. The activity of memorizing the Qur'an demands a high memory capacity, consistency, and emotional stability (Mustafa et al., 2021; Purbohadi et al., 2019; Sabki & Hardaker, 2019). The literature in this field generally focuses on memorization methods, review strategies (muraja'ah), and the role of the religious environment in supporting successful memorization. These studies tend to view learning as a conscious activity dependent on the intensity of practice and individual discipline. Consequently, researchers' primary focus remains on pedagogical techniques and motivational factors, while the biological and rhythmic dimensions of the learning process receive relatively little attention.

Several key studies have examined the relationship between sleep and learning from a neuroscience perspective. Walker (Jones, 2018), in his book "Why We Sleep", asserts that sleep plays a fundamental role in consolidating memory. This finding is supported by Rasch and Born (2013), who demonstrated that memory consolidation occurs significantly during sleep phases, particularly during the NREM stage. Research by Kurdziel et al. (2013) further shows that napping improves learning performance in school-aged children. Meanwhile, research by Klinzing et al. (2019) highlights systemic mechanisms in memory consolidation during sleep. Nevertheless, these studies have primarily operated within a laboratory experimental framework and have not been specifically linked to religion-based educational practices, particularly Qur'an memorization. Thus, existing studies predominantly examine the relationship between sleep and memory in a general context,

while paying limited attention to integrating these phenomena into Islamic education grounded in values and spirituality.

However, significant research gaps remain that have not yet been adequately addressed. First, empirical studies examining napping as an integral part of the tahfidz learning process remain very limited. Second, little is known about how the practice of napping can be interpreted within a philosophical framework of education, particularly from the perspectives of ontology, epistemology, and axiology. Third, previous research has not sufficiently addressed the integration of modern neuroscience findings with Islamic educational practices in the real-world context of educational institutions. Fourth, there has been no in-depth study exploring how the subjective experiences of students, teachers, and religious leaders shape their understanding of sleep as part of the learning process. Thus, this study not only fills an empirical gap but also offers a conceptual synthesis that has not been extensively developed.

Building on this gap, this study aims to analyze the practice of napping in tahfidz education as a philosophical phenomenon involving ontological, epistemological, and axiological dimensions. Specifically, this study seeks to answer the following questions: how is napping understood within the learning structure, how does it contribute to the formation of knowledge, and what values does this practice generate in the context of Islamic education. This study was conducted at Madrasah Ibtidaiyyah Tahfidzul Qur'an Raudlatul Falah Pati and involved observations of 530 students and in-depth interviews with students, teachers, and Kiai. A qualitative approach with philosophical-contextual analysis was employed to explore the meaning behind a practice that appears simple yet has profound implications.

The contributions of this study lie in several key aspects. Theoretically, this study introduces the concept of "silent epistemology" as a new framework for understanding the learning process, emphasizing that knowledge is formed not only through conscious activities but also through subconscious mechanisms that occur in silence. Empirically, this study presents contextual data from tahfidz educational institutions, which have rarely been explored in the international literature. Methodologically, this study integrates a philosophical approach with field data, resulting in an analysis that is not only reflective but also grounded in real-world experience. Socially, this study offers practical implications for developing educational models that are more humane, balanced, and aligned with learners' biological and spiritual rhythms. Thus, this study not only expands academic horizons but also offers a new direction for future educational practices.

METHOD

This study employs a qualitative approach using an exploratory case study design to gain an in-depth understanding of the philosophical significance of napping in tahfidz education (Creswell & Creswell, 2022; de Vries, 2020). This approach was chosen because it allows the researcher to capture the complexity of learning experiences that cannot be reduced to mere numbers. The research was conducted at a pesantren-based Madrasah Ibtidaiyyah Tahfidzul Qur'an (MITQ), namely Pondok Pesantren Anak-anak Tahfidzul Qur'an Raudlatul Falah Pati. This institution consistently integrates napping into its learning system. This context provides a rich empirical space for examining the relationship between biological rhythms, cognitive processes, and spiritual dimensions in education.

Data were collected through observations of 530 students and in-depth interviews with 12 boarding school students (S-01–S-12), 5 teachers (G-01–G-05), and 1 religious leader (KH-01), who were selected through purposive sampling based on the relevance of their experiences. Data collection was conducted through participatory observation, semi-structured interviews, and document analysis over 3 months (Bowen, 2009; Knott et al., 2022; Kvale & Brinkmann, 2009; Walsh, 2020). Data analysis employed a thematic analysis approach involving coding, categorization, and interpretation, which was then linked to the theoretical framework of memory consolidation and biological rhythms to yield a more comprehensive understanding (Braun & Clarke, 2006, 2019; Thompson, 2022).

The validity of the research was ensured through source triangulation, participant checking, and systematic documentation of the research process to ensure the credibility and consistency of the findings (Denzin, 2012; Santos et al., 2020). All research procedures were conducted in accordance with ethical principles, including obtaining participant consent and protecting participant anonymity. Although this study has limitations in generalizability and the potential for interpretive subjectivity, the approach used provides depth of analysis, allowing for a more comprehensive contextual understanding of the phenomenon under study.

FINDINGS AND DISCUSSION

Findings

Napping as a Rhythmic Structure in the Learning Process

The first finding indicates that napping is not viewed as an additional activity, but rather as an inherent part of the students' daily learning structure. Observations reveal a consistent pattern: intensive memorization before sleep, a rest phase, and review after waking. This pattern forms a learning cycle that is not linear, but rhythmic. Students not only learn while awake, but also undergo a consolidation process that indirectly reinforces memorization.

Table 1. Rhythmic Learning Patterns Based on Napping

Informant	Emerging Theme	Interview Excerpt	Frequency	Interpretation
S-03	Memory reinforcement	"After sleeping, the verses that were difficult become more fluent."	High	Sleep strengthens retention
S-08	Improved focus	"After waking up, it feels lighter to continue memorization."	High	Cognitive restoration
G-02	Systematic pattern	"We intentionally conduct recitation before sleep, then repeat it after waking."	Consistent	Rhythmic pedagogical structure
G-05	Learning stability	"Children are more emotionally stable after sleep."	High	Emotional regulation
KH-01	Philosophy of rhythm	"Learning has its moments of movement and stillness."	Reflective	Ontology of rhythmic learning

Source: Primary Data Analysis by the Researcher

The findings in Table 1 show that napping is a key factor in establishing a stable, sustainable learning rhythm. Interview data reveal consistent experiences among students who reported improved fluency in memorization after sleeping, as expressed by S-03, as well as increased cognitive focus, as experienced by S-08. At the same time, the teachers' perspectives (G-02 and G-05) confirm that this practice is not coincidental but rather part of a deliberately designed pedagogical framework: memorization is done before sleep and then reinforced upon waking. This combination produces a learning pattern that is not merely intensive but also rhythmically structured. Even at a reflective level, KH-01 situates this practice within a philosophical framework that views learning not only as an activity but also as a making of space for periods of stillness.

More broadly, these findings suggest that napping serves as a balancing mechanism in the

learning process, both cognitively and emotionally. The high frequency of findings related to retention, focus, and emotional stability indicates that sleep is not merely a break, but an integral part of the process of internalizing knowledge. This reinforces the idea that memorization learning operates in a cyclical pattern: encoding before sleep, consolidation during sleep, and reactivation upon waking. Thus, learning is no longer understood as a continuous linear process, but as a dynamic cycle aligned with human biological rhythms, in which the rest phase actually plays an active role in strengthening the quality of learning.

Napping as an Epistemological Mechanism in Knowledge Formation

The second finding reveals that napping functions as an epistemological mechanism that broadens our understanding of how knowledge is formed. The students consistently reported an improvement in the quality of their memorization after sleeping, in terms of fluency, accuracy, and long-term memory. This phenomenon suggests that the learning process does not cease when conscious activity stops.

Table 2. Knowledge Formation Mechanisms through Sleep

Informant	Emerging Theme	Interview Excerpt	Frequency	Interpretation
S-01	Strong memory	"The verses seem to stick on their own after sleep."	High	Memory consolidation
S-06	Error reduction	"Memorization errors decrease after waking up."	High	Cognitive reorganization
S-11	Clarity	"After waking up, it is easier to recall."	High	Memory reactivation
G-03	Quality improvement	"Memorization after sleep is more structured and sequential."	Consistent	Memory stabilization
KH-01	Meaning of learning	"Sometimes learning occurs when we are in stillness."	Reflective	Non-conscious epistemology

Source: Primary data analysis by the researcher

The findings in Table 2 show that napping functions as an epistemological mechanism that tangibly shapes the quality of the students' knowledge. Statement S-01 regarding memorization that "sticks on its own" indicates a memory consolidation process occurring without conscious intervention. At the same time, the experiences of S-06 and S-11 confirm that sleep reduces errors

while enhancing cognitive clarity. This perspective is reinforced by G-03, who observed that the quality of memorization became more organized and structured after sleep. Furthermore, KH-01's reflection underscores the philosophical dimension that learning does not always occur during conscious activities but also during the quiet phases that are often overlooked. This pattern demonstrates the consistency that sleep is not merely a pause but an invisible cognitive workspace.

Conceptually, these data suggest that knowledge formation occurs through a dual process: conscious activity as the initial phase of recognition, and the sleep phase as a space for memory consolidation and reorganization. The high frequency of findings regarding reinforcement, error reduction, and clarity indicates that sleep functions as a medium for stabilizing previously acquired knowledge. Thus, the epistemology of learning can no longer be limited to conscious activity alone, but must be understood as an integration of consciousness and unconsciousness. In this context, napping becomes a crucial point of connection between these two dimensions, so that knowledge is not merely memorized but also settled, reorganized, and reinforced within the structure of long-term memory.

Napping as an Axiological Practice: Restorative Education

The third finding highlights the value-based dimension of the napping practice. Napping not only affects cognitive functioning but also significantly contributes to students' emotional and spiritual well-being. Observations indicate that students who consistently participate in the napping program tend to be calmer, less prone to fatigue, and more motivated to learn.

Table 3. Axiological Values in Napping Practices

Informant	Emerging Theme	Interview Excerpt	Frequency	Interpretation
S-04	Calmness	"After sleeping, the heart feels more at ease."	High	Emotional regulation
S-09	Learning motivation	"After waking up, I feel more motivated to memorize."	High	Intrinsic motivation
G-01	Positive behavior	"Children become more patient and less easily angered."	Consistent	Psychological stability
G-04	Balance	"Learning is not continuously forced."	High	Humanistic education
KH-01	Philosophical value	"The body also has the right to rest."	Reflective	Ethics of education

Source: Primary data analysis by the researcher

The findings in Table 3 indicate that napping not only impacts cognitive aspects but also holds strong axiological value in the practice of tahfidz education. Statements S-04 and S-09 suggest that napping directly contributes to inner calm and increased motivation to learn, both of which are essential foundations for the sustainability of the memorization process. This is reinforced by teacher G-01's observations of a change in the students' behavior toward greater patience and reduced reactivity, and by teacher G-04's affirmation that the learning rhythm became more balanced and less forced. At the reflective level, KH-01 situated this practice within the framework of educational ethics, asserting that the body has a right to rest and that the learning process must consider the human dimension in its entirety.

More broadly, this data shows that napping serves as a restorative mechanism that maintains a balance between cognitive, emotional, and spiritual aspects. The high frequency of findings on indicators of calmness, motivation, and psychological stability suggests that effective learning depends not only on break duration but also on their quality. Thus, the practice of napping shifts the orientation of education from merely achieving results toward a more humanistic and sustainable process. In this context, learning is no longer understood as an activity that must be forced continuously, but rather as a journey in harmony with the body and soul, resulting in a more holistic and meaningful learning experience.

Formulation of Silent Epistemology as a Learning Model

Based on these three main findings, this study develops a conceptual synthesis referred to as silent epistemology. This concept emerges from the integration of empirical data indicating that learning occurs not only in conscious activities but also in productive silence. This synthesis is constructed through an inductive process by integrating ontological, epistemological, and axiological dimensions.

Table 4. Silent Epistemology Model in Tahfidz Education

Dimension	Empirical Findings	Theoretical Concept	Position of Findings
Ontology	Learning is rhythmic	Circadian rhythm	Structure of learning
Epistemology	Knowledge is formed during sleep	Memory consolidation	Learning mechanism
Axiology	Education restores the human self	Humanistic education	Educational values
Synthesis	Learning in silence	Silent epistemology	Proposed new model

Source: Synthesis by the researcher

The findings in Table 4 show that silent epistemology arises from a synthesis that is not partial but rather integrative, encompassing ontological, epistemological, and axiological

dimensions. At the ontological level, the data confirm that learning does not proceed linearly but follows a rhythmic pattern aligned with human biological rhythms. Memorization, sleep breaks, and review form a complete cycle. Within this framework, learning is no longer understood as an accumulation of activities, but as a dynamic movement between intensity and stillness. The role of napping becomes crucial because it is not merely a break, but an integral part of the learning structure itself.

From an epistemological perspective, this synthesis demonstrates that knowledge is constructed not only through active consciousness but also through latent processes that occur during sleep. Empirical findings regarding improved memory retention after sleep reinforce the notion that the resting phase actually serves as a productive cognitive workspace. In this context, sleep serves as a mechanism for memory consolidation and reorganization, in which previously acquired information is not only stored but also restructured into a more stable, organized form. Thus, the epistemology of learning expands from one originally centered on conscious activity to an integration of the conscious and unconscious.

Meanwhile, from an axiological perspective, this model demonstrates that napping fosters a more humanistic educational value. Data indicate that students' emotional balance, psychological stability, and motivation to learn improve when the learning process is not forced continuously. This underscores that effective education is not merely about achieving academic outcomes but also about restoring and maintaining the balance of the human being as the subject of learning. Thus, napping serves not only as a pedagogical strategy but also as an ethical practice that restores the rights of the body and soul within the educational process.

Overall, these three dimensions converge within a single conceptual framework, the epistemology of silence. This model asserts that silence is not an absence, but rather a productive space for the formation of knowledge. Napping, in this context, serves as the intersection of biological rhythms, cognitive mechanisms, and human values. Thus, the epistemology of silence offers a new paradigm in tahfidz education. This approach not only emphasizes activity but also gives meaning to pauses as an integral part of the learning process. This model simultaneously serves as a critique of the modern educational paradigm, which tends to be linear and exploitative, and opens space for learning designs that are more in harmony with human nature.

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Discussion

The findings of this study reveal a pattern that is not only intriguing but also challenges the fundamental assumptions of modern education. Napping, which has long been viewed as a biological break, emerges in the context of tahfidz education as a structural component of the learning process. It is not a "break from learning," but rather "another phase of learning itself." Empirically, the data reveal three key points: learning is rhythmic in nature, knowledge is formed not only in consciousness, and education that allows for pauses fosters greater emotional stability. These findings do not stand alone but demand a reinterpretation of how we understand learning ontologically, epistemologically, and axiologically.

Ontologically, these findings confirm that learning cannot be understood as a continuous, linear activity. The patterns observed at MITQ Raudlatul Falah indicate that memorization quality is optimal when integrated with rest periods. This aligns with the concept of the circadian rhythm, which explains that human cognitive performance follows unstable biological fluctuations throughout the day (Blatter & Cajochen, 2007; Heathcote, 2016; Klinzing et al., 2019; Reid et al., 2011). However, this study goes a step further. While previous studies merely treated rhythm as a supporting factor, these findings suggest that rhythm is the fundamental structure of learning itself. In other words, learning is not merely an activity, but an existential pattern that moves between the conscious and the unconscious.

Epistemologically, these findings expand our understanding of how knowledge is formed. The neuroscience literature has long established that sleep plays a crucial role in memory consolidation (Jones, 2018; Rasch & Born, 2013). However, most of these studies stop at mechanistic explanations. This article highlights a subtler dimension: that cognitive processes during sleep involve not only memory consolidation but also the reorganization of meaning. Field data indicate that students not only remember better but also experience mental clarity after sleeping. This suggests that sleep functions as an epistemic space—a space where knowledge is "cooked" quietly.

In this context, the findings of this study align with those of (Kurdziel et al., 2013), which demonstrated that napping improves learning performance in children (Esterline & Gómez, 2021; Horváth et al., 2015; Lokhandwala & Spencer, 2021). However, this study enriches those findings by incorporating the dimension of subjective experience. The students not only experienced cognitive improvement but also felt a change in how they related to memorization. This is a key point: knowledge is not only reinforced but also "deepened."

In comparison with the educational literature, these findings also expand the scope of Cognitive Load Theory (Paas & van Merriënboer, 2020; Sweller, 2011). This theory emphasizes the importance of managing cognitive load to prevent overload (Martin & Evans, 2019). However, this study suggests that the solution lies not only in reducing the load but also in allowing the cognitive system to naturally consolidate information. Thus, napping is not merely a load-management strategy but part of the knowledge-production mechanism.

From an axiological perspective, these findings highlight a dimension often overlooked in modern education: human well-being. The data indicate that students participating in the nap program exhibit greater emotional stability, sustained motivation, and healthier learning relationships. This aligns with emotion regulation approaches that emphasize the importance of affective balance in the learning process (Cea, 2023; A. Gross et al., 2015; J. J. Gross & John, 2003; Naude et al., 2014). However, what is interesting is that this practice was not designed as a psychological intervention, but rather as part of a daily routine. This is where its strength lies: educational value arises not from complex designs, but from alignment with human nature.

Compared with previous research, most studies remain fragmented. Neuroscience studies focus on memory, educational studies focus on methods, and psychological studies focus on emotions. This research attempts to weave all three together into a single, cohesive framework. This is where the primary novelty begins to emerge.

This research introduces a new conceptual construct, Silent Epistemology. This concept is not merely a term, but a framework of thought that positions silence as an active part of the learning process. While classical epistemology emphasizes reason and conscious experience, silent epistemology adds the unconscious as a source of knowledge. It is based on three fundamental assumptions: (1) learning is rhythmic, (2) knowledge is formed through the integration of the conscious and the unconscious, and (3) silence is a productive space, not a void.

Schematically, this model can be depicted as follows. The Silent Epistemology Model:

- Phase 1: Conscious activity (memorization encoding)
- Phase 2: Silence (sleep-based consolidation)
- Phase 3: Reactivation (recall and review)
- Output: More stable, deeper, and internalized knowledge

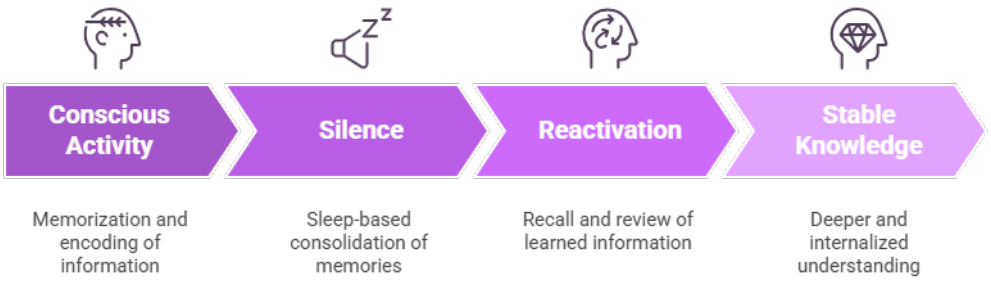

Figure 1. Silent Epistemology Model

As shown in Figure 1, this model illustrates that learning is not a linear process but rather a recurring cycle. Within this cycle, silence holds an equal position to activity. The theoretical contribution of this study lies in its integration of neuroscience, Islamic education, and the philosophy of education into a single conceptual framework. It does not merely add new variables but transforms the way we perceive those variables themselves. Sleep is no longer positioned as an external variable but as an internal component of the learning process.

The implications of this research are quite broad. First, curriculum design needs to consider biological rhythms as a primary factor, not an additional one. Second, educational institutions—particularly tahfidz schools—can optimize memorization quality not by increasing study time, but by regulating the learning cycle. Third, this approach opens the door to a more humanistic education, where the body and soul are not forced to work beyond their limits.

However, this study is not without limitations. First, the case study design limits the generalizability of the findings to broader contexts. Second, the qualitative approach relies on interpretation, so the potential for subjectivity remains. Third, this study has not quantitatively measured the extent of memory improvement.

Therefore, future research should adopt a mixed-methods approach to test the silent epistemology model more broadly. Controlled experiments could be conducted to compare groups with and without a nap intervention. Additionally, longitudinal studies are needed to examine the long-term effects on memory quality and cognitive development. This study not only adds new insights but also shifts our understanding of learning. It invites us to recognize that, in silence, something very active is at work. That learning does not always have to be visible, but must be felt at a depth that is not always apparent on the surface.

CONCLUSION

This study highlights a fundamental shift: napping is not merely a biological break, but an inherent part of the learning architecture in tahfidz education. The findings indicate that the learning process operates in rhythmic patternsalternating between conscious activity and productive silence. From this emerges the conceptual framework of the epistemology of silence, a new perspective that positions silence as an active medium in the formation of knowledge. Within this framework, memorization is not only built through conscious efforts such as recitation and review, but also through a consolidation process that occurs while the body rests. The primary novelty of this research lies in its success in weaving three dimensions, a rhythmic ontology of learning, an epistemology that transcends consciousness, and an axiology that restores humanity, into a single, cohesive conceptual model. Thus, this research not only corrects old assumptions about learning but also offers an alternative paradigm that is more in harmony with human biological and spiritual nature.

The implications of these findings are far-reaching and strategic. In practical terms, educational institutions, particularly those focused on Quran memorization, need to redesign their learning approaches by treating biological rhythms as a foundational element, rather than merely an afterthought. Theoretically, this study enriches the body of educational knowledge by expanding the definition of knowledge as the result of the integration between conscious activities and latent processes. This contribution situates simple practices such as napping in a more meaningful place within global educational discourse. However, this study has limitations in its case study design and has not yet quantitatively tested causal relationships. Therefore, future research should develop mixed-methods or experimental approaches to test the validity of this model in broader contexts, including longitudinal explorations of its impact on memorization quality and cognitive development. Thus, this study not only fills a knowledge gap but also opens new pathways for more integrative and in-depth research in the future.

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