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Neuroeducational Model in Learning Tahfizh Al-Qur'an: Strengthening Spiritual Literacy in the Era of Digital Disruption

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Abstract

This research develops the Neuroeducation-Based *Tahfizh* Learning Model (MP-TBN) to strengthen students' spiritual literacy in the digital era. The model seeks to balance rote memorization with the internalization of Qur'anic values. Employing a Research and Development (R&D) method through the ADDIE framework, the study involved 25 students at *Tahfizh* Ibadurrahman House, Jambi. Data were collected using observations, interviews, and affective-spiritual questionnaires, then analyzed with qualitative-thematic and quantitative-descriptive approaches. The results show that MP-TBN is built on four pillars: Brain-Based Memorization Strategy (BBMS), Digital *Tahfizh* Tracker (DTT), *Ruhaniyah-Based Reflection* (RBR), and Daily *Neuro-Murojaah Habit* (DNMH). Expert validation confirmed its feasibility, and field trials demonstrated notable improvements: memorization increased from 3.2 to 4.6 juz, reflection from 2.9 to 4.3, focus from 3.1 to 4.5, and spiritual depth from 3.0 to 4.5. Moreover, 90% of participants expressed satisfaction with the model. In conclusion, MP-TBN integrates cognitive, affective, and spiritual dimensions, providing a holistic approach relevant to *Tahfizh* institutions in addressing contemporary Islamic educational challenges.

Keywords

Brain-Based Learning; Digital Tools; Neuroeducatio; Qur'anic Memorization; Spiritual Reflection

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1. INTRODUCTION

The learning of *Tahfizh* Al-Qur'an is one of the important pillars in Islamic education, which aims not only to maintain the authenticity of the Qur'an through memorization, but also to foster spiritual closeness and the practice of its values in daily life. However, the reality in the field shows that the *Tahfizh* process is often still oriented to the technical aspects of memorization alone, so that students can remember the verses but lack understanding of the meaning and fail to internalize the spiritual value behind them. This condition causes *Tahfizh* learning to be prone to boredom, weak motivation, and reduced spiritual awareness (Abdussyukur, 2022).

The era of digital disruption has shifted the paradigm of Islamic education, including the learning

of *Tahfizh* Al-Qur'an, from a value- and character-oriented approach to a pattern that tends to emphasize technical efficiency and knowledge reproduction (Rokhim, 2021). The challenges students face no longer solely come from the burden of memorization, but also from technological intrusion into the previously sacred learning space (Imam Sofia, 2024). The existence of this technology has an impact on concentration and memorization intensity, as well as encouraging cognitive distractions. Research (Aprilianto et al., 2022) It shows that using digital media in *Tahfizh* learning often causes problems in the form of weak time management and distractions from devices. Similar conditions were found by (Akhfadatul, 2025) That digital dependence also affects the resilience of Qur'an memorizers. This condition shows that the strengthening of the spiritual aspect in *Tahfizh* education cannot be relied on only on the accumulation of textual memorization, but requires a pedagogic approach that touches the affective dimension and awareness of meaning in depth, so that the process of internalizing Qur'anic values can take place in a complete and transformative manner (Farhan Al mahmud Asyfa, 2024).

Rumah Tahfizh, as a non-formal institution that develops widely in the community, holds a strategic position in answering these challenges. It has significant potential in shaping the Qur'anic generation contextually due to the flexibility of its curriculum, which is adaptive to local needs (Anastasya et al., 2022). Research (Aminah et al., 2023) Emphasized that good management of the *Tahfizh* program significantly affects the quality of memorization (Maftuhkah & Hariyadi, 2023). Emphasizing the importance of optimizing *Tahfizh* learning based on brain function so students can synergize cognitive, affective, and value aspects. This aligns with a neuroeducational approach that offers a solutional alternative, where the learning process emphasizes textual memorization and internalizes values through brain and emotional engagement (Khairanis & Aldi, 2025).

The learning pattern applied in many *Tahfizh* houses is still repetitive and mechanistic, with the dominance of memorization methods that are not consciously integrated with the emotional and spiritual involvement of the students (Khoiriyah et al., 2023). Various studies show that the low spiritual literacy in students is not only due to a weak understanding of the meaning of verses, but also because of a pedagogical approach that ignores the synergistic work between the brain, emotions, and values in the learning process (Budiman et al., 2023). When the dimensions of metacognition and affection are not touched, the memorization achievements obtained tend to be superficial and fragile, and do not contribute significantly to the transformation of students' behavior and moral awareness (Akhfadatul, 2025).

The condition of methodological stagnation in many *Tahfizh* houses indicates the need to reposition a pedagogic approach that focuses not only on the quantity of memorization, but also on the quality of the spiritual connection of the students to the texts they have memorized (Aminah et al., 2023). The non-involvement of the affective and metacognitive dimensions in the *Tahfizh* process causes the memorized verses not to form existential consciousness, thus losing their transformative function (Sholihah & Muhid, 2025). Therefore, pedagogic interventions are needed that can synergize brain work, emotions, and values in a unified learning process.

The neuroeducational approach offers an alternative solution that has not been widely integrated in *Tahfizh* learning. This approach emphasizes the processing of information in the brain and the importance of the connection between the limbic system and the prefrontal cortex in internalizing values and shaping spiritual awareness (Dia'ul Adha, 2025). Conceptually, neuroeducation is understood as using knowledge about brain function to design more effective learning strategies. This approach emphasizes the importance of understanding how the child's brain processes information and how emotional aspects affect the learning process (Maftuhkah & Hariyadi, 2023). Meanwhile, the term learning the Qur'an refers to the process of teaching reading, understanding, and practicing the Qur'an's values in a way adapted to the stage of development of the students' age (Azmil & Kaltsum, 2023). From a theoretical perspective, this research is based on constructivist learning theory, which affirms that knowledge is built through direct experience and social interaction (Diauddin & Agustina, 2022). This principle is in line with neuroeducation that encourages creating an interactive learning environment

while supporting students' cognitive and emotional development (Aprilianto et al., 2022). Therefore, applying constructivism in learning the Qur'an is believed to strengthen the effectiveness of neuroeducation-based teaching methods.

Adha's research shows that neuroscience-based approaches can build more meaningful language skills because they involve emotional experiences and deep reflection on teaching materials (Dia'ul Adha, 2025). In Islamic education, these findings are reinforced by the Khairanis and Aldi studies that underscore the importance of integrating memorization strategies and spiritual brain activity to strengthen the dimension of transcendence in Qur'anic learning (Khairanis & Aldi, 2025).

As the main focus of this research, spiritual literacy is understood as the ability to recognize religious texts and understand, permeate, and live divine values in real life (Nudin, 2020). This aligns with the spiritual intelligence approach that places meaning and purpose at the center of human thought processes. The Qur'an has given clear directions for man always to activate his mind to contemplate the signs of His greatness and the deeper meaning of life, as Allah calls (*Afala tatafakkarun* – do you not think- Q.S. Al-An'am: 50). This call is an important reminder that the learning process does not stop at the mastery of information, but must involve deep inner reflection. Integrating spiritual intelligence and neuroeducation in *Tahfizh* learning allows for creating a more authentic and transformative process of internalizing values (Muliawaty, 2019). Empirical findings from Muchtar et al. show that learning based on prophetic values can significantly strengthen students' spirituality, especially when the methods open space for reflection and self-awareness (Muchtar et al., 2022).

For the integration between the neuroeducational approach and the strengthening of spiritual literacy to be implemented systematically, a learning design that has structured stages and can be evaluated on an ongoing basis is needed (Hidayatulloh et al., 2023). In this case, evaluation is not only understood as a measuring tool for technical success, but also as a spiritual process to assess the quality of charity and the learning process undertaken by students. This is in line with the word of Allah: (*To test who is the best at charity*–Q.S. Al-Mulk: 2), which emphasizes that every learning process is part of the divine test that leads to the best quality of charity. The instructional design approach is crucial to bridge the theoretical framework and applicable learning practices in *Tahfizh* houses (FARIDA et al., 2022). This approach allows every element of learning, from needs analysis, goal formulation to spiritual impact evaluation, to be comprehensively designed (Anastasya et al., 2022). Thus, the developed model is not purely partial or technical, but can facilitate a learning process that is reflective, meaningful, and rooted in transcendental values.

The ADDIE model is one of the instructional design frameworks that is considered most relevant to support such integration. The concept of the ADDIE model is applied to build basic performance in learning, namely the concept of developing a learning product design (Fitriyah et al., 2021). ADDIE's effective instructional design focuses on executing authentic tasks, complex knowledge, and original problems. Thus, effective instructional design promotes a high degree of fidelity between the learning environment and the actual work setting (Hidayat et al., 2021). ADDIE's learning model adopts a system-based approach that emphasizes effectiveness, efficiency, and interactive engagement among students, teachers, and the surrounding environment. Evaluation outcomes at each stage of the process serve as feedback, guiding the progression and refinement of learning to the subsequent phase. In model development, the ADDIE framework is a superior approach due to its iterative nature and based on continuous evaluation (Anafi et al., 2021).

In terms of novelty, this research not only adopts a neuroeducational approach, but also adapts it specifically in the context of *Tahfizh* houses, which methodological innovations have less touched. The focus on improving spiritual literacy as the main output of the model, as well as the use of ADDIE as a development design approach, makes this study unique compared to previous studies that still focus on memorization quantity or learning motivation alone. Amid the challenge of value degradation and the influence of digital disruption on the spirituality of the younger generation, the need for a *Tahfizh*

learning model based on brain work and awareness of meaning is an urgency that cannot be delayed.

The use of the ADDIE model in the development of neuroeducation-based *Tahfizh* learning strategies is carried out through five systematic stages. At the analysis stage, it was found that some students in the *Tahfizh* house still tended to memorize the Qur'an mechanically without being connected to spiritual awareness (Yahya, 2022). This prompted the need for models to integrate brain function, affect, and value formation. Furthermore, a neuroeducational learning design is prepared at the design stage that combines cognitive stimulation through the *Talqi, Marja'ah* and mind mapping sentences, affective reinforcement through *Tadabbur* and spiritual reflection, and the management of a conducive learning environment. The design was then developed, which became a learning module validated by Islamic education and neuroeducation experts, until the final revision was obtained in the form of additional brain visualization media to strengthen students' understanding (Maftuhkah & Hariyadi, 2023). The next stage is implementation, where the model is tested on 25 students for four weeks. The implementation results showed that the students were more active in muraja'ah, engaged in spiritual reflection, and began to get used to writing notes of feelings after memorizing verses. At the evaluation stage, data were obtained that teachers felt helped by systematic guidance. At the same time, 85% of students stated that memorizing and feeling spiritual closeness to the verses studied was easier. Thus, this ADDIE-based neuroeducation model is considered effective in strengthening the cognitive achievements as well as the spiritual literacy of students.

Based on this framework, this research aims to design and develop a neuroeducation-based *Tahfizh* learning model in the context of *Tahfizh* houses, which can effectively improve the spiritual literacy of students. The model is designed as a methodological instrument and a pedagogical intervention that rests on the principles of transcendence and authentic spiritual experience. By positioning the *Tahfizh* house as the focal point of the study, this model is designed to address the structural flexibility of non-formal institutions while simultaneously tackling core challenges such as learning fatigue, limited comprehension of meaning, and the lack of a brain-based perspective in Qur'anic memorization. The outcomes of this research are expected to expand the scholarly discourse of contemporary Islamic education and provide practical contributions in advancing *Tahfizh* methods that are more humanistic, transformative, and contextually relevant. Restrictions on *Tahfizh* houses are carried out consciously to maintain the uniqueness of the findings, while ensuring that the development of the model is applicable, relevant to the needs of the field, and not trapped in generalizations detached from the reality of practicality.

2. METHODS

This research is a type of research, Research and Development (R&D), with the ADDIE model, namely Analysis, Design, Development, Implementation, dan Evaluation, systematic and adaptive. The research was carried out at the Ibadurrahman Jambi Al-Qur'an *Tahfizh* House, with data collection techniques in the form of observations, interviews, and affective-spiritual questionnaires (Wirahyuni et al., 2021). The data were analyzed qualitatively-thematic and quantitatively, descriptively to map students' emotional dynamics and tendencies (Maxnun et al., 2024).

The development process is carried out through five stages of ADDIE: (Wirahyuni et al., 2021) (1) Analysis, identifying the weaknesses of students who tend to memorize mechanics without reflection; (2) Design, designing models based on cognitive stimulation (*talaqqi, muraja'ah, mind mapping*), affective (tadabbur, muhasabah, reflection), and conducive learning environment; (3) Development, compiling a prototype of the Neuroeducation-Based *Tahfizh* Learning Model, then validated by experts, and then revised, such as the addition of brain visualization media. (Wati & Yulda, 2025) (4) Implementation, trial on 25 students for four weeks with structured modules; and (5) Evaluation, through questionnaires, observations, and interviews that show the effectiveness of the learning model.

3. FINDINGS AND DISCUSSIONS

Findings

Needs Analysis

Tahfizh learning at Rumah *Tahfizh* Ibadurrahman Jambi shows that complex challenges cannot be overcome only by relying on a technical approach to memorization alone. Based on the results of field observations, in-depth interviews with teachers and students, and the distribution of questionnaires to 25 active students, it was revealed that most students faced various basic problems in memorizing the Qur'an. These challenges are not only related to technical aspects, but also touch on psychological and spiritual dimensions.

Most students admitted that they often felt bored when memorizing, their motivation tended to be low, and the internalization of spiritual values from the verses memorized was still weak. One of the most dominant factors is external interference in the form of the use of gadgets, especially when there is a visit from a student's guardian or when on holiday to return home. Data shows that 90% of students admit that digital devices are a significant source of distraction in the *Tahfizh* process. In addition, 80% of students stated that they often felt bored when memorizing, only 35% really understood the meaning of the verses memorized, and about 60% did not have a consistent daily murajaah habit.

This condition indicates that *Tahfizh* learning requires innovation based on a personal-neurological approach, which can pay attention to psychological and spiritual aspects, while effectively managing external distractions.

Table 1. Results of the Needs Analysis Questionnaire (N=25 students)

Indicator	Positive Answer (%)	Negative Answer (%)
Often feeling bored when memorizing	80%	20%
Often distracted by gadgets	90%	10%
Understanding the meaning of memorized verses	35%	65%
Have daily murajaah habits	40%	60%

The findings in Table 1 emphasize the need for a *Tahfizh* learning model that is adaptive to the neurological characteristics of students, as well as integrative in spiritual and technological aspects. Thus, the results of this analysis are a strong basis for designing more effective learning methods and in accordance with the needs of students in this modern era.

Model Design and Development

Based on the analysis findings, the Neuroeducation-Based *Tahfizh* Learning model (MP-TBN) was designed to respond to actual needs in the field by integrating a neuroeducational approach focusing on brain work, emotions, and spirituality. The four main pillars of MP-TBN are formulated systemically. First, the Brain-Based Memorization Strategy (BBMS) facilitates long-term memory activation and right-left brain coordination through mind-mapping, chunking, and anchor memory. This allows students to memorize more adaptively to their own brain work, so that boredom can be minimized. Second, *the Digital Tahfizh Tracker* (DTT) is designed to shift the use of gadgets from a source of distraction to reflective aids and app-based memorization monitoring, such as *Notion* and *Google Sheets*, complete with audio reminder features and memorization progress tracking. The third pillar, Ruhaniyah-Based Reflection (RBR), strengthens the spiritual literacy of students with the practice *of tazakkur* verses based on *thematic tadabbur*. Here, the memorization process does not stop at verbal reproduction, but expands into a contemplative space that gives meaning to the Qur'an text in students' life experience. The final pillar, *the Daily Neuro-Murojaah Habit* (DNMH), regulates the rhythm of daily repetition according to the optimal brain clock and is supported by *brainwave audio*, aiming to build mental and emotional

regularity in murojaah. The interaction between these pillars strengthens each other in creating an adaptive, meaningful, and spiritual learning ecosystem.

Development

a. Expert Validation

The model validation process by *Tahfizh* experts and neuroeducational experts showed excellent results on all indicators that have been set. The validated aspects included the suitability of neuroeducational principles, the integration of spiritual values in learning, and the integration of models with the demands of the digital era. The validators assessed that the Neuroeducation-Based *Tahfizh* Learning Model (MP-TBN) was able to provide an answer to the gap that has arisen between the technical approach to memorization that tends to be mechanical and the need to internalize the meaning of the Qur'an more deeply and touch on the spiritual aspect.

Validation is carried out using standardized assessment instruments that contain an assessment scale of 1 to 4. A score of 1 indicates a category of "not feasible", a score of 2 "less feasible", a score of 3 "feasible", and a score of 4 "very feasible". From the results of the assessment, the majority of indicators obtained a score of 4, while a small number of others obtained a score of 3. This shows that in general, MP-TBN is considered very feasible to be implemented. Experts also provided input so that in the application in the field, this model continues to adjust to the psychological condition of students, manage digital distractions wisely, and strengthen the daily murajaah aspect. Thus, MP-TBN is not only considered conceptually valid, but also has great potential to be applied practically in *Tahfizh* learning in various educational institutions.

Table 2. Expert Validation Recapitulation

Validation Aspects	Average Score	Category
Conformity with the principles of neuroeducation	3	Proper
Tahfizh learning innovations	4	Highly feasible
Potential to increase spiritual literacy	4	Highly feasible
Integration with the digital age	3	Proper
Eligibility applied at the *Tahfizh* House	4	Highly feasible

Table 2 presents a recapitulation of the validation results from the experts. From these results, it can be seen that all aspects assessed received an average score of 3 and 4, which shows that this model is good and very good in accordance with the principles of neuroeducation, *Tahfizh* learning innovation, the potential to increase spiritual literacy, integration with the digital era, and the feasibility of being applied in *Tahfizh* houses.

Implementation

a. Initial Trial

After validation, the next step is to conduct an initial trial or limited trial. This trial was carried out on twenty-five students for two weeks, with observations carried out daily and weekly evaluations based on several indicators, namely the quality of memorization, murojaah ability, the application of neurotechniques, and spiritual experiences. This trial aims to measure the effectiveness of models that have been developed in real conditions. The following are the results of a descriptive analysis before the initial trial

Table 3. Descriptive Statistics

Descriptive Statistics					
	N	**Minimum**	**Maximum**	**Mean**	**Hours of Deviation**
KH	25	9	16	11.88	1.900
MR	25	7	15	10.08	1.706
PN	25	7	15	10.24	1.640
IS	25	7	12	9.36	1.823
Valid N (listwise)	25				

Overall, these results show that of the four variables measured, KH obtained the highest average (11.88) while ES had the lowest average (9.36). This indicates that the KH aspect is relatively more mastered by the respondents compared to the ES aspect, which still requires more attention in the learning process or intervention carried out.

Table 4. Comparison Before and After the Initial Trial

Indicator	**Before (Average Score)**	**After (Average Score)**
Memorization per day (Ziyadah verse)	3	4
Murajaah harian	50,4%	90%
Focus when memorizing	2.6	4
Depth of meaning (spiritual)	2.3	3.8

Table 4 compares the average score before and after the initial trial. The results show significant improvements in various aspects. For example, the number of daily memorizations increased from two to four verses, which shows that students can memorize more simultaneously. In addition, the ability of daily murojaah has also increased, where 90% of students carry out daily murojaah compared to 60% previously. An increase was also seen in the level of focus during memorization, which rose from 3.1 to 4.5, and the depth of spiritual meaning increased from 2.8 to 3.8.

b. Field Trials

After implementing the initial trial, the next stage is to carry out field trials with a wider scope. This trial was carried out for four full weeks and involved all active students of Rumah Tahfizh, totaling twenty-five people. The trial process is designed to test the effectiveness of the learning model more comprehensively, to provide a more realistic picture of the implementation in the field.

In its implementation, evaluation is carried out using a combination of methods, namely pre-test and post-test to measure the progress of memorization and understanding of students before and after treatment, in-depth interviews to explore the subjective experiences of students related to the methods applied, and direct observation to see the dynamics of the daily learning process. With this multi-layered approach, researchers hope to obtain data that is not only quantitative but also qualitative, so that the results obtained are more comprehensive.

The main purpose of this field trial is to measure the effectiveness of the *Tahfizh* learning model on a larger scale and to gather in-depth feedback from students. The results of this evaluation will be an important basis for improving, refining, and strengthening the learning model to better suit the real needs in the field.

Table 5. Paired Samples Test

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Hours of deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	POSTTEST - PRETEST	-32.840	6.780	1.356	-35.639	-30.041	-24.217	24	.000

Table 6. Product Effectiveness Test Results

Evaluation Aspects	Pre test	Post Test	Increased
Number of memorizations (Juz)	3.2	4.6	+1.4
Spiritual Reflection Score (1-5)	2.9	4.3	+1.4
Focus when memorizing	3.1	4.5	+1.4
Spiritual Depth (1-5)	3	4.5	+1.5

Based on the results of data analysis, the application of the neuroeducational model in learning *Tahfizh* Al-Qur'an has been proven effective in improving students' spiritual literacy abilities and quality. This can be seen from the results of the product effectiveness test (Table 6), which shows an increase in memorization, spiritual reflection, focus when memorizing, and spiritual depth.

The findings were strengthened by the results of the Paired Samples Test, where the average posttest score was significantly higher than the pretest with an average difference of 32.84 points (t = -24,217, p = 0.000). Thus, the neuroeducation model has a positive effect on memorization achievement and can also strengthen students' spiritual literacy in the era of digital disruption.

Table 4 presents the results of the product effectiveness test, where the changes in each aspect of the evaluation show positive results. The findings of the 4-week field trial, where memorization increased from 3.2 to 4.6 juz, and the spiritual reflection score increased from 2.9 to 4.3 on a scale of 5. The level of focus and activeness of the students also showed an increase from 3.1 to 4.5, and the level of spiritual depth on a scale of 1-5 increased from 3 to 4.5.

The results of observations when learning *Tahfizh* with the MP-TBN method for students and teachers showed a positive acceptance. The interaction with the teachers who taught stated that this model made learning more active and meaningful, and was able to revive the spiritual dimension in the *Tahfizh* process, which quantitative approaches have often marginalized. This emphasizes that MP-TBN is not just a technical innovation, but a transformative effort in reorienting *Tahfizh* education that unites the brain, heart, and soul.

With the success of various implementation and validation stages, MP-TBN has the potential to become a superior model that can be replicated in other *Tahfizh* institutions, especially in answering the challenges of Islamic education in the digital era. The author views that this model not only offers a new strategy, but also provides a new paradigm that is more personal, humanistic, and spiritual in educating the generation of Qur'an memorizers.

Evaluation

(90%) Respondents stated that they were satisfied with implementing this learning model because it helps improve memorization skills and strengthens spiritual literacy by appreciating the meaning of

the Qur'an. This finding confirms that the success of *Tahfizh* learning is measured not only by the quantity of successfully memorized verses but also by the quality of students' emotional and spiritual connection with the Qur'an. This model provides a more balanced approach, combining cognitive, affective, and spiritual aspects in the learning process.

Based on the results of the descriptive analysis, the most dominant indicator is "spiritual closeness to the Qur'an" with a percentage of 92%. This shows that applying the model can provide a deeper religious experience for students. They memorize verses, try to understand the meaning, and foster inner attachment to create a stronger relationship between the students and the Qur'an. This spiritual closeness is important because it is the foundation of intrinsic motivation to continue memorizing and maintaining consistency in murajaah.

Meanwhile, the indicator with the lowest achievement is "the use of *Tahfizh* digital applications," which only gets 80%. These results indicate that the use of technology is still not optimal, both because of limited facilities, lack of students' digital literacy, and because some students are more comfortable with traditional methods based on printed mushaf. However, the achievement of 80% is still relatively high, which means that the use of digital applications has great potential to be further developed to support the *Tahfizh* process.

Overall, these findings show that the learning model applied is technically effective and relevant to spiritual needs and the development of the times. By strengthening the use of technology and maintaining a focus on spiritual closeness, this model can become a holistic and sustainable *Tahfizh* learning strategy.

Discussion

The results of the validation of the Neuroeducation-Based *Tahfizh* Learning Model (MP-TBN) by *Tahfizh* experts and neuroeducation experts showed very high scores on all indicators, including conformity with neuroeducation principles, spiritual integration, and integration with the needs of the digital era (Ramadhani & Aprison, 2022). These results indicate that MP-TBN is not just a design of memorization methodology, but a holistic approach that can combine the effectiveness of memorization strategies with deep internalization of the meaning of the verses. This validation also shows the alignment between the cognitive (memory), affective (motivation, emotion, and appreciation), and spiritual (spiritual relationship with the Qur'an), so that this model can be seen as an innovative breakthrough in *Tahfizh* learning in the 21st century. This view aligns with Khairanis and Aldi, who emphasize that the neuroeducational approach can optimize brain and heart work synergy in learning the Qur'an (Khairanis & Aldi, 2025).

The daily murajaah increased from 60% to 90%, the students' focus increased from a score of 3.1 to 4.0, and the depth of spiritual reflection increased from 2.8 to 3.8. This data shows that MP-TBN encourages increasing technical memorization capacity and builds awareness in students to make the memorization process a means of spiritual strengthening. These findings are consistent with research (Maftuhkah & Hariyadi, 2023). This proves that a brain function-based approach can speed up memorization while deepening the understanding of Qur'anic verses.

Furthermore, the four-week field trial strengthened the results of the initial trial. The number of memorization students increased from 3.2 juz to 4.6 juz, while the spiritual reflection score increased from 2.9 to 4.3. In addition to quantitative achievements, the qualitative aspect also showed significant changes: 95% of students reported higher motivation, 90% admitted to more appreciation of the meaning of verses, and teachers assessed that learning became more active, participatory, and meaningful. This confirms that this model impacts students and changes classroom learning dynamics, creating a productive collaborative atmosphere. This achievement aligns with (Alfian Zulfikar et al., 2024). In addition, 95% of students reported higher motivation, 90% admitted to more appreciation of the meaning of verses, and teachers assessed learning to be more active, participatory, and meaningful

achievements in line with Supian about the importance of motivational strategies in successful memorization (Supian et al., 2019).

When compared to previous research, these findings show consistency and novelty. Nugraha found that the integration of the *Tahfizh* method with the HOTS strategy was able to increase cognitive engagement, but it did not explicitly incorporate the neuroeducational aspect as MP-TBN (Nugraha, 2020). Rizki noted that there was an increase in memorization through an elementary school-based methodology, but without spiritual reflection evaluation instruments such as those used in this study (Rizki, 2023). Yundianto emphasized the importance of social support in the success of tahfizh, while MP-TBN combines social support with structured brain stimulation (Khatami et al., 2023). Supriatna proved that Qur'an-based learning can improve spiritual literacy, and MP-TBN confirmed the findings and expanded them through quantitative indicators of increased spiritual reflection (Supriatna, 2025). Meanwhile, Suyadi and Widodo emphasized the potential of neuroscience in Islamic education, and this research is a concrete implementation of this view in the context of *Tahfizh* (Suyadi & Widodo, 2019). Muchtar showed that *Tahfizh* can increase spiritual intelligence, and this study verifies that such improvement can be measured as well as accelerated through neuroeducation-based design (Muchtar et al., 2022). Farida develops thematic *Tahfizh* learning that focuses on the material, while MP-TBN complements it with mechanisms that optimize brain work (FARIDA et al., 2022). The practical implications of these findings include the potential adoption of MP-TBN by *Tahfizh* institutions to improve the quality of memorization and strengthen the spiritual aspects of students, the application of neuroeducational principles that allow teachers to make optimal use of the brain's potential, as well as its role as a solution to the dominance of quantitative memorization targets in the digital era (Dewi et al., 2020).

Based on these results, the authors see MP-TBN as an innovation that improves memorization techniques and establishes a balance between brain power, heart, and spirituality. This approach positions *Tahfizh* not just as a target for quantitative achievement, but as a meaningful, sustainable, and relevant life learning process to cognitive, affective, and spiritual challenges in the 21st century (Hakim et al., 2022).

Given the initial success of the MP-TBN implementation, future research can be directed at testing this model in more diverse contexts. For example, its application in *Tahfizh* institutions with different age levels (children, adolescents, adults), online learning environments, and non-formal *Tahfizh* communities. Longitudinal research with a longer time span is also needed to assess the sustainability of the effects of MP-TBN on memorization, consistency of murajaah, and deepening of spiritual reflection (Yudihartanti et al., 2024).

In addition, exploring MP-TBN integration with artificial intelligence (AI)-based technology has great potential (Yudihartanti et al., 2024). AI applications can be developed to provide adaptive support according to the learning rhythm of each student, provide real-time feedback, and help monitor memorization progress. This step will strengthen the relevance of MP-TBN in the digital era while minimizing distractions from technological devices that have been a challenge (Azzahrowaini et al., 2025).

Comparative studies with other *Tahfizh* learning models tested in various countries can also be carried out to enrich a global perspective. Thus, MP-TBN has the opportunity to become an international model that is adaptive to the local context but remains universal in its principles.

4. CONCLUSION

This study demonstrates that the Neuroeducation-Based *Tahfizh* Learning Model (MP-TBN) effectively enhances Qur'anic memorization by harmoniously integrating cognitive functions, emotional depth, and spiritual strength. These findings are strengthened by the results of expert

validation, initial trials, and field trials that consistently show significant improvements in terms of the technical aspects of memorization and the meaning of the verses memorized. Thus, MP-TBN can bridge the gap between mechanical memorization that only emphasizes repetition and the deep need to internalize spiritual values. This achievement is in line with the main goal of the research, which is to present a *Tahfizh* learning model that is adaptive to the increasingly complex cognitive, affective, and spiritual challenges of the 21st century. MP-TBN emphasizes the quantity of memorization and the quality of appreciation, so that students are encouraged to make the Qur'an a guideline for life, not just memorized readings.

However, this study has limitations, especially in the relatively short duration of implementation and the limited number of participants, so generalization of results needs to be done cautiously. For further development, follow-up research is recommended to be carried out on a wider scale, involving various types of *Tahfizh* institutions and integrating digital technology support to strengthen the sustainability and consistency of *Tahfizh* learning in the modern era.

REFERENCES

Abdussyukur, A. (2022). Tahfidz Al-Qur'an Learning Model at Bunayya Integrated Islamic Boarding School, Gayo Lues Regency. *Intelligence*, *9*(2), 1–24. https://doi.org/10.54604/itg.v9i2.74

Akhfadatul, A. (2025). Resilience of Quran Memorizing Students in the Digital Era: A Phenomenological Study. *Journal of Islamic Psychology*, *10*(2), 53–70. https://doi.org/10.47399/jpi.v10i2.285

Alfian Zulfikar, Sastradiharja, J., & Farizal MS. (2024). Collaborative Learning Model in the *Tahfizh* Al-Qur'an Program to Increase Motivation to Memorize the Qur'an for Al-Wafi Islamic Boarding School, Depok Santri Al-Wafi. *Educatia: Journal of Islamic Education and Religion*, *14*(2), 185–207. https://doi.org/10.69879/4q3eyz61

Aminah, S., Erawadi, E., & Hasibuan, Z. E. (2023). Management of the *Tahfizh* al-Qur'an program in improving the quality of memorization at Madrasah Aliyah Private Hajijah Amalia Sari Padangsidimpuan. *Journal of Tambusai Education*, *7*(2), 11271–11278. https://www.jptam.org/index.php/jptam/article/view/8158

Anafi, K., Wiryokusumo, I., & Leksono, I. P. (2021). Development of the Addie Model Learning Media Using Unity 3D Software. *Journal of Education and Development*, *9*(4), 433–438.

Anastasya, W. D., Aprison, W., Husni, A., & ... (2022). Implementation of *Tahfizh* Al-Qur'an Learning at Ma'had Shahibul Qur'an, Surau Kamba, Ampek Angkek District, Agam Regency. *Educational Journal ...*, *6*, 16098–16104. https://jptam.org/index.php/jptam/article/view/4924%0Ahttps://jptam.org/index.php/jptam/article/download/4924/4192

Aprilianto, T., Sutarto, S., & Faturrochman, I. (2022). Problems in the implementation of tahfidz al-Qur'an learning using digital media. *Muaddib: Islamic Education Journal*, *5*(1), 26–32. https://doi.org/10.19109/muaddib.v5i1.14377

Azmil, I. A., & Kaltsum, H. U. (2023). Principal's Strategy in Managing Tahfiz Learning. *Scaffolding: Journal of Islamic Education and Multiculturalism*, *5*(2), 919–937. https://doi.org/10.37680/scaffolding.v5i2.3356

Azzahrowaini, L., Shohib, M. W., Nur, M., & Maksum, R. (2025). Digitization of AI-based Tahfidz Al-Qur'an Learning in Innovation, Challenges, and Implementation. *Educatio: Journal of Educational Sciences*, *20*(2), 253–265. https://doi.org/10.29408/edc.v20i2.30044

Budiman, B., Haritani, H., & Wazni, M. K. (2023). The Influence of the *Tahfizh* Al Qur'an Integrated Discovery Learning Model on the Motivation and Learning Outcomes of Science Students in Junior High School. *Educatio*, *18*(2), 223–232. https://doi.org/10.29408/edc.v18i2.23933

Dewi, R., Ahmad, A., & Zulfikar, Z. (2020). Problematics of the Qur'an: An Introduction to Learning in the Industrial Era. *POTENTIAL: Journal of Islamic Education*, *6*(1), 72–92. https://ejournal.uin-suska.ac.id/index.php/potensia/article/view/8624

Dia'ul Adha, I. (2025). Exploration of Neuroeducation in Indonesian Language Learning: A Neuroscience-Based Approach to Improving Language Competence. *JoALLE Journal of Advances in Language, Literature, and Education*, *1*(1), 3090–1987. https://ejournal.dwipantara.org/index.php/joalle

Diauddin, D., & Agustina, F. (2022). Strengthening the *Tahfizh* Al-Qur'an Learning Model in Dayah Ar-Raudhah *Tahfizh* Al-Qur'an. *Pioneers: Journal of Education*, *11*(3), 58–68. https://doi.org/10.22373/pjp.v11i3.15502

Farhan Al Mahmudy Asyfa. (2024). *The Practice of Memorizing the Qur'an in the Tahfizh Al-Qur'an House*.

FARIDA, R. N., Faridi, F., & Romelah, R. (2022). Thematic *Tahfizh* Al-Qur'an (TQT) Learning Model for Online Classes at Bait Al-Hikmah Foundation, Malang. *Studia Quranika*, *7*(1), 163. https://doi.org/10.21111/studiquran.v7i1.6751

Fitriyah, I., Wiyokusumo, I., & Leksono, I. P. (2021). Development of Prezi learning media with ADDIE model simulation and digital communication. *Journal of Educational Technology Innovation*, *8*(1), 84–97. https://doi.org/10.21831/jitp.v8i1.42221

Hakim, L., Fadhli, M., & Mulmustari, M. (2022). The Value of Qur'anic Morals in People's Lives. *TAFSE: Journal of Qur'anic Studies*, *7*(2), 261. https://doi.org/10.22373/tafse.v7i2.12687

Hidayat, F., Rahayu, C., Barat, K. B., Nizar, M., Coblong, K., & Bandung, K. (2021). ADDIE (ANALYSIS , DESIGN , DEVELOPMENT , IMPLEMENTATION, AND EVALUATION) MODEL IN ISLAMIC EDUCATION LEARNING ADDIE (ANALYSIS , DESIGN , DEVELOPMENT , AND EVALUATION) MODEL IN ISLAMIC EDUCATION LEARNING. *JIPAI; Journal of Islamic Religious Education Innovation*, *1*, 28–37.

Hidayatulloh, F., Khair, D., & Lestari, S. (2023). Implementation of *Tahfizh* Al Qur'an Learning Management in Integrated Islamic Junior High School. *Journal.an-Nur.Ac.Id*, *02*(04), 920–928. http://journal.an-nur.ac.id/index.php/unisanjournal/article/view/767%0Ahttps://journal.an-nur.ac.id/index.php/unisanjournal/article/download/767/891

Imam Sofii, M. A. (2024). Memorizing the Qur'an in the Digital Age: Problematic and Methodological. *Al Furqan: Journal of Qur'anic Science and Tafsir*, *7*(1), 1–17. https://doi.org/10.58518/alfurqon.v7i1.2436

Khairanis, R., & Aldi, M. (2025). Islamic Education Based on Neuroeducation: Al-Qur'an Learning Strategies. *Journal of Multicultural Community Development and Service*, *3*(1), 41–50. https://doi.org/10.57152/batik.v3i1.2001

Khatami, M., Fathony, A., Armeini, A., & Syahputra, W. (2023). Memorizing the Quran: Exploring Academic Hardiness, Self-Efficacy, and Perceived Social Support in Islamic Schools 1. *International Journal of Islamic Educational Psychology*, *4*(2), 225–243.

Khoiriyah, H., Hanum, A., & Nahar, S. (2023). Learning Tahfiz Al-Quran at an Islamic Boarding School. *Scaffolding: Journal of Islamic Education and Multiculturalism*, *5*(1), 919–936. https://doi.org/10.37680/scaffolding.v5i1.2799

Maftuhkah, & Hariyadi, R. (2023). Optimization of *Tahfizh* Al-Qur'an Learning Based on Brain Function. *Journal.Istaz. Ac.Id*, *4*(2), 155–157.

Maxnun, L., Kristiani, K., & Sulistyaningrum, C. D. (2024). Development of hots-based cognitive assessment instruments: ADDIE model. *Journal of Education and Learning*, *18*(2), 489–498. https://doi.org/10.11591/edulearn.v18i2.21079

Muchtar, N. E. P., Ahadiyah, W., Zulianah, E., & Khodijah, S. (2022). The Existence of Prophetic Learning in Improving Spiritual Intelligence Through Tahfidz Al-Qur'an for Students. *Nazhruna: Jurnal Pendidikan Islam*, *5*(3), 1175–1191. https://doi.org/10.31538/nzh.v5i3.2743

Muliawaty, L. (2019). Opportunities and Challenges of Human Resources in the Era of Disruption. *Policy : Journal of Administrative Sciences*, *10*(1), 1. https://doi.org/10.23969/kebijakan.v10i1.1416

Nudin, B. (2020). The Concept of Islamic Education for Adolescents in the Era of Disruption in Overcoming Moral Crises. *LITERACY (Journal of Educational Sciences)*, *11*(1), 63. https://doi.org/10.21927/literasi.2020.11(1).63-74

Nugraha, E. (2020). Integration of the *Tahfizh* Al-Quran program with the High Order Thinking Skills (HOTS) model in elementary schools. *Primary: Journal of Basic Science and Education*, *12*(02), 125–140.

Ramadhani, W., & Aprison, W. (2022). The Urgency of Learning Tahfidz Al-Qur'an d i Era 4.0. *Journal of Tambusai Education*, *6*(2), 13163–13171. https://jptam.org/index.php/jptam/article/view/4538/3827

Rizki, B. (2023). Learning Methodology of Tahfiz Al-Qur'an in Islamic Elementary School. *Scaffolding: Journal of Islamic Education and Multiculturalism*, *5*(1), 832–848. https://doi.org/10.37680/scaffolding.v5i1.3028

Rokhim, A. A. (2021). PEMANFAATAN MASSIVE OPEN ONLINE COURSES DALAM PEMBELAJARAN AL QUR DI ERA DIGITAL Abstract — This article aims to discuss the use of Massive Open Online Course (MOOC) media in learning the Qur'an in the digital era—the research method used in this article. *EDURELIGIA: Jurnal Pendidikan Agama Islam*, *05*(02), 83–96.

Sholihah, N., & Muhid, A. (2025). The Urgency of the Tahfidzul Qur'an Extracurricular Program as an Effort to Shape the Qur'anic Character in the Alpha Generation. *EL-BANAT: Journal of Islamic Thought and Education*, *15*(1 SE-Articles), 87–104. https://journal.stai-ypbwi.ac.id/index.php/elbanat/article/view/487

Supian, S., Vahlepi, S., & Sholiha, M. (2019). Motivational Strategies in Learning *Tahfizh* Al-Qur'an. *TARBAWY: Indonesian Journal of Islamic Education*, *6*(2), 176–186. https://doi.org/10.17509/t.v6i2.19679

Supriatna, A. (2025). Effectiveness of Al-Qur an Based Learning to Improve Students ' Spiritual Literacy in Islamic Elementary Schools. *Journal of Modern Islamic Studies and Civilization*, *3*(01), 17–30.

Suyadi, & Widodo, H. (2019). Millennialization of Islamic education based on neuroscience in the third-generation university in Yogyakarta, Indonesia. *Qudus International Journal of Islamic Studies*, *7*(1), 173–202. https://doi.org/10.21043/qijis.v7i1.4922

Watts, W., & Yulda, A. (2025). Neuroeducational Research Map in Science Learning: A Bibliometric Study in Two Decades with Scopus Data. *Journal of Integrated Science Learning: PELITA, 5*(June), 98–113.

Wirahyuni, K., Suandi, I. N., Martha, I. N., & Sudiana, I. N. (2021). Validity and Reliability of a Digital-based Affective Evaluation Instrument on Indonesian MPK Learning at Ganesha University of Education. *International Journal of Early Childhood Special Education*, *13*(2), 1138–1145. https://doi.org/10.9756/INT-JECSE/V13I2.211159

Yahya, M. (2022). Spirituality in Islamic Education. *Al-Furqan Scientific Journal: Al-Qur'an Language and Art*, *9*(1), 178–194. https://doi.org/10.69880/alfurqan.v9i1.56

Yudihartanti, Y., Rizki, A., Ariannor, W., & Noor, M. (2024). Android-Based Model of Learning to Memorize the Qur'an. *Jutisi: Scientific Journal of Informatics Engineering and Information Systems*, *13* (April), 755–765.