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INTEGRATING SURAH LUQMĀN VERSE 13 AND ANDREW NEWBERG'S NEUROSCIENCE IN CHILDREN'S SPIRITUAL-MORAL EDUCATION

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ABSTRAK

Latar Belakang: Berangkat dari kebutuhan memahami bagaimana pembentukan moral dan spiritualitas anak yang berbasis Al-Qur'an dan kondisi biologis otak. **Tujuan:** Penelitian ini mengkaji integrasi nilai pendidikan moral-spiritual anak dalam Surat Luqmān ayat 13 dengan teori neurospiritual Andrew Newberg. **Metode:** Menggunakan metode kualitatif dengan pendekatan tafsir ilmi dan analisis intertekstual-sintesis, penelitian ini menelaah teks Al-Qur'an melalui literatur tafsir serta literatur neurosains Newberg. **Hasil:** Hasil penelitian menunjukkan korelasi antara prinsip pendidikan tauhid berbasis kasih sayang dalam Luqmān:13 dengan mekanisme perkembangan otak spiritual anak, meliputi sistem limbik, sel spindle, dan jaringan reflektif. **Kesimpulan:** Sintesis ini menghasilkan model pendidikan agama berbasis integrasi neurospiritual yang dapat diaplikasikan dalam kurikulum pendidikan Islam untuk menumbuhkan empati, kesadaran moral, dan kedekatan spiritual anak. **Implikasi:** Implikasi praktis penelitian ini mencakup pengembangan modul pembelajaran yang memperhatikan tahap perkembangan neurologis anak serta pelatihan pendidik dalam menerapkan pendekatan integratif wahyu dan sains.

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Keywords:
Spiritual Education; moral Education; Tafsir Luqmān:13; Neuroscience; Andrew Newberg.

ABSTRACTS

Background: Departing from the need to understand how the moral and spirituality of children is formed based on the Qur'an and the biological condition of the brain. **Purpose:** This study examines the integration of the value of children's moral-spiritual education in Surah Luqmān verse 13 with Andrew Newberg's neurospiritual theory. **Method:** Using a qualitative method with a scientific interpretation approach and intertextual-synthesis analysis, this study examines the text of the Qur'an through the literature of interpretation and Newberg's neuroscience literature. **Result:** The results of the study showed a correlation between the principles of compassion-based monotheism education in Luqmān:13 and the mechanism of children's spiritual brain development, including the limbic system, spindle cells, and reflective tissues. **Conclusion:** This synthesis produces a model of religious education based on neurospiritual integration that can be applied in the Islamic education curriculum to foster empathy, moral awareness, and spiritual closeness of children. **Implication:** The practical implications of this research include the development of learning modules that pay attention to the stages of children's neurological development as well as training educators in applying integrative approaches to revelation and science.

A. INTRODUCTION

Spiritual and moral crises are one of the fundamental phenomena in children of developmental age in modern times (Yusoff et al. 2024). The rapid advancement of technology and information that is not always accompanied by a balance of religious and spiritual values causes the erosion of human values so that it has the potential for psychological problems such as stress, depression, loss of direction in life, and even affects physical health (Shi et al. 2023; April 2024; Dempsey et al. 2025). This phenomenon shows that human primary needs include not only biological and social, but also spiritual needs (Series et al. 2021). In this context, it is important to study the spiritual education of children based on religion that is integrated with modern science.

Humans are creatures created by nature, which have basic potentials that lead to servitude to God (Nurachman et al. 2024; Sales et al. 2024). This spiritual intelligence from birth has been mentioned through the Word of Allah in Ar-Rūm:30 which explains that religious tendencies are part of human nature, not the result of the formation of human culture (Hikmat 2011, Vol.3, p.24). This command of servitude to the Divine is also discussed in Adz-Dzāriyāt:56 which affirms: "I did not create the jinn and mankind except that they should worship Me." (Ika Sofia et al. 2024). From In both verses, it can be understood that the main purpose of human existence is to develop their spiritual potential, which is important to be instilled and maintained as best as possible from an early age (Negash Tesema 2025).

This view is in line with the discoveries by pioneers in the field *neurotheology*, Andrew Newberg (Goldberg 2009). *Neurotheology* namely neuroscience that studies the relationship between the human brain and religious and spiritual experiences (Newberg 2018). In his study, he was able to prove that spiritual experiences are not entirely mystical or supernatural, but can be explained biologically (Newberg et al. 2019). From the moment a child is born, spiritual development goes hand in hand with his neurological maturation. At the age of 0-4 years there is rapid synapse growth in the cerebral cortex, especially in areas that then play an important role in the formation of a sense of security and trust, the initial foundation for spiritual awareness. If in this

phase the child's brain is disturbed or injured, it will hinder spiritual development (Werk et al. 2021). In fact, consistent spiritual education and practice show positive effects on cognitive function and mental health (Newberg 2025). Worship practices such as prayer, meditation, and dhikr consistently activate certain areas of the brain, such as the prefrontal cortex which plays a role in concentration and self-control and the parietal lobe which regulates self-perception (Newberg 2023). Therefore, by paying attention to the aspects of neuroscience, spiritual and religious education based on the Qur'ani can be carried out effectively and optimally.

These studies provide empirical evidence that the so-called nature of the Qur'an finds its relevance to the human brain which is indeed designed to respond to religious experiences (Newberg 2017; Sugiarto 2022). In addition, the connection between spirituality and mental health has been widely proven. Research with a systematic review approach by Padlocks et al. (2021) concludes that spirituality and religion have a significant positive relationship with mental health, life satisfaction, and resilience to stress. Rodriguez (2024) Analyzing through qualitative interviews has created a concept of spiritual education practice that pays attention to the field of neuroscience, but is too common to be applied to all religions. In fact, in the context of Islam, a form of practice based on values is needed so that it can be implemented as a practice and strengthen the upright of religion and spirituality in children (Alfaqiih 2017).

The Qur'an presents a concrete educational model through *Luqmān* verse 13. Yanto (2022) and Ashviyaul M et al. (2025) In his research, he thoroughly studied verses 13-19 in surah *Luqmān*. This verse has an influence on religious education and morals. Meanwhile, verse 13 is studied specifically from the perspective of tafsir and early childhood monotheism education by Liriwati (2021). However, the study did not address the neuroscience aspect of the doctrine that God must be practiced continuously. Interestingly, Apriadi (2024) In his research entitled *"Communication Ethics In Surah Al-Luqmān Verse 13 SolutionTo Generation Gap In The Family"* Finding that this verse 13 also contributes to ethical communication on the generational gap in the family. Thus, the practice in the Letter *Luqmān* Verse 13 can be seen as a model *neuroeducation* Islam, which fosters a balance between cognitive, affective, and spiritual aspects.

Some of the literature above shows a void *(research gap)* namely the lack of integrative studies that integrate the interpretation of Qur'anic verses on spiritual education supported by empirical evidence of modern neuroscience. So far, spiritual values have often been discussed in the dimensions of religion and psychology, even though this formation also involves the workings of the human brain, emotions, and consciousness (Werk et al. 2021). Meanwhile, Western studies of spiritual neuroscience tend to ignore the text of revelation as the supreme guideline of religious people. Therefore, by connecting the two, we can see how the Qur'an's teachings on divinity shape behavior that can be understood from a neuroscientific perspective.

To understand the theoretical contribution of this research, it is necessary to first explain Andrew Newberg's position in neurotheological discourse. Newberg is a neuroscientist from Thomas Jefferson University who is a pioneer in the field of neurotheology, which is an interdisciplinary study that connects neuroscience with religious and spiritual phenomena (Newberg 2018). Through a series of studies using brain imaging techniques such as SPECT and fMRI, Newberg has successfully shown that spiritual experiences correlate with the activity of certain areas of the brain, specifically the prefrontal cortex, parietal lobe, and limbic system (McNamara and

Grafman 2024). His findings reveal that spiritual practices such as prayer and meditation can induce functional changes in the brain related to feelings of transcendence, oneness, and peace. Newberg's concept of the "spiritual brain" asserts that humans have an innate neurological capacity to experience spiritual dimensions, which can be optimized through proper practice and education. The theoretical relevance of Newberg's work to this research lies in its ability to bridge the concept of fitrah in Islam with the biological mechanisms of the brain, thus providing an empirical foundation for Qur'an-based spiritual education.

The specific contribution of this research to the existing literature can be identified in three aspects. First, it is different from the previous study of interpretation which discusses the Surat Luqmān in a purely normative-theological manner (Liriwati 2021; Yanto 2022), this study integrates a neuroscience perspective to explain the biological mechanisms behind the effectiveness of the educational methods taught by Luqmān. Second, in contrast to Western neurotheological studies which tend to be general and not specific to a particular religious tradition (Rodriguez 2024), this study specifically links the findings of neuroscience with the text of the revelation of the Qur'an as the highest guideline for Muslims. Third, this research offers a conceptual synthesis that results in a model of children's spiritual education based on the integration of divine guidance and scientific understanding of brain development, an approach that is still rare in contemporary Islamic educational literature (Miftachurrozaq and Suyadi 2023; Widodo et al. 2024). Thus, this research does not simply describe the educational values in the Qur'an or summarize the findings of neuroscience, but builds a conceptual bridge between the two to produce practical implications for the development of the Islamic religious education curriculum.

Based on the background that has been described, there are problems in this study that are formulated: first, how is the form of spiritual education reflected in *Luqmān*:13. Second, how the process of spiritual development in the child's brain is said by Andrew Newberg. Third, how the concept of moral-spiritual education in the Qur'an can be synthesized with Andrew Newberg's neuroscience theory so as to produce an integrative understanding between revelation and modern science.

The objectives of this research include identifying the values of spiritual education in *Luqmān*:13. Then to get an idea of the process of children's spiritual development processed by the brain according to Andrew Newberg. After that, this research can produce a synthesis between the meaning of the verse with empirical evidence regarding the concept of children's spiritual education. With this goal, research is expected to be able to show that human spirituality is a basic potential that can be optimized through Qur'an-based education.

The novelty of this research lies in the integration of three aspects that are rarely combined. First, the Qur'an as a guideline for the formation of children's character and spirituality. Second, the neuroscience aspect in Andrew Newberg's view to explain the biological nature of human spiritual tendencies. Third, the resulting conceptual educational design is relevant to be applied in modern times. Thus, this research contributes to the development of interdisciplinary interpretations that integrate revelation with modern scientific findings. This research confirms the possibility of a dialogue between revelation and science and the rejection of the dichotomy of religion and science. The integration of interpretation and neuroscience is proof that modern

science can be a means of understanding the depth of human spirituality as described in the Qur'an.

Thus, this research departs from the belief that spirituality is a basic human potential that is rooted in the nature of creation, and can be explained and strengthened through modern brain science. Letter *Luqmān* Verse 13 shows how this potential is formed through a wise education (Liriwati 2021). When this concept is combined with Andrew Newberg's findings about how the brain works, there is an understanding that servitude to God is a manifestation of the mechanism of biological, psychological, and spiritual refinement of human beings (Newberg 2015). This is what makes research relevant for the study of modern Islam, psychology, and neuroscience that seeks to understand the whole human being.

B. METHOD

This study uses a qualitative approach with a literature study method. This type of research was chosen because the focus of the research is to integrate spiritual concepts in QS. Luqmān:13 with Andrew Newberg's theory of spiritual neuroscience in the context of children's education. The qualitative approach allows researchers to explore in depth the relationship between the Qur'anic text and the findings of contemporary neuroscience.

Primary sources consist of two categories. First, the source of interpretation of the Qur'an, especially QS. Luqmān:13 which was selected based on the criteria of the author's academic authority in the field of interpretation, the use of a tahlili approach that allows for an in-depth analysis of the meaning of the verse, and the accessibility and availability of the text. Based on these criteria, Tafsir Al-Munir by Wahbah Az-Zuhaili was chosen, which is known for its comprehensive and contextual approach, and Tafsir al-Mishbah by M. Quraish Shihab which provides a contemporary Indonesian perspective. Second, neuroscience sources are selected based on the criteria of direct relevance to the study of neurotheology and spirituality, the author's credibility in the field of neuroscience, and publication in reputable journals or academic publishers. Andrew Newberg's works were chosen as the primary source because of his position as a pioneer in the field of neurotheology.

Secondary data sources are in the form of scientific journals, books, and research results relevant to this research topic. Data was collected through library research. The initial step begins with the identification of literature using keywords such as "religious education", "interpretation of verses about education", "Andrew Newberg", "moral-spiritual brain", "neurotheology", "spiritual development children", and combinations. Searches are conducted through Google Scholar databases, Scopus, and institutional repositories. After the data is collected, filtering is carried out based on title, abstract, and topic suitability. Literature that does not meet the relevance criteria is eliminated. The next stage is to ensure the feasibility of the selected sources through a methodological evaluation, authors' credibility, and academic legitimacy.

Data analysis is qualitative descriptive with an intertextual-synthesis approach. The synthesis process is carried out through three stages. The first stage is a separate thematic analysis, which is to identify the values of spiritual education in Luqmān:13 through an in-depth reading of the text of the commentary and extract key concepts from Newberg's theory of spiritual brain development. The second stage is correspondence mapping, which is compiling a matrix of relationships between the

concept of the Qur'an and neuroscience findings by paying attention to the conceptual fit between the principles of education in verse and neurological mechanisms, the relevant stages of age development, and the practical implications for education. The third stage is the construction of synthesis, which is to build an integrative framework that connects the two perspectives without reducing the peculiarities of each, with the Qur'an positioned as the main text that dialogues with Newberg's thought. To ensure the validity of the analysis results, this study applied a triangulation technique. Source triangulation is carried out by comparing various sources with national and international reputation.

C. RESULT AND DISCUSSION

Spiritual Education in *Luqmān*:13

Children's spiritual education is the process of cultivating the innate potential to feel connected to self, others, nature, and God through a holistic experience that involves reflection, creativity, and social interaction in a supportive environment (Eau 2025). Children's spiritual education, which is synonymous with religion, focuses on the knowledge of God as the source of spirituality and the realization of a clear spiritual life in all aspects of the child's life (Kiyani et al. 2021).

Children's spiritual education is understood as part of the overall development of children that includes cognitive, physical, social-emotional, and spiritual dimensions. Spiritual capacity must be developed along with other aspects of development such as moral education or others. Educators must be provided with a framework or guidelines to support early childhood spiritual development (Robinson et al. 2025). The verses in the Qur'an that contain the meaning of spiritual education are as follows:

عَظِيْمٌ لَظُلْمٌ الشِّرْكَ اِنَّ بِاللّٰهِۗ تُشْرِكْ لَا يٰبُنَيَّ يَعِظُهٗ وَهُوَ لِابْنِهٖ لُقْمٰنُ قَالَ وَاِذْ ﴿١٣﴾

" *(Remember) when Luqmān said to his son, when he was advising him, 'O my son, do not associate with Allah! Indeed, associating with (Allah) is indeed a great tyranny'."* Qs. *Luqmān*:13

In this verse it is described that *Luqmān* was a wise and loving father. He gave advice to his son, as a form of affection for him. *Luqmān* al-Hakim said to his son, to worship Allah SWT and never associate with Him. The act of shirk is a tyranny because shirk means putting something out of place. As for why shirk is the greatest tyranny because shirk is a tyranny related to the principle of aqidah, equalizing, and equalizing between the Most Merciful and something that is not able to give any blessing at all, namely the worship of non-Muslims (Az-Zuhaili 2013, Jilid 11, p.170). At first his son was a polytheist, then *Luqmān* al-Hakim advised him to continue until the end of the child converted and converted to Islam. Wills and advice *Luqmān* al-Hakim to his son finally succeeded (Az-Zuhaili 2013, Jilid 11, p.174).

The above verse hints that educating should be based on affection for students. *Luqmān* began his advice by emphasizing the need to avoid shirk/associating with Allah. This prohibition also contains a teaching about the form and oneness of God. It is

necessary to abandon something bad before executing a good one. Indeed, getting rid of the bad is more important than wearing jewelry.

Laughter *Ya'iẓuhu* meaning advice concerning various virtues in a way that touches the heart. The mention of this word gives an idea of how the advice is delivered, that is, not yelling, but loving saying as understood from the call "O my son". This word also implies that the advice is carried out from time to time, as understood from the present tense verb form and comes to the word *Yaidzuhu* (Shihab 2002, Jilid 11, p.126-127).

Based on the description above, there are several things that can be used as a foothold in the practice of children's monotheism education, namely:

1. The main priority in educating children is monotheism. Children must know their God before they come to the education of character and the practice of worship.
2. The prohibition of shirk is also included in the early stages of moral education, because shirk is a form of injustice to the nature of God's existence.
3. The delivery of monotheistic education is carried out repeatedly and delivered with a gentle and loving dialogue so that children can feel, digest, and think, not just memorized commands.

The Development of the Spiritual Brain of the Child Andrew Newberg Theory

1. Phase 1: Early Life and Basic Belief Formation (0–2 years)

Newborns do not yet have visible trust. Their brains are still in the primitive stage of development, barely able to piece together sensory information. The baby is not yet able to distinguish right and wrong because his brain function is immature (Newberg and Waldman 2013, p.191). Over time, there is a drastic increase in the brain's glucose metabolism, more than doubling that of adults. This indicates that there is activity in the part of the brain. This high activity occurs in the sensorimotor area, thalami, brainstem, and cerebellar vermis. The brain is highly plastic and responsive to non-verbal experiences (Werk et al. 2021).

At this early stage, brain development is highly dependent on the quality and intensity of the caregiver. If the quality of parenting is poor and the baby is often neglected, the baby's brain will experience disturbances, especially in the function and growth of his brain. They will be more susceptible to mental and physical illness. Strong feelings of insecurity can hinder your baby's ability to cope with stress later. Babies who rarely interact with their caregivers cause a lack of reciprocal relationships between brain cells so that there is minimal organization in the brain. Inappropriate parenting leads to low cognitive function and inhibits the development of social skills. On the other hand, loving parenting, interaction, environmental enrichment, and more can repair the damage caused by previous stress. A baby's brain that grows in a healthy, loving and stimulating environment will show increased neural activity and maturity. Theoretically, this child will experience lower anxiety and depression later in life, and exhibit greater social skills towards others (Newberg and Waldman 2013, p.192).

In infants, trust and attachment to caregivers are formed through non-verbal and ritual experiences. Healthy parenting creates a sense of security and fosters confidence in the baby. The more time the baby spends with the caregiver, the more consistent and progressive the baby can grow his spirituality by observing how the caregiver's habits

are in worship practices. That's the importance of a good baby being well cared for by a good caregiver.

2. Phase 2: Early Moral Formation and Spiritual Imagination (2–6 years)

In the mysterious part of the brain (frontoinsular cortex) there is a unique structure called spindle cells, which appear at around four months of age and gradually increase in number and size in the first three years of life. Spindle cells are only found in primates and humans, which function to develop morals. These cells need years to develop, which is why children under four years old cannot play honestly or follow instructions. Developmentally, young children don't have much clue about how any form of play, friendship, brotherhood, or life in general works. They just learn how to get along with others, and once they have mastered the simple rules, they begin to build basic cooperative beliefs (Newberg and Waldman 2013, p.194).

At this stage their logic is still weak and their sense of morality is just beginning. Children do begin to make moral judgments, but the circuits that govern moral consciousness take years to mature. If the brain is injured during this time, it is likely that the child will lose the ability to respond effectively to emotional and social cues (Newberg and Waldman 2013, p.195). For children, the concepts of determining right and wrong are more difficult to understand than determining good and bad (Newberg and Waldman 2013, p.194).

The young child's brain has too many neurons in the frontal lobe, which is the area responsible for the control of logic, reason, and consciousness. This over-the-top relationship leads to an increase in fantasies that give rise to belief in monsters, fairies, and other imaginative creatures. Children are not yet able to distinguish between reality, fantasy, and dreams (Newberg and Waldman 2013, p.195). The child begins to express thoughts verbally and shows magical thoughts about God. They are not yet able to think abstractly, making spirituality imaginative and concrete (Werk et al. 2021).

With this, the moral-spiritual development of the child is rooted in the gradual biological and neurological processes in the brain. The ability to distinguish right and wrong and to understand social rules is closely related to the maturity of spindle cells. Moral education is ineffective if it is forced before the brain is ready to accept it. Education should focus on example, compassion, and a positive emotional environment. The approach can be through *story telling* considering that children's morals need to be matured while children's logic and fantasies are still mixed, so that religious messages and beliefs can be conveyed and formed through the stories told.

3. Phase 3: Moral Realism and the Formation of the Image of God (6–10 years)

With the passage of time, these excess nerve connections slowly erode as the brain decides which neural circuits are most useful for survival. During the pruning process, most children will develop a more realistic view and discard their belief in magic even if it is not completely. After that, they will use the most important means to help them organize their feelings and thoughts about the world, which is storytelling (Newberg and Waldman 2013, p.196).

Children seem to experience moral conflicts themselves and their resolutions, which are very meaningful in the future. Adult belief systems with regard to religion

and spirituality will contain important remnants of stories heard and read as they grow up (Newberg and Waldman 2013, p.197). Along with the conscious recognition of selfhood, the young child also comes to the realization that he or she can die. This knowledge can be very frightening, and the belief in the afterlife can be a relief. Belief in life after death is often introduced to a child through religious stories and fairy tales that may depict the existence of a wonderful world beyond the boundaries of life (Newberg and Waldman 2013, p.197).

In children's conversations, God also tends to have an authoritarian personality that is sometimes kind, sometimes punishing. The foundation of our consciousness and our first image of God is built up by our parents. as children begin to accept God's presence, they also struggle to establish working concepts of right and wrong, good and bad, an important step toward the development of socially acceptable behavior. In this sense, religious teachings help children to build their basic moral beliefs. However, because cognitive functions are not yet fully working, young children mix logic with fantasy and fear (Newberg and Waldman 2013, p.198).

Parents instinctively sometimes instill fear of God's wrath as they seek to encourage their children to behave in certain ways. A punishing God, like a punishing parent, encourages children to instill scary and potentially destructive concepts. With the development of negative beliefs, the concept is also embedded in the neuronal connections that form in the brain, making it difficult to get rid of later on. Fortunately, on the other hand, the majority of religious groups have succeeded in instilling faith in a God who is Most Merciful and Forgiving can give the child a feeling of optimism and security (Newberg and Waldman 2013, p.200).

Based on the above explanation, the brain provides neurological structure and readiness to understand moral and spiritual values. Through religious stories and experiences, children obtain moral content and direction that guide the way of thinking and feeling the meaning of life. Meanwhile, the role of parents and the environment is a determining factor in forming beliefs and spirituality.

Phase 4: Self-Reflection and Spiritual Responsibility (10 years and above)

As discussed earlier at the age of between six and ten, children are increasingly paying attention to the separation between fantasy and reality. They are also more attentive to personal conversations and stories related to membership in a community or group. This is an important step towards the development of self-belief in a social context (Newberg and Waldman 2013, p.200). In this way, children learn to understand the skeleton if they give a toy to a friend, they can take one instead, without the friend getting angry. Relationship exchanges are also based on bonds of loyalty and gratitude, and when someone does very well to the child, the child is more likely to reciprocate (Newberg and Waldman 2013, p.201). Driven by narcissistic impulses and desires, they still find it difficult to hold on to ideas such as equality, honesty, and justice. They may act in accordance with morality for fear of punishment, but if given the opportunity they will put morality aside and tend to be selfish (Newberg and Waldman 2013, p.201).

The older the child, the more logical his or her intellect becomes, and the more they believe in the validity of their thoughts. They express confidence in an absolute framework, but they have not had enough ability to back down and question its

accuracy (Newberg and Waldman 2013, p.202). During this period, the brain continues to "trim" or reduce connections between nerve cells, a process that is essential for the development of complex logic systems. Useless thoughts and the circuits that support them, are destroyed, while the neural connections that support important beliefs are strengthened. For example, when a six-year-old child learns math, dozens of neural circuits are formed as the brain tries to figure out what 1 + 1 means. The answer is 2, or 3, or 11? The circuit that comes with the wrong answer is trimmed or discarded, and the remaining circuit is established as true: 1 + 1 = 2, and that's it. But more complex beliefs, including social, political, and religious beliefs, require a lot of interconnection, and therefore the process of perennial has a dramatic effect on the overall way the person in question thinks about the world (Newberg and Waldman 2013, p.203).

Moral-Spiritual Education Strategies based on the Integration *of Luqmān*:13 values and Andrew Newberg's Neuroscience

Table 1. *Luqmān-Based* Moral-Spiritual Education Strategies:13 and Andrew Newberg

Phase	The Value of Education (*Luqmān*:13)	Theory Newberg	Educational Strategy
1	education with affection and continuity.	The limbic & thalamus system develops; form a sense of security and spiritual attachment.	Loving parenting, joint prayer, introduction of repetitive and simple words (*bismillah*, *alhamdulillah*).
2	The cultivation of monotheism through gentle dialogue.	Spindle cells grow; the basis of empathy & morality; Imagination and reality are still mixed.	*Storytelling* of religious values, gratitude, example of love, avoiding threats, practicing short prayers with *solemnity*.
3	The value of responsibility and awareness of Allah; The prohibition of shirk is emphasized.	*Synaptic pruning* i.e. logic and moral consciousness increase; the image of God is formed.	Social practices (honesty, helping), forming self-regulation through worship practices such as prayer and dhikr.
4	Gratitude, patience, and good deeds. Spiritual Responsibility.	*Default mode network* matures; self-reflection & meaning of life increases.	Discuss religion, uphold prayer, faith-based social practices.

The results of the study show that the religious education strategy is formulated from the integration of QS. *Luqmān:13* and Andrew Newberg's neuroscience theory provides an understanding of how the values of monotheism can be instilled effectively and gradually adjust to the development of the child's brain and consciousness. Educational strategies are in line with the maturity of the nervous system which

underlies the emergence of morality, empathy, and self-reflection. This interpretation answers the main question of the research, namely how the principles of education in QS. *Luqmān:13* which emphasizes gentleness, monotheism, and moral responsibility can be applied by considering the mechanisms of brain development as described by Newberg. The study of the neural mechanisms of spiritual and religious experiences is important. Not only in itself but also in understanding the dynamics of largely self-generated cognitive processes and their evolutionary development (Jedlicka and Havenith 2025).

At the age of 0–2 years, the baby's brain is dominated by limbic activity that regulates a sense of security and attachment. A positive emotional experience with the caregiver will form a pattern of basic trust in the world and in God. This is in line with the concept of fitrah in Islam that humans are born with the potential to know God, but need an environment and a loving relationship to grow him (Anggraini 2018). In the verse, *Luqmān* teaching tauhid through a loving call"*yā bunayya*" which emphasizes that moral and spiritual education begins with a gentle approach.

This approach is in line with the results of neuroscience research that shows that children's limbic and thalamus systems develop optimally at an early age when receiving positive emotional stimuli. Therefore, the foundation of religious education in early life is based on emotional relationships and affection (Rodriguez 2025). Thus, this integration between neuroscience and Qur'anic values shows that the first basis of faith was formed not from logical explanations, but from the experience of love. Exemplifying behavior is easier for them to absorb than to tell (Eau 2025). Education can be applied together through simple and repetitive speech, for example *bismillah* and *alhamdulillah* when you want to or have done something. Another example is the habit of caregivers in worship, for example prayer. Babies will instinctively grasp and understand non-verbally "oh, this is called prayer".

In the next developmental phase (2–6 years), the child begins to show signs of early moral awareness and simple empathy skills. Newberg found that during this time the cells *spindle* is rapidly developing, playing an important role in social emotional processing and moral judgment. It should be noted that the image form of God and his authority should not be conveyed in the form of threats. Psychologically, children of this age learn to recognize the concept of right and wrong through stories that involve emotions. Therefore, the right religious education strategy is to use the narrative method (*storytelling*) that contains spiritual values, the stories of the prophets, and concrete moral experiences. Religious stories not only serve as a cognitive tool, but also as an emotional stimulus that strengthens the neural pathways of empathy and spiritual meaning in the child's brain. Children's responses are based more on experiences and feelings than on beliefs and cognition (Eau 2025).

In this phase, emphasis began to be placed on the command to obey Allah and the prohibition of associating with it. In addition, it is also recommended to introduce the attributes of Allah. *Storytelling* Help children recognize that there are unseen, inherently mysterious realities outside of individual lives, so we should all be more open to those things (Eau 2025). For example, through religious stories, children will understand that prayer is good and understand why they should pray.

Furthermore, in the elementary school age phase (6–10 years), children experience major changes in their brain structure through the process *of synaptic pruning*, in which excessive neural connections are simplified to become more efficient.

This change makes children's thinking more realistic and logical. Children begin to understand the concepts of moral cause and effect, social responsibility, and the consequences of actions. *Luqmān*, in the following verses, emphasizes the importance of an awareness of God's supervision of every deed, which is the highest form of moral responsibility education. Spiritual norms influence children's habits in behaving towards the environment (Siagian et al. 2023). This fae coincides with a strengthening of the connection between the prefrontal area and the limbic system which allows for more mature regulation of emotions and moral judgment.

This interpretation is in line with Newberg's theory which emphasizes that positively conveyed religious experiences strengthen the balance between the left (logical) and right (emotional) brains. Religious education at this stage should invite children to reflect on the meaning of justice, helping others, and the universal truths taught by religion (Viftrup et al. 2024). For example, applying the principle of *Tasawwuf* Al-Ghazālī emphasizes the principles of balance, justice, and wisdom in attitude by making God the center of social and religious life (Purwanto et al. 2023). This approach helps children internalize the concept of monotheism rationally and emotionally at the same time, in accordance with their brain functions that are starting to balance. In this case, his morals will be formed and his logical reason will lead to how to pray correctly and in accordance with Allah's commands.

In the late phase (10 years and above), the maturation of brain structures is mainly in the tissues *default mode network (DMN)* enabling children and adolescents to develop the ability to self-reflect, awareness of the meaning of life, and deeper spiritual connections. *Luqmān* emphasizing the values of gratitude, patience, and righteous charity, which in the context of neuroscience are related to the activity of the prefrontal cortex in regulating positive emotions and strengthening the sense of existential meaning. Spiritual activities such as prayer, dhikr, and self-reflection have been scientifically proven to improve connectivity between the frontal and limbic areas, which reduces stress and strengthens emotional balance (Newberg et al. 2015). Self-regulation is important to instill because it has an impact on mental health and social abilities (Ma'ruf et al. 2025).

In this phase they can think logically and be aware of the certainty of life and death. Children use several spiritual, religious, and existential concepts and understandings to relate to the reality of death and express how they believe that life should be lived. Although children do not always believe in God, Satan, heaven, or hell, these concepts are still important for their understanding of right and wrong, as well as for their values of how to behave and treat others (Viftrup et al. 2024). Another example of application, they are used to upholding prayers consciously based on faith and sharia.

From the perspective of previous studies, these results expand on Islamic moral-spiritual education theories that generally emphasize normative aspects, adding an empirical basis to neuroscience. This research shows that every value in the Qur'an has a correlation with a biological mechanism that can be explained scientifically. Thus, the integration of *Luqmān* and Newberg opens up a new direction for the *brain-based Islamic education* approach.

The next direction of research can be focused on empirical exploration through the measurement of children's brain activity in worship and religious teaching activities. In addition, the research can expand the study on other verses related to the learning

process, awareness, and self-control, so that a comprehensive map of the relationship between the Qur'an and educational neuroscience is formed.

Overall, the results of this study emphasize that effective religious education is an education that understands children as bio-psycho-spiritual beings. *Luqmān's* values serve as a spiritual map, while neuroscience provides an understanding of the underlying biological mechanisms. The integration of the two gives birth to a religious education model that is more humanistic, scientific, and in accordance with the nature of child development. Such education can foster knowledge of God and form an empathetic, calm, and morally responsible personality. With this integrative approach, Islamic education not only leads children to know God, but also helps them experience God in their consciousness structure.

Practical Application in the Context of Education

To illustrate how this integration can be applied practically, here are examples of applications at various levels of education. At the early childhood education level (PAUD/RA, aged 3-6 years), in accordance with neuroscience findings that the limbic system and emotional area develop rapidly in this phase, the recognition of monotheism can be carried out through a sensory-emotional approach. A concrete example is the activity "Knowing God Through His Creation" where the teacher invites children to observe nature (flowers, butterflies, rain) while mentioning the name of Allah as the Creator. This activity takes advantage of the high plasticity of the child's brain and associates the name of Allah with positive emotional experiences (awe, delight), so that the spiritual foundation is formed through the limbic-emotional pathway before progressing to cognitive understanding. This method is in harmony with the Luqmān principle of conveying counsel with gentleness (ya'iẓuhu), creating a sense of security that supports the development of spiritual attachment.

At the elementary school level (MI/SD, age 7-12 years), when the prefrontal cortex begins to develop more maturely and the child is able to think operationally concretely, monotheistic education can be extended to the cognitive-reflective dimension. An example of this is the "Journal of Daily Reflection" program in which students write down daily experiences that demonstrate God's presence and help, then discuss them in small groups. Writing activities involve the prefrontal cortex in the process of reflection, while group discussions activate a social brain area that is the temporal-parietal junction that supports the formation of empathy and moral awareness. This activity implements the principle of repetition (ya'iẓuhu in the form of the verb mudhari' indicating continuity) through a daily routine that forms a new neural pathway (neuroplasticity) related to spiritual awareness.

At the secondary school level (MTs/Junior High School, aged 12-15 years), along with the development of the default mode network (DMN) that allows deep self-reflection, spiritual education can be upgraded to an existential level. An example of its application is the "Tadabbur and Contemplation" program which invites students to reflect on the meaning of the verses of monotheism in the context of their personal lives, followed by the practice of short dhikr and reflective journaling. Neuroscience research suggests that this kind of meditative practice can improve connectivity between the prefrontal cortex and the limbic system (Newberg 2023) which in turn supports the regulation of emotions and the formation of a solid spiritual identity. The program can also be integrated with science learning to demonstrate the alignment between

scientific findings and the teachings of the Qur'an, reinforcing an integrative approach to science-revelation from an early age.

Previous research has shown the effectiveness of the brain-based learning approach in the context of Islamic religious education. Study by Somantri et al. (2024) found that the brain-based learning model can improve the learning outcomes of Islamic religious education in junior high school students. Similarly, research Widodo et al. (2024) The integration of neuroscience and Islamic education in Yogyakarta primary schools shows that this approach contributes to the establishment of child-friendly schools that pay holistically to cognitive, emotional, and spiritual aspects. These findings strengthen the argument that the educational model based on neurospiritual integration resulting from this study has real applicability potential in the context of Islamic education in Indonesia.

D. CONCLUSION

This research confirms that the value of monotheistic education in QS. Luqmān verse 13, especially delivered through a compassionate approach and ongoing dialogue, has a conceptual fit with the mechanisms of child brain development as described in Andrew Newberg's neuroscience theory. The integration of Qur'an interpretation and neuroscience shows that the moral and spiritual formation of children does not only take place in the normative-theological realm, but also involves biological processes that play a role in the development of empathy, moral awareness, and self-reflection. These findings reinforce the argument that religious education works effectively when it is aligned with the child's neuropsychological developmental stages.

The practical implications of this study lead to the need to develop an Islamic education curriculum that takes into account the neurological readiness of students. Tawhid education at an early age should emphasize positive emotional experiences and examples, while at the later stages of development it is directed at the formation of moral responsibility and spiritual awareness through meaningful worship practices. Therefore, the development of neurospiritual-based learning modules and the improvement of educators' competence in an integrative approach between revelation and science are strategic steps that can be considered by educational institutions and policy makers.

This research still has limitations because it is conceptual and based on literature studies. Therefore, further research is recommended to conduct empirical testing of the application of this neurospiritual education model, both through pedagogical observation and measuring its impact on children's moral and spiritual development. Further study can also expand the analysis of other Qur'anic verses related to learning, self-awareness, and emotional control, thus forming a more comprehensive framework in the development of Islamic education based on the integration of revelation and neuroscience.

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