

ACADEMIC DISCOURSES ON THE COGNITIVE REVOLUTION AND THE REPOSITIONING OF ISLAMIC EDUCATION IN THE ERA OF NEUROSCIENCES

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Abstract

This article explores academic discourse on repositioning of Islamic education in light of the cognitive revolution and advancements in neurosciences. The study aimed at exploring the implications of these developments for Islamic education and the potential integration of cognitive and interdisciplinary perspectives into educational practices. The study reviewed literature and emphasized the importance of Islamic education embracing contemporary understandings of cognition and neuroscience. It also discussed the potential integration of monotheistic ontology, a core principle of Islamic belief, into educational methodologies. The findings highlighted the need for Islamic education to incorporate innovative approaches that align with cognitive science and neuroscience. It emphasized fostering critical thinking, problem-solving skills, moral reasoning, and social responsibility within an Islamic educational framework. The study contributed to the academic discourse by emphasizing the importance of further research, implementation, and the development of comprehensive frameworks for integrating cognitive and interdisciplinary perspectives into Islamic education. In conclusion, this study underscored the significance of repositioning Islamic education in response to the cognitive revolution and advancements in neurosciences. It emphasized the potential for incorporating contemporary understandings of cognition and neuroscience into educational practices while staying rooted in the principles of Islamic belief.

Keywords: *Cognitive revolution, Repositioning, Islamic education, Neurosciences, Integration, Contemporary understandings, Academic discourse*

Abstrak

Artikel ini merangkum wacana akademis tentang reposisi pendidikan Islam dalam terang revolusi kognitif dan kemajuan ilmu neurosains. Studi ini bertujuan untuk

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mengeksplorasi implikasi dari perkembangan ini untuk pendidikan Islam dan potensi integrasi perspektif kognitif dan interdisipliner ke dalam praktik pendidikan. Kajian ini meninjau literatur dan menekankan pentingnya pendidikan Islam merangkul pemahaman kontemporer tentang kognisi dan neurosains. Kajian ini juga membahas potensi integrasi ontologi monoteistik, prinsip inti keyakinan Islam, ke dalam metodologi pendidikan. Temuan ini menyoroti perlunya pendidikan Islam untuk memasukkan pendekatan inovatif yang selaras dengan ilmu kognitif dan ilmu neurosains. Ini menekankan membina pemikiran kritis, keterampilan memecahkan masalah, penalaran moral, dan tanggung jawab sosial dalam kerangka pendidikan Islam. Studi ini berkontribusi pada wacana akademik dengan menekankan pentingnya penelitian lebih lanjut, implementasi, dan pengembangan kerangka komprehensif untuk mengintegrasikan perspektif kognitif dan interdisipliner ke dalam pendidikan Islam. Sebagai kesimpulan, penelitian ini menggarisbawahi pentingnya reposisi pendidikan Islam dalam menanggapi revolusi kognitif dan kemajuan ilmu saraf. Ini menekankan potensi untuk menggabungkan pemahaman kognisi dan ilmu saraf kontemporer ke dalam praktik pendidikan sambil tetap berakar pada prinsip-prinsip keyakinan Islam.
Kata Kunci: Revolusi Kognitif, Repositioning, Pendidikan Islam, Neurosciences, Integrasi, Pemahaman Kontemporer, Wacana Akademik

مستخلص

يلخص هذا الملخص الخطاب الأكاديمي حول إعادة وضع التربية الإسلامية في ضوء الثورة المعرفية والتقدم في علوم الأعصاب. هدفت الدراسة إلى استكشاف آثار هذه التطورات على التربية الإسلامية والدمج المحتمل لوجهات النظر المعرفية ومتعددة التخصصات في الممارسات التربوية. استعرضت الدراسة الأدبيات وأكدت على أهمية التربية الإسلامية التي تتبنى المفاهيم المعاصرة للإدراك و علم الأعصاب. كما ناقش التكامل المحتمل للأنطولوجيا التوحيدية، وهو مبدأ أساسي من مبادئ العقيدة الإسلامية، في المنهجيات التربوية. سلطت النتائج الضوء على الحاجة إلى أن يتضمن التعليم الإسلامي مناهج مبتكرة تتماشى مع العلوم المعرفية و علم الأعصاب. وأكد على تعزيز التفكير النقدي ومهارات حل المشكلات والتفكير الأخلاقي والمسؤولية الاجتماعية في إطار تعليمي إسلامي. ساهمت الدراسة في الخطاب الأكاديمي من خلال التأكيد على أهمية إجراء مزيد من البحث والتنفيذ وتطوير أطر شاملة لدمج المنظورات المعرفية ومتعددة التخصصات في التربية الإسلامية. في الختام، أكدت هذه الدراسة على أهمية إعادة وضع التربية الإسلامية استجابة للثورة المعرفية والتقدم في علوم الأعصاب. وشدد على إمكانية دمج الفهم المعاصر للإدراك و علم الأعصاب في الممارسات التعليمية مع البقاء متجذراً في مبادئ العقيدة الإسلامية.

الكلمات الرئيسية: الثورة المعرفية ; إعادة التوضع ; التربية الإسلامية; علوم الأعصاب ; التكامل ; التفاهات المعاصرة ; الخطاب الأكاديمي

A. Introduction

This paper addresses various essential aspects of Islamic education in response to the cognitive revolutions and the needs of a knowledge-based society. The cognitive revolution in Islamic education is an ongoing process that requires attention and development.¹ Integrating

¹ Atmaja, H. S. (2001). Feritin serum laki-laki usia 35 tahun atau lebih dan faktor-faktor yang berhubungan di Kecamatan Mampang Prapatan.

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monotheistic ontology and cognitive domain is crucial for transforming Islamic education.^{2 3}. However, there have been challenges in harmonizing words, images, forms, and sensations within Islamic education.⁴ and thus the developmentn of reasoning and cognitive studies in Islamic education has experienced delays.⁵ It is important to explicate the methodological framework of the ontological paradigm of monotheism in educational practices.⁶

The Faculty of Education and Teacher Training plays a crucial role in responding to the emerging of ne direction of Islamic education⁷. It must design a curriculum that aligns with the cognitive revolution and integrates cognitive design based on the monotheistic theology.⁸ The faculty should focus on fostering critical thinking and metacognitive skills.⁹ Furthermore, it must consider the diversity of communities and changing environments in Islamic education,¹⁰by incorporating flexible Islamic principles and applying cognitive systems and neuroscience approaches, the faculty can equip educators with the necessary tools to navigate the challenges of the cognitive revolution within an Islamic educational context.¹¹

The potential impact of these efforts is substantial. Islamic education can enhance students' cognitive skills, problem-solving, and critical-thinking abilities.¹² It can empower students to thrive in a knowledge-based society and contribute to developing a well-rounded and educated community. Moreover, by nurturing a holistic understanding of knowledge within the framework of Islamic education, students can develop a comprehensive understanding of reality.¹³ However, there is a need for further research and implementation in Islamic education.¹⁴This includes conducting rigorous studies to explore the effectiveness of various methodologies and pedagogical approaches. It also involves creating dynamic learning

² Hendricks, F., Galvaan, R., & al-Ninowy, S. M. B. Y. (2022). Tensions in describing Muslim religious practices: Insights generated from an Islamic monotheist perspective. *Journal of Occupational Science*, 1-11.

³ Ropi, I. (2019). Whether religious moderation? The state and management of religious affairs in contemporary Indonesia. *Studia Islamika*, 26(3), 597-602.

⁴ Masrukhin, M. Y. (2021). KEYAKINAN SEBELUM ILMU KALAM: AKTUALISASI IMAN, TAKDIR, DAN KESALEHAN DI MASA ISLAM AWAL. *Khazanah: Jurnal Studi Islam dan Humaniora*, 19(2), 180-202

⁵ Kartanegara, M. (2007). *Mengislamkan Nalar: Sebuah Respon Terhadap Modernitas*. Erlangga.; Atmaja, H. S. (2001). Feritin serum laki-laki usia 35 tahun atau lebih dan faktor-faktor yang berhubungan di Kecamatan Mampang Prapatan.

⁶ Masrukhin, M. Y. (2021). KEYAKINAN SEBELUM ILMU KALAM: AKTUALISASI IMAN, TAKDIR, DAN KESALEHAN DI MASA ISLAM AWAL. *Khazanah: Jurnal Studi Islam dan Humaniora*, 19(2), 180-202

⁷ Kartanegara, M. (2007). *Mengislamkan Nalar: Sebuah Respon Terhadap Modernitas*. Erlangga.

⁸ Kartanegara, M.

⁹ Mahmud, S., Musfirah, A. R., Marlina, C. N., Fitria, S., Bujangga, H., Pranajaya, S. A., & Alfianto, A. (2024). Integrating Howard Gardner's Multiple Intelligences in Islamic Education: A Systematic Review of Indonesian Practices. *Jurnal Ilmiah Peuradeun*, 12(3), 1017-1050.

¹⁰ Perdana, R. (2020). Perkembangan kognitif dalam Islam dan model bioekologi urie bronfenbrenner untuk hidup di era revolusi 4.0.

¹¹ Tokuhama-Espinosa, T. (2010). *Mind, brain, and education science: A comprehensive guide to the new brain-based teaching*. WW Norton & Company.

¹² Kartanegara, M. (2007). *Mengislamkan Nalar: Sebuah Respon Terhadap Modernitas*. Erlangga; Atmaja, H. S. (2001). Feritin serum laki-laki usia 35 tahun atau lebih dan faktor-faktor yang berhubungan di Kecamatan Mampang Prapatan.

¹³ Johnson, D. M., & Erneling, C. E. (Eds.). (1997). *The future of the cognitive revolution*. Oxford University Press on Demand.

¹⁴ Ropi, I. (2017). *Religion and regulation in Indonesia*. Springer.

environments that cater to the diverse needs of students. By embracing the cognitive revolution, integrating monotheistic ontology, and prioritizing students' intellectual and moral growth, Islamic education can contribute significantly to developing knowledgeable, ethical, and actively engaged individuals in their communities¹⁵.

The primary objective of this study is to delve into the evolving landscape of Islamic education in light of advancements in cognitive studies and neuroscience, particularly in response to the cognitive revolution. By exploring the repositioning of Islamic education within this cognitive revolution and incorporating findings from neurosciences, the aim is to understand how Islamic education can adapt and respond to these developments.¹⁶

Another objective is to emphasize the importance of a holistic educational approach within the context of Islamic education. This involves recognizing the interconnectedness of various dimensions of human experience, including cognitive, emotional, and spiritual development.¹⁷ Johnson and Erneling¹⁸ Argue that a holistic approach is vital in understanding human cognition and metacognition, enabling the nurturing of well-rounded individuals with intellectual capabilities, emotional intelligence, and spiritual awareness.¹⁹

Additionally, this study aims to investigate the integration of monotheistic ontology into educational methodologies within the Islamic education. Mustari Bosra et al.²⁰ highlight the importance of incorporating the monotheistic theological paradigm as a fundamental aspect of shaping cognitive intelligence in Islamic education, aligning with humanistic and egalitarian principles.²¹ By examining how monotheistic ontology can be methodologically integrated into educational practices, this objective seeks to inform the design and implementation of curricula aligning with Islamic teachings' core principles.

Furthermore, this study examines the potential impact on students' intellectual and academic growth resulting from the repositioning of Islamic education within the cognitive revolution and neurosciences. Islamic education can enhance students' cognitive processes,

¹⁵ Muhtifah, L., Mahrus, E., & Rahmiani, N. (2022). E-Learning Flipped Classroom: Instituting an Integrated Islamic Education Paradigm for Character Building. *Nazhruna: Jurnal Pendidikan Islam*, 5(1), 244-260.

¹⁶ Suyadi, S. (2019). Hybridization of Islamic Education and Neuroscience: Transdisciplinary Studies of Aql in the Quran and the Brain in Neuroscience. *Dinamika Ilmu*, 19(2), 237-249.

¹⁷ Ismail, I., Ali, H., & Us, K. A. (2022). Factors Affecting Critical and Holistic Thinking in Islamic Education in Indonesia: Self-Concept, System, Tradition, Culture. (Literature Review of Islamic Education Management). *Dinasti International Journal of Management Science*, 3(3), 407-437.

¹⁸ Johnson, D. M., & Erneling, C. E. (Eds.). (1997). *The future of the cognitive revolution*. Oxford University Press on Demand.

¹⁹ Bosra, M., & Umiarso, U. (2020). Theological moderation in the Islamic boarding school (pesantren): Phenomenological prophetic social study in pesantren in East Java. *Akademika*, 25(01), 117-138.

²⁰ Rothman, A. E. D. (2019). *Building Islamic psychology and psychotherapy: a grounded theory study* (Doctoral dissertation, Kingston University).

²¹ Rothman, A. (2021). *Developing a model of Islamic psychology and psychotherapy: Islamic theology and contemporary understandings of psychology*. Routledge.

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critical thinking skills, and metacognitive abilities by adopting cognitive domains based on monotheistic theology. Empirical evidence of the positive outcomes, such as improved academic achievement, enhanced problem-solving skills, and a deeper understanding and application of knowledge, will be explored²².

This paper explores the cognitive revolution in Islamic education, highlighting the integration of monotheistic ontology and cognitive design. It has also discussed challenges in harmonizing different elements within Islamic education and the role of the Faculty of Education in responding to these changes. The Research questions are:

1. How can the cognitive revolution be effectively integrated into Islamic education to enhance students' cognitive, problem-solving, and critical-thinking skills?
2. What methodological frameworks can be developed to incorporate the ontological paradigm of monotheism in educational practices within the context of Islamic education?
3. How can dynamic learning environments be created in Islamic education to cater the diverse needs of students and promote their intellectual and moral growth?

In conducting the research on the cognitive revolution and the repositioning of Islamic education in the era of neurosciences, a comprehensive literature review was conducted to gather relevant scholarly articles, books, and research studies. The cited sources provide a basis for the discussion and analysis presented in this paper.²³

The discussion in this paper explored various aspects of the cognitive revolution in Islamic education, including the integration of monotheistic ontology and cognitive domain, challenges in harmonizing different elements within Islamic education, and the role of the Faculty of Education in responding to these changes²⁴. The expected final results of this academic discourse are to shed light on the importance of embracing the cognitive revolution and integrating cognitive domain within Islamic education. It aims to highlight the potential impact of such integration on students' cognitive skills, critical thinking abilities, and overall intellectual and moral development.²⁵ By presenting a comprehensive overview of the topic and drawing from relevant scholarly sources, this paper aims to contribute to the academic

²² Choudhury, M. A., & Bhatti, I. (2016). *Heterodox Islamic Economics: The emergence of an ethical-economic theory*. Routledge.

²³ O'Mara, S. (2015). *Why torture does not work: The neuroscience of interrogation*. Harvard University Press.

²⁴ Sahin, A. (2018). Critical issues in Islamic education studies: Rethinking Islamic and Western liberal secular values of education. *Religions*, 9(11), 335.

²⁵ Powley, E. H., & Taylor, S. N. (2014). Pedagogical approaches to develop critical thinking and crisis leadership. *Journal of Management Education*, 38(4), 560–585.

understanding and discourse surrounding the repositioning of Islamic education in light of the cognitive revolution and advancements in neuroscience.

B. Discussion

1. *Emotional Cognitive Center in the Amygdala*

In Southeast Asia and the Islamic world, studying the cognitive relationship with the amygdala as the center of human emotions is relatively new. At the same time, this issue has been ongoing in the West for a long time the amygdala in the temporal lobe functions as a storage and release site for emotional reactions. Emotions can be understood as mental dynamics accompanied by responses to stimuli that contain a basic need, where if that need is fulfilled, one feels joy, and if not, anger arises.²⁶ The amygdala theory explains the dynamics of emotions in various human body organs. Emotions affect human behavior when faced with emotionally charged situations visual and auditory stimuli received by the amygdala function as triggers for emotional potential.

The development of emotions in the amygdala is influenced by mental experiences resulting from work and thoughts. Under stress, the amygdala sends messages to the endocrine glands to release chemicals, starting with the release of corticotrophin-releasing factor (CRF) and culminating in a flood of cortisol hormones. This accumulation makes the amygdala a highly sensitive detonator, leading to reactions that dominate over rational considerations.²⁷ Emotions respond to phenomena according to the experiences stored in the amygdala, whether pleasant or unpleasant. Neurologists have also proven that the amygdala plays a role in eliciting physiological responses such as increased blood pressure, respiratory activity, and expressions of anxiety and fear. It is closely related to hearing, and sound can influence the amygdala as a behavioral driver.

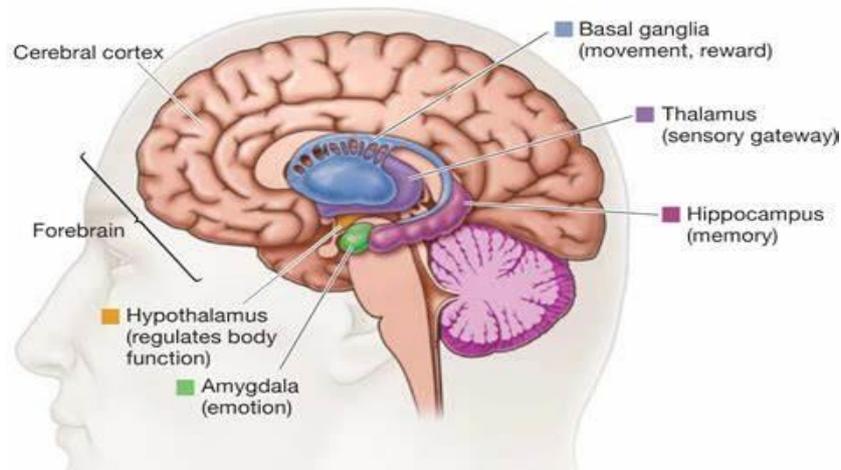
The cognitive process of sound can trigger emotional activities, leading to tears when crying.²⁸ Hurtful words, too, can be stored in the amygdala for a long time. Renovating unhealthy emotions can involve specific spiritual vibrations that have undergone clinical trials under medical supervision. Individuals with amygdala disorders experience a loss of sympathy and cannot grasp an event's emotional aspects (affective blindness).

²⁶ Pessoa, L. (2010). Emotion, cognition, and the amygdala: from "What is it?" to "What is to be done?". *Neuropsychologia*, 48(12), 3416–3429.

²⁷ McCraty, R. (2019). Heart-brain neurodynamics: The making of emotions. In *Media Models to Foster Collective Human Coherence in the PSYCHecology* (pp. 191–219). IGI Global. Rekan, A. A., Kasim, T. S. A. T., Jamil, A. I. B., Salleh, M. N. M., Ishak, N. S. I., & Jodi, K. H. M. (2025). Creative and Active Learning of the History of Islamic Education Using the Nearpod Application. *Jurnal Ilmiah Peuradeun*, 13(2), 903–930

²⁸ Music, G. (2016). *Nurturing natures: Attachment and children's emotional, sociocultural and brain development*. Psychology Press.

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Source: Google, 2023

2. *The Cognitive Revolution in the Quranic Records*

The cognitive revolution in the Qur'an highlights the intellectual transformation that occurred in Prophet Ibrahim, who served as a spiritual leader for Jewish and Arab nations.²⁹ This paradigm is based on the theological concept of monotheism, which encompasses the doctrine of the unity of God in His Essence, Attributes, and Actions. The Qur'an promotes the theology of monotheism as it resonates with the innate nature of human beings. The teachings of monotheism propagated by Prophet Ibrahim have been preserved among the followers of Ishmael and Isaac to this day. The theological doctrine of Prophet Ibrahim holds a special place among the followers of Prophet Muhammad, as his name is perpetuated in prayer.³⁰ Prophet Ibrahim activated his cognitive potential to critically analyze the existence of natural phenomena such as stars, moon, and sun to discover the true essence of the Supreme Ruler.³¹ The cognitive process, manifested through dialogues with the universe, represents an intellectual activity in interpreting the meaning of reality. This is depicted in the Qur'an, in Surah Al-An'am, verses 75-79:

"And thus did We show Ibrahim the kingdom of the heavens and the earth that he would be among the certain. So, he saw a star when the night covered him [with darkness]. He said, 'This is my lord.' However, when it set, he said, 'I like not those that disappear.' Moreover, when he saw the moon rising, he said, 'This is my lord.' However, when it set, he said, 'Unless my Lord guides me, I will surely be among the people gone astray.' Moreover, when he saw the sun rising, he said, 'This is my lord; this is greater.' Nevertheless, when it set, he said, 'O my people, indeed I am free from what you associate with Allah. Indeed, I have turned my face toward

²⁹ Apriani, D., Williams, A., Rahardja, U., Khoirunisa, A., & Avionita, S. (2021). The Use of Science Technology In Islamic Practices and Rules In The Past Now and The Future. *Int. J. Cyber IT Serv. Manag*, 1(1), 48-64.

³⁰ Akkila, A. N., & Abu-Naser, S. S. (2018). Rules of Tajweed the Holy Quran Intelligent Tutoring System.

³¹ El-Sharif, A. (2011). *A linguistic study of Islamic religious discourse: conceptual metaphors in the prophetic tradition* (Doctoral dissertation).

He who created the heavens and the earth, inclining toward truth, and I am not of those who associate others with Allah. '''

Prophet Ibrahim consciously built his experience of the divine using intellectual and spiritual cognitive potential. This theological awareness proved instrumental in shaping Prophet Ibrahim's mental resilience in facing challenges.³² The physical burning he experienced resulted from the ideological struggle between monotheism and pagan ideologies under the authoritarian rule of King Namruz. Prophet Ibrahim's cognitive and spiritual process serves as a milestone in the cognitive revolution for humanity. The comprehensive development of human thinking systems requires logical and rational methods.³³

Theological documents have consistently emphasized the command to think and reflect. God directs human cognitive focus toward contemplating the creation of the heavens and the earth across various dimensions. Philosophers such as Plato and Aristotle have contributed to the intellectual development of human cognition for thousands of years.³⁴ Within the realm of the Islamic spirituality, figures like Abdul Qadir al-Jailani and al-Ghazali utilized acoustic principles to complement human cognition's spiritual and emotional development. Educational experts should explore the cognitive development of humans from theological, spiritual, emotional, and intellectual approaches, which are crucial elements driving the cognitive revolution. Islamic education thinkers respond to the cognitive revolution by promoting a thinking paradigm based on monotheistic theology.³⁵ The cognitive revolution is highly relevant to the Quranic call to continually expand the understanding of the universe and contemplate the creation of the heavens and the earth. Therefore, a significant aspect of the cognitive revolution is that monotheistic theology should serve as the foundation for safeguarding the intellectual thought of Muslim generations.

In our view, the intellectual, cognitive process of interpreting reality to reach the essence of truth becomes more significant as it provides an argumentative theological basis.³⁶ Social and religious facts demonstrate that spiritualities that neglect the intellectual, cognitive process in theological reasoning tend to deviate from the monotheistic theology advocated by Prophet Ibrahim. This doctrine has been a longstanding paradigm of divinity among humanity. In the

³² Jaelani, A. (2019). Innovative economy, smart city, and halal tourism industry: global Islamic economic perspective in Indonesia.

³³ Chen, M., Herrera, F., & Hwang, K. (2018). Cognitive computing: architecture, technologies, and intelligent applications. *Ieee Access*, 6, 19774-19783.

³⁴ Green, J. B. (2015). *Conversion in Luke-Acts: divine action, human cognition, and the people of God*. Baker Academic.

³⁵ Chickering, A. W., Dalton, J. C., & Stamm, L. (2015). *Encouraging authenticity and spirituality in higher education*. John Wiley & Sons.

³⁶ Newberg, A. B. (2010). *Principles of neurotheology*. Ashgate Publishing, Ltd.

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Qur'an, the doctrine of monotheism is dispersed across numerous *Surahs*, with its significant essence summarized in Surah Al-Ikhlās, which states, "Say, 'He is Allah, [who is] One.'"

3. *Islamic Higher Education Institutions as Centers for Cognitive Worship*

Cognitive worship, as defined by Benjamin Martin Bly, encompasses the entire process of thinking and understanding information from the external world, including activities of perception, imagination, and reasoning. Sufi scholars have extensively explored the development of cognitive potential.³⁷ *Thalli*, *thalli*, and *tajalli* represent well-known cognitive processes among Islamic mystics. Cognitive worship holds significant value as it has successfully guided Muslims to become the most significant academic contributors to the world for centuries. According to the Quran, those not interested in utilizing their minds to develop cognitive abilities will face punishment. In our 20 years of experience in education, we have yet to discover strategic steps to holistically adopt the cognitive revolution into the educational system of Islamic Higher Education Institutions³⁸.

The current challenge in our educational institutions is the failure to maximize adequate tools to fulfill their primary function as centers for the development of civilization based on monotheistic theological thinking. From this perspective, cognitive activities become a particular form of worship if thinking is considered a cognitive process. This worship is connected to a wide range of aspects. Cognitive worship has yet to become ingrained in our academics. Non-Muslims seem to be more enthusiastic in understanding the Quran, leading to the discovery of many mysteries and miracles of the Quran by non-Muslims.³⁹

Performing prayer worship only requires a simple place, unlike cognitive worship, which requires various laboratories to test hypotheses and unveil the wisdom in the universe. Through Surah Al-Ghashiyah (88th chapter), the Quran invites intelligent human beings to engage in cognitive worship. It calls for the comprehensive and holistic utilization of mental potential to contemplate the process of creating the camel as a reliable means of transportation in the desert, to ponder the creation of the expanding universe through space, to analyze the structural construction of mountains as stakes for the earth, and to examine the relationship between human visual perception and the vastness of the earth, which appears as an endless expanse.

³⁷ Maarif, M. A., Rofiq, M. H., & Sirojuddin, A. (2022). Implementing Learning Strategies for Moderate Islamic Religious Education in Islamic Higher Education. *Jurnal Pendidikan Islam*, 8(1), 75-86.

³⁸ Sahin, A. (2018). Critical issues in Islamic education studies: Rethinking Islamic and Western liberal secular values of education. *Religions*, 9(11), 335.

³⁹ Telli, Y. D. (2019). Miraculous Evidence: Scientific Wonders and Religious Reasons. *Comparative Studies of South Asia, Africa, and the Middle East*, 39(3), 528-542.

These various wonders and unique natural phenomena portray the magnificence of God and must be carefully and systematically pondered, understood, studied, and researched by humans. Islamic Higher Education Institutions, as institutions of higher research, should prepare paradigms and instruments that provide new energy for cognitive development within universities.⁴⁰ The development of cognitive worship within PTKI is an implementation of the first revelation, IQRA', which, in the author's view, contains two main intelligence elements: literacy intelligence and numeracy intelligence. Literacy intelligence encompasses the ability to understand the meaning of written texts that are interconnected between paragraphs, while numeracy intelligence involves understanding and applying mathematical concepts in daily life.

In concrete terms, the development of cognitive worship within (Islamic Higher Education Institutions) or PTKI in the Indonesian term, can implement the layer of knowledge in the learning process, which includes the stages of knowing, recognizing, comprehending, understanding, skill-building, reflecting expertise, designing, modeling, estimating, producing, and distributing (rahmatan lil alamin). All of these stages can become the defining characteristics of the curriculum within PTKI that supports the development of cognitive worship.⁴¹ These eleven stages can be simplified and visualized in the diagram below.

4. Holistic Approaches to Education

Incorporating sensory modalities in education fosters a holistic approach that enhances teaching and learning processes. It acknowledges diverse learning styles and preferences, leading to improved comprehension and retention.⁴² The cognitive revolution emphasizes the importance of metacognition in understanding cognitive processes. Educators can create a multisensory learning environment by engaging visual, auditory, kinesthetic, and tactile stimuli. Research shows that multisensory experiences deepen understanding and memory consolidation. In Islamic education, integrating sensory modalities aligns with the principles of tawhid and the interconnectedness between the physical and spiritual realms. It nurtures students' intellectual, emotional, and spiritual growth. Sensory-based teaching methods promote active learning, student engagement, critical thinking, collaboration, and creativity.⁴³

Promoting cognitive development through multisensory experiences in Islamic education enhances understanding and learning outcomes. By engaging multiple senses, educators create dynamic environments that stimulate cognitive processes. Research

⁴⁰ Patton, L. D., Renn, K. A., Guido, F. M., & Quaye, S. J. (2016). *Student development in college: Theory, research, and practice*. John Wiley & Sons.

⁴¹ Muzakkiyati, H. (2017). *The internalization of multicultural value in Islamic Education learning to increase the tolerance of religion at State Senior High School 8 Malang* (Doctoral dissertation, Universitas Islam Negeri Maulana Malik Ibrahim).

⁴² Echegoyen-Sanz, Y., & Martín-Ezpeleta, A. (2021). A holistic approach to education for sustainability: Ecofeminism as a tool to enhance sustainability attitudes in pre-service teachers. *Journal of Teacher Education for Sustainability*, 23(1), 5-21. Hasan, N., Taufiq, M., Hannan, A., & Enhas, M. I. G. (2023). Tradition, Social Values, and Fiqh of Civilization: Examining the Nyadran Ritual in Nganjuk, East Java, Indonesia. *Samarah*, 7(3), 1778-1802

⁴³ Marshalsey, L. (2023). *Sensory Affect, Learning Spaces, and Design Education: Strategies for Reflective Teaching and Student Engagement in Higher Education*. Taylor & Francis.

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emphasizes the positive impact of multisensory experiences on cognitive development. Metacognition, reflecting on one's cognitive processes, plays a crucial role.⁴⁴ By incorporating multisensory experiences, students actively engage with learning materials and gain a deeper understanding. Studies demonstrate the benefits of multisensory learning. Mayer and Moreno found that students who received information through visual and auditory channels performed better on comprehension tests.⁴⁵ Integrating multiple sensory channels enhances cognitive processing and retention. Multisensory experiences align with the holistic nature of Islamic education. Sensory modalities create meaningful connections by bridging the gap between Allah's knowledge and student learning.⁴⁶

Practical implementation in Islamic education involves using visual aids, audio recordings, and hands-on activities when teaching Arabic. These approaches promote language acquisition and cognitive development through engagement and experiential learning. Integrating technology enhances multisensory experiences.⁴⁷ Interactive multimedia, virtual reality simulations, and educational apps immerse students in engaging learning environments that stimulate multiple senses and promote cognitive growth.

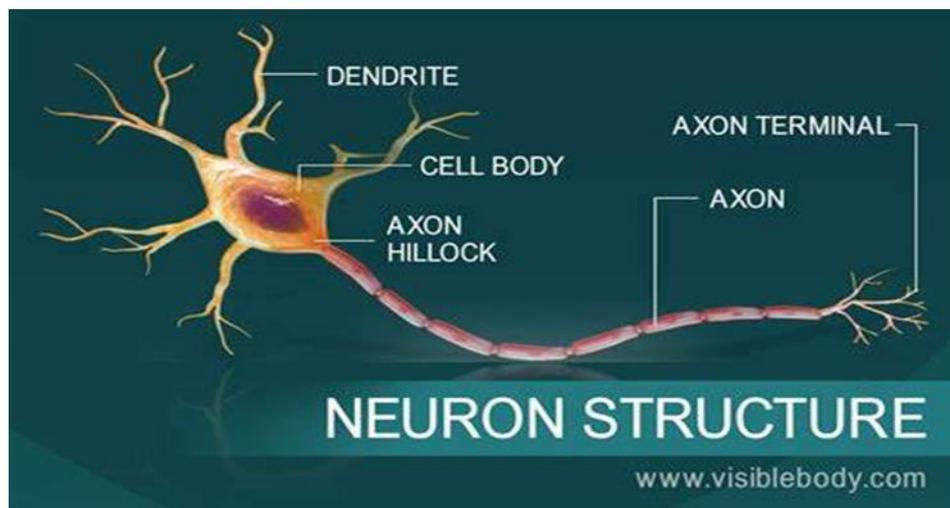


Figure 1: Neuron structure (Source: www.visiblebody.com)

In Islamic education, visual aids and tangible representations is a valuable strategy for enhancing comprehension and knowledge retention among students.⁴⁸ Visual aids, such as

⁴⁴ Lyons, K. E., & Zelazo, P. D. (2011). Monitoring, metacognition, and executive function: Elucidating the role of self-reflection in the development of self-regulation. *Advances in child development and behavior*, 40, 379-412.

⁴⁵ Mayer, R. E., & Moreno, R. (2003). Nine ways to reduce cognitive load in multimedia learning. *Educational psychologist*, 38(1), 43-52.

⁴⁶ Elias, J. J. (2018). *Alef Is for Allah: Childhood, Emotion, and Visual Culture in Islamic Societies*. Univ of California Press.

⁴⁷ Ibrahim, M. K., & Ibrahim, Y. A. (2017). Communicative English language teaching in Egypt: Classroom practice and challenges. *Issues in Educational Research*, 27(2), 285-313.

⁴⁸ Alam, A. (2022). Social robots in education for long-term human-robot interaction: Socially supportive behavior of robotic tutor for creating a robot-tangible learning environment in a guided discovery learning interaction. *ECS*

diagrams and illustrations, simplify complex concepts and support understanding. Tangible representations, including physical objects and manipulatives, facilitate hands-on learning experiences and promote critical thinking.⁴⁹ Constructivism, which emphasizes active knowledge construction, aligns with integrating visual aids and tangible representations. By engaging students in concrete experiences, educators foster meaningful learning and exploration of ontological truths within the Islamic education.

Practical implementation can involve using visual aids like flowcharts to illustrate relationships between concepts in Quranic studies or employing tangible objects when teaching Islamic rituals and historical events.⁵⁰ Additionally, technology can enhance these strategies through interactive digital platforms, virtual simulations, and augmented reality applications. In conclusion, incorporating visual aids and tangible representations in Islamic education enhances comprehension and knowledge retention. By providing visual cues and hands-on experiences, educators promote understanding, critical thinking, and the connection between abstract concepts and concrete representations. This approach aligns with constructivist principles and contributes to the cognitive growth and holistic development of students.⁵¹ The integration of multisensory experiences and cognitive development in Islamic education is supported by extensive research. Studies have shown that incorporating sensory modalities enhances understanding, memory consolidation, and cognitive processes.⁵² Practical implementation, such as visual aids, tangible representations, and technology, further promotes comprehension, critical thinking, and engagement.⁵³ The following table shows a summary of the key aspects and the corresponding research evidence:

Research evidence supports the effectiveness of these approaches in enhancing Islamic education, promoting holistic development, and fostering a deeper understanding of monotheistic principles. Incorporating a holistic approach in education aligns with *tawhid* principles by enhancing learning and creativity through multisensory experiences. Research evidence shows that multisensory experiences deepen understanding and memory consolidation. Additionally, the use of visual aids, hands-on activities, and technology

Transactions, 107(1), 12389. Mujiburrahman, Zulfikar, T., Ahmad, S., Melayu, H. A., & Jasafat. (2024). The State Intervention in the Islamic Education in Aceh: Threats or Opportunities? *Jurnal Ilmiah Peuradeun*, 12(2), 539–564.

⁴⁹ Starčić, A. I., Turk, Ž., & Zajc, M. (2015). Transforming Pedagogical Approaches Using Tangible User Interface Enabled Computer Assisted Learning. *International Journal of Emerging Technologies in Learning*, 10(6).

⁵⁰ Teo, T. W., Tan, K. C. D., Yan, Y. K., Teo, Y. C., & Yeo, L. W. (2014). How to Flip teaching supports undergraduate chemistry laboratory learning. *Chemistry Education Research and Practice*, 15(4), 550-567.

⁵¹ Venketsamy, D. R., & Ntshangase, N. P. (2022). *Practitioners' perceptions of play-based pedagogy on the holistic development of young children* (Doctoral dissertation, University of Pretoria).

⁵² Gallagher, M., & Ferrè, E. R. (2018). Cybersickness: a multisensory integration perspective. *Multisensory Research*, 31(7), 645-674.

⁵³ Shedletsky, L. J. (Ed.). (2014). *Cases on teaching critical thinking through visual representation strategies*. IGI Global.

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integration supports language acquisition and cognitive growth. Tangible representations and manipulatives facilitate hands-on learning experiences, while interactive digital platforms and virtual simulations immerse students in engaging learning environments, stimulating multiple senses and promoting cognitive growth and engagement.

Table 1: Summary of aspect and supporting evidences

Aspect	Summary	Research Evidence
Holistic Approach	Incorporating sensory modalities in education enhances learning and creativity, aligning with tawhid principles.	Multisensory experiences deepen understanding and memory consolidation ⁵⁴
Cognitive Development	Multisensory experiences improve understanding and retention, while metacognition enhances cognitive processes.	Students perform better on comprehension tests when information is presented visually and audibly ⁵⁵
Practical Implementation	Visual aids, hands-on activities, and technology integration support language acquisition and cognitive growth.	Tangible representations and manipulatives facilitate hands-on learning experiences and promote critical thinking ⁵⁶
Visual Aids and Tangible	Visual aids and tangible representations simplify concepts, promote critical thinking, and aid comprehension.	Visual aids like diagrams and illustrations support understanding ⁵⁷
Technology Integration	Interactive digital platforms and virtual simulations immerse students in engaging learning environments, stimulating multiple senses.	Technology-enhanced learning environments promote cognitive growth and engagement ⁵⁸

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In summary, incorporating a holistic approach in education through multisensory experiences, visual aids, hands-on activities, and technology integration supports language acquisition, cognitive development, and critical thinking. These practices align with *tawhid* principles and have been supported by research evidence, enhancing learning, comprehension, and creativity.

5. *Integration of Monotheistic Ontology in Educational Methodologies*

Integrating monotheistic ontology in educational methodologies within the Islamic education is vital for providing a comprehensive framework for understanding reality and

⁵⁴ Cucchi, A. (2022). Integrating cognitive behavioral and Islamic principles in psychology and psychotherapy: a narrative review. *Journal of Religion and Health*, 61(6), 4849-4870.

⁵⁵ Piaget, J. (2003). Part I: Cognitive Development in Children--Piaget Development and Learning. *Journal of research in science teaching*, p. 40.

⁵⁶ Hung, Y. H., Chen, C. H., & Huang, S. W. (2017). Applying augmented reality to enhance learning: a study of different teaching materials. *Journal of Computer Assisted Learning*, 33(3), 252-266.

⁵⁷ Bovellan, E. (2014). Teachers' beliefs about learning and language as reflected in their views of teaching materials for Content and Language Integrated Learning (CLIL). *Jyväskylä studies in humanities*, (231).

⁵⁸ Garcia, G., & Jung, I. (2021). Understanding immersion in 2D platform-based online collaborative learning environments. *Australasian Journal of Educational Technology*, 37(1), 57-67.

human existence (Author, Year). This integration allows students to gain a holistic perspective on the world and their place within it.⁵⁹ By incorporating monotheistic ontology, Islamic education fosters an interconnected knowledge base that integrates religious teachings with various academic disciplines.⁶⁰ Practical implementation involves designing curricula that align Islamic teachings with academic subjects and integrating ethical considerations across disciplines. Islamic education also emphasizes the moral and ethical dimensions of learning, aiming to cultivate virtuous individuals who embody the values and principles of monotheism⁶¹. The introduction of indicators of monotheism in the academic community is a significant step toward incorporating the principles of monotheism into education. This requires rigorous research to explore the intersection of monotheistic beliefs and scholarly pursuits. By establishing indicators, educators can design curricula and assessments that reflect the values and principles of monotheism.⁶²

Introducing indicators of monotheism fosters a culture of monotheistic values and ethics within the academic community, nurturing intellectual and spiritual growth. Cultivating a deeper understanding of monotheistic principles is crucial for students' holistic development, as it enhances their understanding of moral and ethical principles.⁶³ It also promotes critical thinking and ethical decision-making, enabling students to make informed choices guided by monotheistic values. In conclusion, integrating monotheistic principles in education within the context of Islamic education contributes to students' holistic development. It provides a comprehensive framework for understanding reality, fosters a culture of monotheistic values and ethics, and promotes critical thinking and ethical decision-making.

The table below summarizes the key aspects and corresponding research evidence. Islamic education integrates monotheistic ontology, offering students a holistic perspective on reality and their place within it. By integrating religious teachings with academic disciplines, it fosters interconnected knowledge and moral development. It establishes indicators and a culture reflecting monotheistic values, promoting critical thinking and ethical decision-making guided by Islamic principles. This approach enhances students' understanding of moral and ethical

⁵⁹ Pelly, R. D. M., & Boje, D. (2019). Neoliberalism in the North American University: Toward Integrating Divisions in Agent Orientation Via a Follettian Differentiated Relational Ontology. *Communication & Language at Work*, 6(2), 28-41.

⁶⁰ Hidayat, T., Rizal, A. S., Abdussalam, A., & Fawwaz, A. G. (2020). Designing Islamic Values Integration into Sociology Learning. *Jurnal Pendidikan Islam*, 6(1), 37-56.

⁶¹ Sahin, A. (2017). Education as compassionate transformation: The ethical heart of Islamic pedagogy. *The pedagogy of compassion at the heart of higher education*, pp. 127-137.

⁶² Norman, N. A. (2021). Ibn Sina's Theory of the Soul: A Taxonomy of Islamic Education. *ICR Journal*, 12(2), 275-289.

⁶³ Huda, M., Sudrajat, A., Muhamat, R., Mat Teh, K. S., & Jalal, B. (2019). Strengthening religious values for self-regulation in religiosity: insights from Tawakkul (trust in God). *International Journal of Ethics and Systems*, 35(3), 323-344.

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principles and encourages the appreciation of the interconnectedness of knowledge and the divine.

Table 2: The key aspects, summary, and corresponding research evidence:

Aspect	Summary	Research Evidence
Integration of Monotheistic Ontology	Provides a comprehensive framework for understanding reality and human existence within Islamic education.	Understanding reality and human existence in Islamic education ⁶⁴
Holistic Perspective	Offers students a holistic perspective on the world and their place within it.	Understanding students' place in the world comprehensively. ⁶⁵
Integration of Religious Teachings	Fosters an interconnected knowledge base by integrating religious teachings with academic disciplines.	Connecting knowledge through interdisciplinary integration in education ⁶⁶
Moral and Ethical Development	Emphasizes the moral and ethical dimensions of learning, cultivating virtuous individuals.	Cultivating virtuous individuals through educational emphasis. ⁶⁷
Indicators of Monotheism	Establishes indicators to reflect the values and principles of monotheism in curricula and assessments.	Reflecting values and principles in curricula and assessments. ⁶⁸
Culture of Monotheistic Values and Ethics	Fosters a culture that nurtures intellectual and spiritual growth.	Nurturing intellectual and spiritual growth collectively. ⁶⁹
Critical Thinking and Ethical Decision-Making	Promotes critical thinking and enables students to make informed choices guided by monotheistic values.	Guided choices based on monotheistic values ⁷⁰
Understanding of Moral and Ethical Principles	Enhances students' understanding of moral and ethical principles.	Enhancing students' moral comprehension ⁷¹
Integration of Knowledge and Divine	Encourages students to appreciate the interconnectedness of knowledge and the divine.	Interconnectedness of knowledge and the divine: Fostering appreciation in students. ⁷²

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In summary, the integration of monotheistic ontology in Islamic education provides a comprehensive framework for understanding reality and human existence. It fosters moral and

⁶⁴ Choudhury, M. A. (2015). Res Extensa et res cogitans de maqasid as-shari'ah. *International Journal of Law and Management*, 57(6), 662-693.

⁶⁵ Masats, D., & Dooly, M. (2011). Rethinking the use of video in teacher education: A holistic approach. *Teaching and Teacher Education*, 27(7), 1151-1162.

⁶⁶ Anwar, S., & Elfiah, R. (2019, February). Science and religious integration (implications for the development at UIN Raden Intan Lampung). In *Journal of Physics: Conference Series* (Vol. 1155, No. 1, p. 012095). IOP Publishing.

⁶⁷ Muhammad, A., Ghalib, M. F. M. D., Ahmad, F., Naveed, Q. N., & Shah, A. (2016). A study to investigate the state of ethical development in e-learning. *J. Adv. Comput. Sci. Appl*, 7(4), 284-290.

⁶⁸ Qodir, A., Dakir, D., & Umiarso, U. (2017). The Concept of Human Unity and Islamic Inclusive Education: A Study of KH. Imam Zarkasyi's Thought in Social Change. *Journal of Islamic Studies and Culture*, 5(2), 47-56.

⁶⁹ Sahin, A. (2018). Critical issues in Islamic education studies: Rethinking Islamic and Western liberal secular values of education. *Religions*, 9(11), 335.

⁷⁰ Park, C. S. Y., Haejoong, K. I. M., & Sangmin, L. E. E. (2021). Do less teaching, do more coaching: toward critical thinking for ethical applications of artificial intelligence. *Journal of Learning and Teaching in Digital Age*, 6(2), 97-100.

⁷¹ Fransson, G. (2017). Understanding morality and ethics: maneuvering ethical dilemmas in digital educational contexts. In *Teacher Education for Ethical Professional Practice in the 21st Century* (pp. 72-97). IGI Global.

⁷² Serenko, A., & Bontis, N. (2013). Investigating the current state and impact of the intellectual capital academic discipline. *Journal of Intellectual Capital*.

ethical development, cultivates a culture of monotheistic values and ethics, and promotes critical thinking and ethical decision-making. This approach enhances students' understanding of moral principles and encourages the interconnectedness of knowledge and the divine.

6. Potential Impacts on Intellectual and Academic Growth

Integrating monotheistic principles into education profoundly impacts students' intellectual and academic growth, particularly in fostering critical thinking and reasoning abilities. Research conducted by De Kock et al.⁷³ supports the notion that religious education plays a significant role in developing critical thinking skills. By encouraging students to explore moral dilemmas, ethical issues, and philosophical questions within monotheistic principles, they can engage in critical analysis and develop the ability to evaluate information and construct well-reasoned arguments. Furthermore, integrating monotheistic principles promotes a broader perspective and an appreciation for diverse viewpoints. Mustari Bosra et al.⁷⁴ argue that exposure to different interpretations and philosophical inquiries within monotheistic traditions nurtures tolerance and a deeper understanding of the complexity of religious thought. This broader perspective empowers students to approach complex ideas and problems open-mindedly and flexibly.⁷⁵

In addition to cultivating critical thinking skills, integrating monotheistic principles enhances students' problem-solving capabilities. Students can analyze information, identify logical fallacies, and develop creative solutions by applying critical thinking skills.⁷⁶ These skills are transferable across various disciplines and contribute to their overall academic performance. By embracing the integration of monotheistic principles, educators contribute to the holistic growth of students. They equip students with lifelong skills essential for continuous learning and intellectual development.⁷⁷ Students become critical thinkers capable of evaluating information, considering diverse perspectives, and solving complex problems effectively.

Integrating monotheistic principles in education promotes critical thinking by encouraging students to explore moral and ethical issues. Research evidence shows that

⁷³ Sahin, A. (2018). Critical issues in Islamic education studies: Rethinking Islamic and Western liberal secular values of education. *Religions*, 9(11), 335.

⁷⁴ Mishchuk, H., Roshchuk, I., Sulowska, J., & Vojtovič, S. (2019). Prospects of assessing the impact of external student migration on restoring a country's intellectual potential (the case study of Ukraine). *Economics & Sociology*, 12(3), 209-219.

⁷⁵ Caratozzolo, P., Alvarez-Delgado, A., & Hosseini, S. (2019, April). We are fostering specific dispositions of critical thinking for student engagement in engineering. In *2019 IEEE Global Engineering Education Conference (EDUCON)* (pp. 221-226). IEEE.

⁷⁶ Chukwuyenum, A. N. (2013). Impact of critical thinking on performance in mathematics among senior secondary school students in Lagos State. *IOSR Journal of Research & Method in Education*, 3(5), 18-25.

⁷⁷ Abdou, E. D. (2016). 'Confused by multiple deities, ancient Egyptians embraced monotheism': Analyzing historical thinking and inclusion in Egyptian history textbooks. *Journal of Curriculum Studies*, 48(2), 226-251.

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religious education provides opportunities for students to engage in critical thinking by examining moral dilemmas, ethical issues, and philosophical questions. Additionally, integrating monotheistic principles positively influences students' problem-solving capabilities and cognitive abilities, including problem-solving and analytical skills.

Table 3: Summary of findings supported by evidences:

Aspect	Summary of Evidence	Research Evidence
Critical Thinking Skills	Integrating monotheistic principles in education promotes critical thinking by exploring moral and ethical issues.	"Religious education provides opportunities for students to engage in critical thinking by exploring moral dilemmas, ethical issues, and philosophical questions." ⁷⁸
Problem-Solving Capabilities	Integrating monotheistic principles enhances students' problem-solving capabilities.	Religious education positively influences students' cognitive abilities, including problem-solving and analytical skills ⁷⁹

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Studies indicate that integrating monotheistic principles in education enhances students' problem-solving capabilities. Religious education has been found to have a positive influence on students' cognitive abilities, including their problem-solving and analytical skills. By engaging with monotheistic teachings, students develop the skills necessary to approach and solve complex problems effectively.

7. *Interdisciplinary Approaches and Dynamic Learning Environments*

Integrating cognitive sciences with theological principles in interdisciplinary approaches within dynamic learning environments is a promising avenue for enhancing Islamic education.⁸⁰ By merging insights from cognitive sciences with the rich theological principles of Islam, educators can create engaging and impactful learning experiences that align with learners' cognitive processes. This interdisciplinary integration enables educators to tap into the spiritual and moral dimensions of learning, promoting holistic growth and character formation.⁸¹ Dynamic learning environments incorporating interdisciplinary approaches

⁷⁸ Racine, L., & Vandenberg, H. (2021). A philosophical analysis of anti-intellectualism in nursing: Newman's view of university education. *Nursing Philosophy*, 22(3), e12361.

⁷⁹ Damayanti, E., Nurqadriani, N., Ondeng, S., Yahdi, M., & Muthmainnah, M. (2021). Can Someone Become A Counselor To Gain The Target Of An Islamic Education Counseling? *At-Tarbiyat: Jurnal Pendidikan Islam*, 4(3).

⁸⁰ Pope, H., De Frece, A., Wells, R., Borrelli, R., Ajates, R., Arnall, A., & Häslar, B. (2021). Developing a functional food systems literacy for interdisciplinary dynamic learning networks. *Frontiers in Sustainable Food Systems*, 5, 747627.

⁸¹ Persov, E., Yehuda, R. U., Kantor, R., & Pelman, B. (2017). PBL 2.0. Interdisciplinary, multicultural transformative sustainable education for design students. *The Design Journal*, 20(sup1), S1224-S1240. Rojak, E. A., & Fawzi, R. (2024). The Normative Basis of Islamic Astronomy For The Transformation of Prayer Schedules To Digital And Its Accuracy. *El-Usrah*, 7(2), 602–622.

facilitate active engagement, collaboration, and inquiry-based learning, leading to deeper understanding and critical thinking.⁸²

Embracing interdisciplinary collaborations in educational research is crucial for advancing the field and addressing complex challenges. Such collaborations promote a broader perspective, foster creativity and innovation, and enhance the relevance and applicability of educational research.⁸³ Researchers can uncover complex relationships and develop comprehensive insights that inform evidence-based educational practice by integrating multiple disciplinary lenses. Creating dynamic learning environments that cater to diverse needs is essential for effective education. By incorporating instructional strategies, technology, inclusivity, and real-world connections, educators can personalize learning experiences and promote active participation and collaboration.⁸⁴ Recognizing and valuing students' diverse backgrounds and providing support mechanisms ensure an inclusive and equitable learning environment.

Integrating cognitive sciences with theological principles enhances Islamic education by aligning with cognitive processes and incorporating spiritual and moral dimensions. Embracing interdisciplinary collaborations in educational research provides broader perspectives, fosters creativity, and enhances the relevance and applicability of educational practices. Creating dynamic learning environments that cater to diverse needs promotes engagement, collaboration, and critical thinking among students.

Table 4: Summary of finding; aspect, summary and evidence:

Aspect	Summary	Evidence
Integrating Cognitive Sciences with Theological Principles	Enhances Islamic education by aligning with cognitive processes and tapping into spiritual and moral dimensions.	Bridging the divide between science and religion in cognitive research ⁸⁵
Embracing Interdisciplinary Collaborations in Educational Research	It offers broader perspectives, fosters creativity, and enhances relevance and applicability.	Advancing sustainability and corporate social responsibility ⁸⁶

⁸² Pichardo, J. I., López-Medina, E. F., Mancha-Cáceres, O., González-Enríquez, I., Hernández-Melián, A., Blázquez-Rodríguez, M., & Borrás-Gené, O. (2021). Students and teachers using Mentimeter: Technological innovation to face the challenges of the covid-19 pandemic and post-pandemic in higher education. *Education Sciences*, 11(11), 667.

⁸³ Kelly, R., Mackay, M., Nash, K. L., Cvitanovic, C., Allison, E. H., Armitage, D., & Werner, F. (2019). Ten tips for developing interdisciplinary socio-ecological researchers. *Socio-Ecological Practice Research*, 1, 149–161.

⁸⁴ Boss, S., & Krauss, J. (2022). Reinventing project-based learning: Your field guide to real-world projects in the digital age. International Society for Technology in Education.

⁸⁵ Van Slyke, J. A. (2016). *The cognitive science of religion*. Routledge.

⁸⁶ Annan-Diab, F., & Molinari, C. (2017). Interdisciplinarity: Practical approach to advancing education for sustainability and the Sustainable Development Goals. *The International Journal of Management Education*, 15(2), 73-83.

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Creating Dynamic Learning Environments	Caters to diverse needs and promotes engagement, collaboration, and critical thinking.	Enhancing biodiversity conservation through dynamic learning and effective communication ⁸⁷
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In summary, integrating cognitive sciences with theological principles enriches Islamic education by considering both cognitive processes and spiritual dimensions. Embracing interdisciplinary collaborations in educational research brings diverse perspectives and enhances the relevance of educational practices. By creating dynamic learning environments that cater to diverse needs, students are actively engaged, fostering collaboration and critical thinking skills.

8. *Advancing Islamic Education in a Knowledge-Based Society*

Advancing Islamic education in a knowledge-based society involves equipping individuals with the skills and knowledge necessary to thrive in a rapidly changing world. This includes developing critical thinking, problem-solving, creativity, collaboration, and adaptability skills within the framework of Islamic education. Additionally, it is essential to empower students with a strong foundation in core academic subjects and the 21st-century skills such as communication, digital literacy, and global awareness. Fostering a growth mindset and a love for lifelong learning is also crucial.⁸⁸ The Islamic education should promote a balanced approach that harmonizes religious teachings with a comprehensive understanding of various disciplines and fields of knowledge. This integration enables individuals to engage critically with different perspectives, embrace diversity, and contribute to the advancement of society. Moreover, Islamic education should instill moral and ethical values, foster social responsibility, and encourage active participation in community development initiatives.⁸⁹

By nurturing a well-rounded and educated community, Islamic education contributes to the betterment of the society. It promotes moral values, ethical behavior, and social responsibility among students. Furthermore, Islamic education emphasizes pursuing knowledge and intellectual growth, enabling individuals to engage in critical thinking, problem-solving, and innovation.⁹⁰ It also encourages individuals to embrace diversity and promote inclusivity within their communities. Overall, advancing Islamic education in a knowledge-based society requires equipping individuals with the necessary skills, knowledge, values, and mindset to

⁸⁷ Tinch, R., Balian, E., Carss, D., de Blas, D. E., Geamana, N. A., Heink, U., ... & Young, J. C. (2018). Science-policy interfaces for biodiversity: dynamic learning environments for successful impact. *Biodiversity and Conservation*, 27, 1679-1702.

⁸⁸ Hakim, R., Ritonga, M., & Susanti, W. (2020). Implementation of Contextual Teaching and Learning in Islamic Education at Madrasah Diniyah. *Jour of Adv Research in Dynamical & Control Systems*, 12.

⁸⁹ Fook, J. (2012). The challenges of creating critically reflective groups. *Social Work with Groups*, 35(3), 218-234.

⁹⁰ Anwar, E. (2018). *A genealogy of Islamic feminism: Pattern and change in Indonesia*. Routledge.

thrive in a changing world. By doing so, Islamic education can contribute to the development of well-rounded individuals and communities that actively participate in the betterment of society.

Table 5: Summary of result: aspect and summary

Aspect	Summary
Skills Development	Enhancing Islamic education involves developing critical thinking, problem-solving, creativity, collaboration, and adaptability skills.
Integration of Disciplines	Islamic education should integrate religious teachings with various academic disciplines to promote critical engagement and diversity acceptance.
Moral Values	Islamic education instills moral values, fosters social responsibility, and encourages active participation in community development

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Furthermore, Islamic education nurtures moral values by emphasizing ethical conduct, empathy, and compassion. It fosters a sense of social responsibility and encourages students to actively contribute to the betterment of their communities. By integrating these aspects into the educational framework, Islamic education prepares students to be well-rounded individuals who can positively impact society.

C. Conclusion

Advancing Islamic education in a knowledge-based society requires embracing the cognitive revolution, integrating monotheistic ontology, and prioritizing the holistic development of students. By incorporating innovative approaches and aligning with contemporary understandings of cognition, Islamic education can provide students with a strong foundation rooted in the Islamic principles while fostering critical thinking, problem-solving, and cognitive abilities. Furthermore, the integration of monotheistic ontology in educational methodologies reinforces education's moral, spiritual, and social dimensions. It cultivates ethical behavior, empathy, and social responsibility among students, enhancing their capacity for moral reasoning and ethical decision-making. However, further research, implementation, and the development of comprehensive frameworks are needed to develop Islamic education effectively. Educators and educational institutions play a crucial role in creating dynamic learning environments that cater to the diverse needs of students. Providing educators with the necessary support and resources and promoting professional development opportunities are essential to implement effective Islamic educational practices. By prioritizing students' intellectual and moral growth, Islamic education can shape individuals who are knowledgeable but also ethical, compassionate, and actively engaged in their communities. This

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collective effort from educators, researchers, policymakers, and stakeholders will contribute to the continuous improvement and advancement of Islamic education in the modern world.

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