

MODEL OF HARMONIZATION OF SCIENCE AND RELIGION IN EARLY CHILDHOOD EDUCATION CURRICULUM DEVELOPMENT

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ABSTRACT

The modern education system is currently confronted with the challenge of a dichotomous paradigm that separates science as a value-free, empirical-rational discipline and religion as a private, normative domain. This secular polarization impacts Early Childhood Education (ECE), which tends to be implemented partially, risking the omission of children's spiritual dimensions during their golden age. This study aims to formulate a model for harmonizing science and religion in ECE curriculum development to build a balanced intellectual, spiritual, and character growth in children. The methodology employed is descriptive qualitative with a literature study (library research) approach. Data were gathered through the documentation method from various scientific databases, including Google Scholar, Garuda, DOAJ, Scopus, and SINTA, and subsequently analyzed using content analysis techniques comprising data reduction, categorization, interpretation, and drawing conclusions. The results indicate that the harmonization of science and religion in the ECE curriculum is formulated through the integration of three main components: (1) learning objectives (balancing cognitive competence and religious character), (2) learning materials (connecting natural phenomena or STEAM learning with concrete tawhid values), and (3) learning methods (active exploration, simple experiments, and value reflection). The implementation of this conceptual model has a significant impact on children's holistic development, simultaneously covering cognitive, social-emotional, and spiritual domains. This study concludes that integrating scientific and theological aspects into the ECE curriculum serves as a crucial foundation for cultivating a generation that is academically excellent and spiritually robust.

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INTRODUCTION

The integration of science and religion in education has become an increasingly relevant and pressing issue amidst the rapid development of science and technology . Modern education tends to position science as a neutral and value- free discipline , while religion is positioned in

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the private and normative realm . This dichotomy results in the birth of students who excel intellectually but are weak in the spiritual and ethical dimensions . Therefore , an educational model is needed that can fully integrate science and religion so that the educational process not only produces intelligent individuals , but also those who are faithful , moral , and socially responsible (Syahsiami , 2025); (Luthfi , 2023).

Instilling religious values in early childhood plays a crucial role as an initial foundation that stimulates various other dimensions of development , considering that childhood is the pillar that forms the foundation of human personality . Optimal character and spiritual development from an early age will make it easier for children to navigate the transition to adolescence without significant personality obstacles . Conversely , neglecting moral education within the family environment , exacerbated by minimal support and conditioning at school , has the potential to plunge children into a turbulent adolescence and complicate the process of reconstructing their behavior in the future (Wati et al . , 2022). This urgency is further emphasized by the fact that the stability of early childhood mental and psychological health is strongly supported by an understanding of religious values , a level of religiosity , and the creation of a conducive spiritual atmosphere in the surrounding environment (Akrim & Junaidi, 2021).

Furthermore , the way young children interpret and make sense of religious concepts is highly dependent on the accumulation of concrete experiences they absorb from daily interactions with parents , teachers, and the surrounding social environment (Wantini & Suyatno, 2019). This reality is reinforced by Paloutzian 's (2016) view that states that the characteristics of parenting in early childhood greatly determine the formation of attachment styles , whether secure , anxious , or avoidant . These attachment styles formed early on then crystallize into internal working models or subconscious cognitive schemas that will influence how the individual builds and manages interpersonal relationships with others throughout their life (Rahmi Maldini Efendi & Andi Murniati, 2025) .

From an Islamic educational perspective , science and religion are truly two complementary entities . Science serves to explain natural phenomena through a rational and empirical approach , while religion provides direction , meaning , and value for the use of science in human life . Therefore , integrating the two is a fundamental need in the implementation of education , including at the Early Childhood Education (PAUD) level , as the initial foundation for the formation of children's character and personality (Syahsiami , 2025) .

The importance of religious education in early childhood is also closely related to children 's mental and psychological health . A religious environment and an understanding of religious values appropriate to a child's developmental stage have been shown to provide a sense of security , improve psychological well - being , and foster greater mental resilience . Religious values introduced early on become a source of meaning that helps children understand themselves , their social environment , and their relationship with God (Akrim & Junaidi, 2021).

Furthermore , religious understanding in early childhood is not formed through a complex process of abstraction , but rather through concrete experiences gained from daily interactions with parents , teachers , and the social environment . Children construct concepts about God , moral values , and religious practices based on experiences they see , hear , and feel directly . Therefore , the learning process at the PAUD level needs to be designed contextually and

integratively so that children are able to understand religious values through meaningful learning experiences (Wantini & Suyatno, 2019) .

From a developmental psychology perspective , religious experiences that children acquire from an early age also contribute to the formation of attachment patterns that will influence personality development at a later stage . Paloutzian (2016) explains that the quality of parenting and spiritual experiences that children receive will form an internal working model that becomes the basis for building social relationships , emotional regulation , and meaning of life . Thus , the integration of religious values in the educational process from an early age has broad implications , not only for spiritual development , but also for the social and psychological development of children (Rahmi Maldini Efendi & Andi Murniati, 2025).

Although the importance of religious integration in early childhood education has been widely discussed , most implementations still focus on the instillation of religious values normatively and have not optimally integrated science learning with spiritual values within a complete curriculum framework . In fact , curiosity about natural phenomena is a natural characteristic of early childhood which can be an effective means of introducing the greatness of God through exploration , observation , and scientific discovery activities appropriate to their developmental stage . The integration of science and religion in the early childhood education curriculum has the potential to develop scientific literacy while strengthening children's spiritual awareness in a balanced manner .

Based on these conditions , a model of harmonization of science and religion is needed in the development of Early Childhood Education curriculum that is able to integrate scientific , moral, and spiritual aspects comprehensively . This model is expected to be an alternative in overcoming the dichotomy of science while supporting the realization of holistic , integrative early childhood education , and oriented towards the development of all children's potential . Therefore , this study aims to analyze and formulate a model of harmonization of science and religion in the development of Early Childhood Education curriculum as an effort to build a balance between intellectual , spiritual, and character development of children from an early age .

METHOD

This research method applies a qualitative approach with a library research specification . The choice of this methodology is based on a research orientation that focuses on conceptual exploration regarding the formulation of harmonization between the domains of science and religion in the restructuring of the Early Childhood Education (PAUD) curriculum . Through a critical analysis of the spectrum of theories , concepts , and previous empirical findings , this library study provides space for researchers to obtain a comprehensive theoretical synthesis regarding the dynamics of the integration of these two domains and their pedagogical implications for the early childhood education curriculum .

The data corpus analyzed in this study is classified into two main categories , namely primary data and secondary data . The primary data category is sourced from reputable scientific journal articles that specifically discuss science - religion integration , early childhood curriculum development models , early childhood spiritual education , and integrative education paradigms. Meanwhile , secondary data is compiled from academic textbooks , scientific proceedings , theses , dissertations , and other relevant authoritative documents to strengthen the theoretical depth of the study . All literature used is strictly selected by considering thematic

relevance , academic reputation of the publisher , and the significance of its contribution to the reconstruction of the concept of aligning science and religious values in early childhood .

The literature data collection technique is carried out through the documentation method , which involves a series of systematic stages starting from searching , identification , classification , to inventorying various library sources based on the central research issue . The literature search process is carried out by exploring various national and international reputable scientific databases , such as Google Scholar, Garuda Portal, Directory of Open Access Journals (DOAJ), Scopus, and SINTA. The search navigation is optimized by combining several strategic keywords , including integration of science and religion, PAUD curriculum , early childhood education , children's religiosity , early childhood science learning , and science - religion harmonization .

The data processing process is carried out through the application of content analysis techniques executed through several systematic, interconnected stages . These stages begin with data reduction to sort and focus the literature most relevant to the direction of the study , followed by categorization of data into main theme clusters such as the science -religion integration paradigm , early childhood education curriculum development models , scientific learning approaches , and religiosity education. Next , in -depth data interpretation is carried out to identify relationship patterns and unique characteristics of the alignment model , finally leading to the drawing of conclusions based on a comprehensive synthesis of all analyzed literature . This series of analyses is designed to formulate a draft operational conceptual model as a theoretical basis in developing an early childhood education curriculum that combines scientific and spiritual dimensions proportionally .

In order to guarantee the degree of validity and objectivity of the findings, this study adopted the source triangulation technique by comparing, correlating , and verifying propositions and findings from various scientific references that have the same study focus . The researcher also conducted an in - depth critical review of each reference document to ensure aspects of theoretical validity , conceptual reliability , and the relevance of the data used . Through this strict methodological conditioning , the resulting study construction is expected to be able to present an objective , credible , and comprehensive portrait of the formulation of a model for harmonization of science and religion in the context of developing an Early Childhood Education curriculum .

RESULTS AND DISCUSSION

Harmonizing Science and Religion in Early Childhood Education

The results of the literature review indicate that the harmonization of science and religion in early childhood education is an increasingly relevant approach in addressing the challenges of modern education , which tends to experience a dichotomy between science and spiritual values. Modern education often positions science as objective , rational , and value- free knowledge , while religion is positioned as a normative realm separate from the scientific process . This condition has the potential to produce a generation that possesses intellectual intelligence , but lacks moral and spiritual balance in everyday life (Syahsiami , 2025; Luthfi , 2023) .

From the perspective of scientific integration , this separation is inconsistent with the Islamic educational paradigm, which views all knowledge as essentially originating from the same

source, namely God. Therefore, science and religion are not two opposing entities, but rather two complementary approaches to understanding the realities of life. The integrative - interconnective paradigm emphasizes that knowledge derived from empirical observation needs to be linked to spiritual values to produce a more complete and meaningful understanding (Aminuddin, 2010).

In the context of early childhood, this integration is crucial because it represents the golden age of human development. During this phase, children are highly curious about their surroundings, creating the potential for simultaneous introductions to scientific concepts and religious values. Research shows that learning experiences that integrate religious values with natural phenomena can help children develop a more holistic understanding of the world (Wantini & Suyatno, 2019).

The Urgency of Integrating Science and Religion in the Early Childhood Education Curriculum

The urgency of integrating science and religion into the Early Childhood Education (PAUD) curriculum is not only related to academic aspects, but also concerns the formation of children's character, morals, and spirituality. Wati et al. (2022) emphasized that instilling religious values from an early age serves as a primary foundation in shaping children's future character. Without a strong moral foundation, children potentially experience difficulties in managing behavior and emotions in later stages of development.

Furthermore, Akrim and Junaidi (2021) explain that religiosity is closely related to the mental health of early childhood. An environment rich in spiritual values can provide a sense of security, increase emotional stability, and help children build healthy social relationships. Therefore, the integration of religious values into the early childhood education curriculum not only serves to build character but also acts as a protective factor for children's psychological development.

Furthermore, the process of internalizing religious values in early childhood does not occur abstractly, but rather through concrete experiences in everyday life. Children learn from what they see, hear, and experience directly through interactions with parents, teachers, and their social environment. Therefore, learning that integrates science and religion needs to be designed contextually to suit children's cognitive developmental stages (Wantini & Suyatno, 2019).

Model of Harmonization of Science and Religion in Early Childhood Education Curriculum Development

Based on the results of the analysis of various literature, the model of harmonization of science and religion in the development of the PAUD curriculum can be formulated through three main components, namely integration of learning objectives, integration of learning materials, and integration of learning methods.

Integration of Learning Objectives

The integration of learning objectives emphasizes that the PAUD curriculum not only focuses on cognitive aspects, but also includes spiritual, moral, social, and emotional aspects. Syahsiami (2025) emphasized that ideal education is education that is able to develop children's

potential in a balanced manner between intellectual and spiritual aspects . In this context , science learning objectives such as observing , asking , trying , and communicating are combined with the objectives of forming religious character such as gratitude , responsibility , and concern for the environment . Thus , every science learning activity also becomes a means of internalizing religious values (Luthfi , 2023).

Integration of Learning Materials

Integrated learning materials allow children to understand science concepts through real experiences linked to religious values . Natural phenomena such as rain , plants , animals , day and night , as well as the surrounding environment can be used as learning media that simultaneously introduce the concept of divinity .

Wantini and Suyatno (2019) stated that early childhood develops religious understanding through concrete experiences , not abstract concepts . Therefore , when children learn about water as a source of life , teachers can relate this to the importance of maintaining cleanliness as part of religious values . This approach helps children understand that science and religion are interconnected in everyday life .

In addition , the integration of materials also enables STEAM (Science, Technology, Engineering, Arts, Mathematics) learning based on Islamic values which can improve children's critical thinking skills as well as spiritual awareness (Syahsiami , 2025).

Integration of Learning Methods

Learning methods in the science and religion harmonization model must be active , contextual, and appropriate to the characteristics of early childhood . Activities such as play , exploration , simple experiments , and projects are the most effective methods for introducing science concepts to children . Akrim and Junaidi (2021) emphasize that experiential learning can help children develop a deeper understanding while strengthening emotional and spiritual aspects. After conducting exploration activities , teachers can invite children to reflect on the experience in the form of gratitude or a simple prayer . For example , after observing plant growth , children are invited to discuss the benefits of plants for human life and then directed to express gratitude to God. This process demonstrates that learning does not stop at the cognitive aspect but also touches on the affective and spiritual aspects .

The Impact of Harmonizing Science and Religion on Child Development

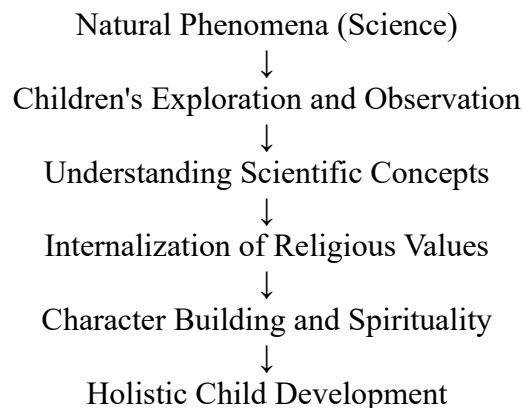
The implementation of science and religion harmonization in the Early Childhood Education (PAUD) curriculum has a significant impact on children's holistic development. From a cognitive aspect, children have the opportunity to develop curiosity , critical thinking skills , and problem - solving skills through exploratory activities. From a socio - emotional aspect , integrated learning helps children develop attitudes of cooperation , empathy , and responsibility . This is important in building children 's social skills from an early age . Wati et al. (2022) emphasized that character education starting from an early age will have a long - term impact on the formation of a child 's personality in the future .

From a spiritual perspective , integrating science and religion helps children understand that the universe is God's creation and should be appreciated and cared for . Akrim and Junaidi (2021)

state that a religious environment can improve children's psychological well-being and strengthen their emotional resilience.

Conceptual Model of Harmonization of Science and Religion in Early Childhood Education Curriculum

Based on the results of the literature synthesis, the model of harmonization of science and religion in the PAUD curriculum can be described as follows:



This model demonstrates that the learning process not only produces knowledge but also shapes children's values and character. The integration of science and religion makes the educational process more meaningful because it simultaneously connects knowledge, experience, and spiritual values. Aminuddin (2010) emphasized that scientific integration is an effort to eliminate the dichotomy of knowledge and build a more comprehensive educational paradigm. In the context of early childhood education, this paradigm is crucial because it forms the basis for shaping children's thinking in understanding the world scientifically and spiritually.

CONCLUSION

Based on the results of the literature review that has been conducted, it can be concluded that the harmonization of science and religion in early childhood education is an important and relevant approach in addressing the challenges of modern education which still tends to be dichotomous. The separation between science and religion in educational practices has the potential to result in an imbalance in student development, especially in the intellectual, spiritual, and moral aspects. Therefore, a learning model is needed that is able to integrate both aspects completely from an early age (Syahsiami, 2025; Luthfi, 2023).

Research shows that early childhood is in a developmental phase with significant potential for internalizing religious values and introducing scientific concepts through concrete experiences. The learning process at this stage is heavily influenced by direct interaction with the environment, making natural phenomena an effective medium for introducing scientific concepts and instilling spiritual values such as gratitude, responsibility, and concern for God's creation (Wantini & Suyatno, 2019).

The model for harmonizing science and religion in developing the PAUD curriculum can be formulated through the integration of three main aspects: learning objectives, learning materials, and learning methods. Integration of objectives emphasizes the balanced development of cognitive, spiritual, and character aspects. Integration of materials connects

natural phenomena with religious values , while integration of methods emphasizes experiential learning such as exploration , play , and value reflection (Akrim & Junaidi, 2021; Wati et al., 2022).

Thus , the model of harmonization of science and religion not only functions as a learning approach , but also as a strategy for character building and spirituality in children from an early age . The implementation of this model is expected to produce a generation that is not only intellectually superior , but also has noble morals , spiritual awareness , and high social concern. Overall , the integration of science and religion in the Early Childhood Education curriculum is an important foundation in building a holistic and sustainable education . Therefore , more systematic curriculum development and learning practices are needed so that the harmonization of science and religion can be optimally implemented in Early Childhood Education institutions.

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