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Research Article

Developing Ecological Awareness (*Adab Al-Bī'ah)* Among Madrasah Ibtidaiyah Students Through Natural Realia-Based Experiential Learning

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Abstract
This study is motivated by the importance of strengthening students' environmental character amid increasing ecological problems that have not been balanced by concrete behavioral awareness. This study aims to analyze the internalization process of environmental ethics (adab al-bī'ah) among Adiwiyata-based madrasah students through an experiential learning model utilizing natural realia media. A qualitative descriptive approach with a retrospective case study design was employed at MIN 3 Bondowoso. Data were gathered reconstructively post-learning activities through in-depth interviews with the fifth-grade homeroom teacher, students, and parents, and were validated through post-learning daily observations and documentation. Data trustworthiness was ensured using source triangulation. The findings indicate that the experiential learning model utilizing natural realia media successfully develops students' ecological awareness holistically. The internalization of adab al-bī'ah is consistently mapped through students' reflective memories, forming three active dimensions of post-activity behavior: hifzh al-bī'ah (preserving school environmental sustainability), ihsān ilā al-hayawān (developing active empathy toward animals), and daily self-regulation. The synergy between the reflection of realia-based learning and the Adiwiyata school culture is proven to accelerate the transformation of theoretical ecological knowledge into consistent pro-environmental behavior that extends to the students' home environments.

Keywords: *Ecological Awareness, Adab al-Bī'ah, Experiential Learning, Natural Realia*

Abstrak
Penelitian ini dilatarbelakangi oleh pentingnya penguatan karakter peduli lingkungan pada peserta didik di tengah meningkatnya berbagai permasalahan ekologis yang belum diimbangi dengan kesadaran perilaku nyata dalam menjaga lingkungan. Penelitian ini bertujuan untuk menganalisis proses internalisasi etika lingkungan *(adab al-bī'ah)* pada peserta didik madrasah berbasis Adiwiyata melalui model pembelajaran berbasis pengalaman *(experiential learning)* dengan memanfaatkan media *realia* alam. Penelitian ini menggunakan pendekatan deskriptif kualitatif dengan desain studi kasus retrospektif yang dilaksanakan di MIN 3 Bondowoso. Data dikumpulkan secara rekonstruktif setelah kegiatan pembelajaran melalui wawancara mendalam dengan wali kelas V, peserta didik, dan orang tua. Keabsahan data diperkuat melalui observasi harian pascapembelajaran dan dokumentasi, sedangkan keterpercayaan data dijamin melalui triangulasi sumber. Hasil penelitian menunjukkan bahwa model

pembelajaran berbasis pengalaman dengan memanfaatkan media *realia* alam berhasil mengembangkan kesadaran ekologis peserta didik secara holistik. Proses internalisasi *adab al-bī'ah* dapat dipetakan secara konsisten melalui refleksi pengalaman peserta didik setelah mengikuti kegiatan pembelajaran, yang kemudian membentuk tiga dimensi perilaku aktif, yaitu *hifzh al-bī'ah* (menjaga kelestarian lingkungan sekolah), *ihsān ilā al-hayawān* (mengembangkan empati aktif terhadap hewan), dan pengaturan diri dalam kehidupan sehari-hari. Sinergi antara refleksi pembelajaran berbasis *realia* alam dan budaya sekolah Adiwiyata terbukti mempercepat transformasi pengetahuan ekologis yang bersifat teoretis menjadi perilaku prolingkungan yang konsisten dan berkelanjutan, termasuk perilaku yang diterapkan peserta didik di lingkungan rumah.

Kata kunci: Kesadaran Ekologis, *Adab al-Bī'ah*, Pembelajaran Berbasis Pengalaman, *Realia* Alam.

INTRODUCTION

Education at the elementary madrasah level plays a fundamental role in shaping the foundation of an individual's character, morality, and behavior toward their surroundings. Islamic education views the integration of these three elements as the primary goal of learning; thus, the educational process does not stop at the transfer of knowledge but also includes the development of students' character (Miftahussurur, 2026). Amid the current escalation of the global ecological crisis including unchecked plastic pollution, damage to local ecosystems, and a decline in public awareness of hygiene environmental education at the elementary level faces significant challenges.

Conventional teaching approaches, which tend to be teacher-centered and text-based, have proven ineffective in fostering genuine environmental awareness. Students are often able to memorize ecological concepts in order to pass cognitive exams, but fail to translate that knowledge into environmental awareness that guides their daily actions. Therefore, effective environmental education requires hands-on experiences, a connection to the surrounding environment, and the active participation of students in concrete actions so that they can develop a deeper relationship with nature (Ardoin et al., 2020).

In the context of Islamic education at the elementary level, this ecological awareness is closely linked to the cultivation of a noble character toward the universe, known as environmental etiquette (adab al-bī'ah). Islam views nature not as an object of exploitation, but as a sign of God's greatness (ayat-ayat kauniyah) whose preservation must be safeguarded. Efforts to instill these religious ecological values have been widely implemented through the Adiwiyata movement, which promotes environmentally conscious and culturally sensitive schools. The synergy of the Adiwiyata program has proven to contribute to fostering an eco-friendly culture in elementary madrasahs (Rokhmah, 2019). However, to transform the physical practices of an Adiwiyata school into a deep spiritual awareness, a learning model is needed that engages not only the cognitive but also the emotional and affective aspects of students.

One of the learning models considered most effective for addressing these needs is experiential learning. The theory of experiential learning proposed by David Kolb (1984) asserts that knowledge is best constructed through the transformation of direct experience (concrete experience). For elementary school-aged children in the concrete operational stage (Piaget, 1964), a deep understanding of their environment is formed when they interact directly with real objects. This is where the use of natural objects plays a crucial role as a sensory stimulus for students (Jumiati et al., 2024). By interacting directly with real ecosystems, students not only develop an understanding of ecological science but also experience an emotional connection to nature, which accelerates the development of environmental awareness (Sujarwo et al., 2018).

Nevertheless, there is a fundamental research gap in the existing literature. Most previous research has viewed realia as merely teaching aids designed to boost students' cognitive learning outcomes and academic achievement through quantitative approaches. Research specifically examining how experiential learning models influence the development of the affective-spiritual domain specifically ecological awareness (adab al-bī'ah) among elementary madrasah students in Adiwiyata-based schools remains very limited (Rokhmah, 2019). This study aims to fill that gap by conducting an in-depth exploration of the role of experiential learning based on natural objects in helping elementary school students internalize environmental moral values. Therefore, this study aims to analyze how the implementation of experiential learning based on natural objects at MIN 3 Bondowoso can foster students' ecological awareness (adab al-bī'ah) through meaningful contextual learning experiences.

RESEARCH METHODS

This study employs a qualitative approach using a retrospective case study design. This design was deliberately chosen to thoroughly reconstruct the process of developing ecological awareness (adab al-bī'ah) among madrasah students following a series of experiential learning activities using natural objects as teaching aids. Data collection was conducted after the completion of the learning program to analyze the short-term impact and the character traits developed in the students. The study was conducted at MIN 3 Bondowoso, East Java, an elementary madrasah with Adiwiyata status that consistently integrates the natural environment as a living laboratory into its learning process.

The unit of analysis in this study is the cognitive, affective, and spiritual adaptation process of fifth-grade students, which reflects the development of ecological awareness (adab al-bī'ah) as a result of their reflection on direct learning experiences in the field as well as in their daily activities at the madrasah and at home following learning activities. The research participants were selected using purposive sampling and consisted of: one fifth-grade teacher who served as the lesson designer and facilitator, five fifth-grade students representing a range of learning engagement

levels, and several parents who served as confirmers of the students' independent behavior at home.

Data was collected using three main methods: in-depth reconstructive interviews conducted in a semi-structured format following the learning activities. Teachers were interviewed to gather their reflections on the implementation of the method; students were interviewed to reconstruct their memories, feelings, and the emotional impact they experienced while interacting with the mini-zoo realia; and parents were interviewed to confirm the consistency of their children's character development at home after the activity concluded. Next, data was collected through post-activity non-participatory observation. The researcher directly observed students' daily behaviors in the madrasah environment after class, such as disposing of trash, compliance with bringing water bottles, and students' daily interactions with the madrasah environment during recess. Finally, a documentation study was conducted on learning artifacts, including: video recordings of student activities during their exploration at the mini zoo, notes from worksheets or learning materials taken during the session, and photographs of the activities as authentic evidence of student interaction with realia.

The data analysis followed the interactive model proposed by Miles, Huberman, and Saldaña (2014), which consists of data condensation (sorting and simplifying field transcript data), data presentation (displaying data in the form of analytical narrative text), and drawing conclusions. The validity of the data was tested using source triangulation (comparing daily observational data with reconstructive interviews of students, teachers, and parents) as well as methodological triangulation (verifying the consistency between students' recollections from the interviews and records of their actual behavior at the madrasah).

RESULTS AND DISCUSSION

Implementation of Experiential Learning Based on Natural Objects

The development of ecological awareness at MIN 3 Bondowoso is achieved through the implementation of an experiential learning model based on natural objects. Real-world materials are tangible objects used directly in the learning process so that students can observe, touch, and interact with the objects being studied in a tangible way (Kartini, 2020). This activity is carried out through a structured exploration method at the mini zoo, which serves as a living, real-world environment. The lesson is designed so that fifth-grade students can independently develop an understanding of ecology and moral values by engaging all their senses during the activity.

This learning process consistently follows a systematic, experience-based learning model. Before the students go out into the field, the fifth-grade teacher provides them with theological conceptual framing. Students are guided to understand that animals and plants are part of God's creation and have the right to live in peace alongside humans, who serve as God's vicegerents on Earth. Next, the

students were taken to the mini zoo area for a guided tour accompanied by a tour leader. According to the teacher's account and the students' recollections, at that location the students observed the animals' behavior, listened to their sounds, felt their physical textures, and identified their dietary classifications directly using observation worksheets. The fifth-grade homeroom teacher explained the rationale behind using this realia-based learning model: "Learning with real-world objects is more effective because children can study the objects directly, making it easier for them to understand. If they only look at pictures and videos, they can only guess. They are also enthusiastic about this approach and enjoy the learning process."

Although the learning activities have concluded, the sensory memories and students' active physical engagement have left a lasting impression on their minds, generating high levels of enthusiasm and stimulating their daily emotional sensitivity. Students not only conducted scientific observations of the past, but also demonstrated short-term behavioral changes following the activity, such as taking care of plants and showing concern for their surroundings. Students acknowledged that this hands-on experience provided a deeper learning experience: "I prefer learning firsthand and being able to see the animals rather than just watching videos. At the mini zoo yesterday, I was able to feed the deer, hold the animals, and call them by their nicknames."

The use of natural objects within the framework of experiential learning has proven effective in providing concrete learning experiences that engage all of students' learning modalities (visual, auditory, kinesthetic, and tactile). This approach to science education, which integrates the teaching of religious moral values, has successfully transformed the abstract concept of environmental conservation into a tangible reality for elementary-aged students at the madrasah.

Development of Students' Environmental Awareness (Adab al-Bī'ah) Following the Activity

The results of the data analysis indicate that students' past emotional and physical engagement in nature-based learning has significantly contributed to the development of their current ecological awareness (adab al-bī'ah). Based on observations of daily behavior following the learning process and reconstructive interviews, the ecological awareness that has been fostered does not stop at a mere cognitive understanding of environmental sustainability, but rather crystallizes into concrete moral behavior that can be divided into the following three dimensions of adab al-bī'ah:

1. Hifzh al-Bī'ah

   The first dimension is reflected in the emergence of independent initiatives to maintain the cleanliness and sustainability of the school ecosystem after school hours. The Adiwiyata madrasah's initiatives (such as the ban on single-use plastic containers and the requirement to bring a reusable water bottle) gained emotional support after the students reflected on their interactions with the animals at the

mini zoo. Students realize that people's carelessness in disposing of trash can have fatal consequences for other living creatures.

Students' practical awareness of how to minimize the harmful effects of plastic waste goes hand in hand with a more systematic understanding of the food chain in ecosystems. The depth of concrete understanding gained from these direct experiences is reflected in the students' ability to reconstruct ecological cause-and-effect relationships after the activity. Based on the results of the reconstructive interviews, the students have demonstrated a coherent and logical understanding of basic ecological concepts. When asked to confirm the classification of living organisms, the students correctly identified that herbivorous animals depend on vegetation such as grass and plants for their survival. This understanding evolved into a more in-depth cause-and-effect analysis when students were presented with a simulated environmental degradation scenario; they logically concluded that the loss of plants as the primary producers would directly lead to the death of herbivorous animals due to the disruption of the food chain. Interestingly, this logical understanding successfully stimulated the students' ecological intelligence, as evidenced by their voluntary commitment to preserving plants in order to prevent the death of animals.

2. Ihsān ilā al-Hayawān (Empathy and Active Compassion for Animals)

   The second dimension is reflected in the growing sense of deep empathy for the welfare of animals as fellow creatures of God. Past physical interactions, such as petting a rabbit's fur and feeding a deer, foster a sense of tenderness in a child's heart. This empathetic behavior is not only evident at the madrasah but is also confirmed by parents to continue consistently in their daily lives at home.

3. Self-Regulation (Ecological Self-Control)

   The third dimension, which serves as a key indicator of the development of students' ecological awareness, is the ability to control one's behavior for the sake of the surrounding environment (self-regulation). While in the animal enclosure during the previous lesson, the students voluntarily refrained from speaking loudly or making sudden movements to ensure the animals did not become stressed. The student's cautious attitude stems from an inner awareness of the need to remain calm and behave appropriately while in the study conservation area. Based on the results of the post-activity follow-up, the students clearly understood the importance of controlling their volume and avoiding noise in order to protect the animals' psychological well-being. This collective commitment to refrain from such destructive or disruptive actions reflects the development of environmental etiquette (adab al-bī'ah) in the psychomotor domain, where students' self-regulation has evolved from mere formal compliance with teachers' instructions to an independent ethical awareness aimed at safeguarding the well-being of living beings around them. Through the integration of experience-based learning models and the use of natural objects as examined in a retrospective

study MIN 3 Bondowoso has successfully demonstrated that ecological awareness (adab al-bī'ah) can be effectively fostered in elementary madrasah students through concrete emotional and physical connections.

A Deconstruction of Kolb's Experiential Learning Cycle in Realia-Based Instruction

The application of an outdoor learning model using natural objects at a mini zoo accurately reflects the implementation of David Kolb's Experiential Learning cycle. Kolb (1984) posits that meaningful learning occurs when students go through the four phases of the learning cycle in sequence. First, the Concrete Experience phase. This phase occurs when students engage in hands-on exploration at the mini zoo during learning activities. Students use all their senses to observe the physical characteristics of the animals, touch them, feed them, and experience the atmosphere of the mini-ecosystem firsthand. This hands-on experience sparks the emotional interest of young children, who are psychologically in the concrete operational stage of development (Piaget, 1964). Hands-on experience is a crucial element of learning because knowledge develops through students' direct interaction with their environment (Rachmawati et al., 2023). Learning that positions students as active participants enables them to organize their learning experiences independently, develop critical thinking skills, and apply their knowledge in daily life (Dina et al., 2022).

Second, the Reflective Observation phase. After direct interaction, students are encouraged to reflect on their observations by completing a worksheet containing analytical questions about the reciprocal relationship between animals and their surroundings, such as identifying the categories of animal food. This reflective process is then further explored through discussions and daily learning activities at school. Through these activities, students begin to observe the reciprocal relationship between human behavior and animal survival, which ultimately fosters a concrete understanding of ecological cause and effect in their minds.

Third, the Abstract Conceptualization phase. At this stage, the teacher integrates students' physical reflections with the theological values of adab al-bī'ah. Abstract concepts in Islamic teachings regarding humanity's role as khalīfah fī al-ardh (stewards of the earth) and the prohibition against causing corruption (fasād) on earth are internalized into students' understanding. Theoretical knowledge of Islamic ecology now makes logical sense to students after being contextualized with the physical realities they have previously experienced.

Fourth, the Active Experimentation phase. This cycle takes place when students apply their abstract understanding to concrete actions (moral actions) in their daily lives at school after the activity has concluded. Based on non-participatory observations, students demonstrated initiative in maintaining the cleanliness of the madrasah environment and showed consistent ecological awareness in their daily lives at home.

The use of natural realia in this study demonstrates that experiential learning can transform environmental education from a passive and symbolic mode of instruction into an active, experiential, and learner-centered process (Sujarwo et al., 2018).

Through direct physical exposure to nature, lasting ecological impressions are formed within children's cognitive structures, thereby fostering a sustained sense of moral awareness. Real-world materials provide a more meaningful learning experience because students have the opportunity to learn directly through objects in their immediate surroundings (Nasution et al., 2025), thereby gaining experiences that foster a stronger conceptual understanding compared to learning that relies solely on images or verbal explanations (Handayani & Subakti, 2021).

The Theological Reconstruction of Adab al-Bī'ah as an Expression of Ecological Awareness

Theoretically, environmental awareness is often defined in secular terms as people's understanding of the importance of preserving nature for the survival of the human species itself (Rosa et al., 2018). However, within the landscape of Islamic education in elementary madrasahs, ecological awareness is further deconstructed into the concept of adab al-bī'ah, which is rooted in a theocentric spiritual framework (Nasr, 1996; Rokhmah, 2019). The findings of this retrospective study demonstrate that instilling adab al-bī'ah cannot be achieved merely by memorizing textual evidence in the classroom; rather, it must be brought to life through direct interaction with His creation. When the students touched and fed the animals during the previous activity, a process took place that awakened spiritual values within them—values that remain with them to this day. The students realized that animals are fellow creatures of Allah SWT who deserve compassion (rahmah) and protection from humans. It is this transcendental awareness that serves as the primary driving force behind the emergence of three dimensions of students' concrete actions following the activity: hifzh al-bī'ah (protecting the environment from damage), ihsān ilā al-hayawān (treating animals with kindness), and self-regulation (controlling one's destructive ego).

The integration of natural realia-based experiential learning has successfully fostered environmental ethics among elementary madrasah students, supported by three psychological-spiritual factors: 1) Triggers of Ecological Empathy: Physical contact and direct visual interaction with animals foster children's emotional connection to the natural world (connectedness to nature). This empathy serves as the primary foundation for instilling noble character (Chawla, 2020). 2) Transforming Values into Concrete Action: The Adiwiyata madrasah's physical habit-forming model (such as being plastic-free) gains new moral force in the minds of students. They comply with environmental rules not out of fear of punishment, but because of a theological awareness that damaging the environment constitutes a violation of spiritual etiquette toward the Creator (Rokhmah, 2019). 3) Internalization of Sustainable Character Traits (Malakah): The repeated hands-on experiences children have at the mini zoo solidify this ecological awareness into deeply ingrained character traits (malakah), which are consistently practiced from the madrasah environment to the family environment at home (Rokhmah, 2019).

The synergy between the physical culture of Adiwiyata madrasahs and a real-world experience-based learning model has proven effective in fostering comprehensive ecological awareness, fully integrating the cognitive, affective, and spiritual domains in elementary-aged children. The findings of this study enrich and confirm the theoretical framework of contemporary environmental education. The finding that direct experiences in nature can foster environmental empathy and pro-environmental behaviors is consistent with the study by Rosa et al. (2018). Furthermore, Chawla (2020) also emphasizes that children's positive interactions with nature from an early age have a significant long-term impact on fostering a strong ecological awareness as they grow into adulthood. In the context of elementary schools in Indonesia, this finding reinforces the research by Rokhmah (2019), which states that the Adiwiyata program is effective in promoting environmentally conscious behavior.

From a methodological perspective, the effectiveness of realia in this study aligns with the findings of Fauziyah et al. (2024) and Jumiati et al. (2024), who demonstrated that real objects can facilitate meaningful learning, thereby tangibly boosting student engagement and learning outcomes. According to Amalia et al. (2023), such meaningful learning experiences are achieved through the engagement of various senses during the learning process. Furthermore, the use of realia creates a more engaging learning environment and boosts students' motivation because they gain hands-on learning experiences through real objects (Susilowati et al., 2021).

However, the unique contribution and theoretical novelty of this study compared to previous studies lies in its success in integrating Western theory (Kolb's Experiential Learning) with Islamic ecological theology (Adab al-Bī'ah) at the Madrasah Ibtidaiyah level through a retrospective approach. While the majority of Western research (such as Collado et al., 2015; Rosa et al., 2018) view children's ecological awareness merely as a psychosocial response and social compliance for the sake of human survival, this study demonstrates that experiential learning based on natural realia can lead Madrasah Ibtidaiyah students to a level of transcendental ecological awareness through a structured retrospective method (Sujarwo et al., 2018). Students' environmentally friendly behavior is no longer driven solely by materialistic motives, but is grounded in theological motives as a form of religious practice and a manifestation of good character toward all living creatures created by Allah SWT, as mandated in Islamic education (Hayati, 2020).

CONCLUSION

This study found that an experiential learning model utilizing natural realia through structured exploration activities at a mini zoo effectively fostered ecological awareness (adab al-bī'ah) among Madrasah Ibtidaiyah students. A retrospective approach demonstrates that emotional memories of direct physical interactions are capable of instilling long-term character values in Madrasah Ibtidaiyah students. This process of developing ecological awareness proceeds systematically through Kolb's

learning cycle (concrete experience, reflective observation, abstract conceptualization, and active experimentation), which successfully integrates students' cognitive, affective, and spiritual aspects in a harmonious manner. As a result, this ecological awareness crystallized into tangible environmental ethics (adab al-bī'ah) following the learning process, manifested in three dimensions of concrete daily actions at school and at home, namely: hifzh al-bī'ah (initiatives to preserve the surrounding environment), ihsān ilā al-hayawān (the development of daily empathy toward animals), and self-regulation (the ability to exercise self-control in daily life). The success of this ecological character development is the result of a strong synergy between the Adiwiyata madrasah culture and an experiential, real-world, and practical outdoor learning model.

REFERENCE

Amalia, F., Nurlina, & Nur, A. M. (2023). *Penerapan media realia terhadap hasil belajar siswa dalam pembelajaran IPA kelas IV SD Inpres Batulapisi Kecamatan Tinggimoncong Kabupaten Gowa*. *COMPASS: Journal of Education and Counselling*, *1*(1), 103–109. https://doi.org/10.58738/compass.v1i1.270

Ardoin, N. M., Bowers, A. W., & Gaillard, E. (2020). Environmental education outcomes for conservation: A systematic review. *Biological Conservation*, 241, 108224. https://doi.org/10.1016/j.biocon.2019.108224

Chawla, L. (2020). Childhood nature connection and constructive hope: A review of research on connecting with nature and coping with environmental loss. *People and Nature*, *2*(3), 619–642. https://doi.org/10.1002/pan3.10128

Collado, S., Staats, H., & Corraliza, J. A. (2015). Experiencing nature in children's summer camps: Affective, cognitive and behavioural consequences. *Journal of Environmental Psychology*, 43, 1–9. https://doi.org/10.1016/j.jenvp.2015.05.002

Dina, S. R., Nafiah, M., & Siregar, R. (2022). Analisis penggunaan media realia terhadap kemampuan pemahaman konsep matematika pada peserta didik sekolah dasar. *Educational Technology Journal*, *2*(1), 1–9. https://doi.org/10.26740/etj.v2n1.p1-9

Fauziyah, R. I., Sutriyani, W., & Zumrotun, E. (2024). Penggunaan media realia dalam pembelajaran kontekstual terhadap hasil belajar siswa. *JagoMIPA: Jurnal Pendidikan Matematika dan IPA*, *4*(2), 87–96. https://doi.org/10.53299/jagomipa.v4i2.717

Handayani, E. S., & Subakti, H. (2021). Analisis penggunaan media realia melalui pembelajaran online di sekolah dasar. *Jurnal Basicedu*, *5*(2), 810–816. https://doi.org/10.31004/basicedu.v5i2.810

Hayati, R. S. (2020). Pendidikan lingkungan berbasis experiential learning untuk meningkatkan literasi lingkungan. *Humanika: Kajian Ilmiah Mata Kuliah Umum*, *20*(1), 63–82. https://doi.org/10.21831/hum.v20i1.29039

Jumiati, J., Kumala, S., & Arifa, T. R. (2024). Penggunaan media realia termodifikasi untuk meningkatkan hasil belajar IPA di MI Plus Al Falah Banjarmasin. *Al-*

Madrasah: Jurnal Ilmiah Pendidikan Madrasah Ibtidaiyah, *8*(1), 409-417. https://doi.org/10.35931/am.v8i1.3142

Kartini. (2020). *The use of realia media in the learning process can improve student learning outcomes*. *Social, Humanities, and Educational Studies (SHES): Conference Series, 3*(4), 1229–1233.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice-Hall.

Miftahussurur, W. (2026). *Reconstructing Islamic education pedagogy in the digital age: Integrating spiritual ethics and digital literacy*. Syaikhona: Jurnal Magister Pendidikan Agama Islam, *4*(1), 137–153. https://doi.org/10.59166/syaikhona.v4i1.450

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). SAGE Publications.

Nasr, S. H. (1996). *Religion and the order of nature*. Oxford University Press.

Nasution, L. R., Puspitasari, E., Umayah, S., & Munafiah, N. (2025). *Pemanfaatan media realia sebagai pengganti media konvensional dalam pembelajaran*. *Jurnal Sinergi Bangsa, 1*(1), 17–23.

Piaget, J. (1964). Part I: Cognitive development in children: Piaget development and learning. *Journal of Research in Science Teaching*, *2*(3), 176–186. https://doi.org/10.1002/tea.3660020306

Rachmawati, D. S., Setiyawati, E., & Sartika, S. B. (2023). Pengaruh media nyata terhadap hasil belajar kognitif pada materi IPA sekolah dasar. *Jurnal Kiprah Pendidikan*, *2*(2), 136–146. https://doi.org/10.33578/kpd.v2i2.176

Rokhmah, U. N. (2019). Pelaksanaan program adiwiyata sebagai upaya pembentukan karakter peduli lingkungan siswa di madrasah ibtidaiyah. *Al Qalam: Jurnal Ilmiah Keagamaan Dan Kemasyarakatan*, *13*(1), 67-88. https://doi.org/10.35931/aq.v13i1.92

Rosa, C. D., Profice, C. C., & Collado, S. (2018). Nature experiences and adults' self-reported pro-environmental behaviors: The role of connectedness to nature and childhood nature experiences. *Journal of Environmental Psychology*, 56, 152–162. https://doi.org/10.1016/j.jenvp.2018.06.003

Sujarwo, S., Samsi, I., & Wibawa, L. (2018). The implementation of learning tourism models to nurture environment care behavior. *Jurnal Cakrawala Pendidikan*, *37*(1), 2278-52. https://doi.org/10.21831/cp.v37i1.18784

Susilowati, A. Y., Sayekti, I. C., & Eryani, R. (2021). Penerapan media realia untuk meningkatkan motivasi belajar siswa. *Jurnal Basicedu*, *5*(4), 1160–1167. https://doi.org/10.31004/basicedu.v5i4.1160