

Strengthening the Character Education of Nature School Students Through the Learning with Nature Program

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Abstract

Character education plays a central role in Indonesia's national education system, yet holistic approaches that integrate values through direct, nature-based experiences remain underexplored. This study aims to analyze how the Belajar Bersama Alam (Learning with Nature) program at two nature-based schools in Jambi Province strengthens character education holistically. Using a qualitative approach with a case study design, data were collected through in-depth interviews, participatory observation, and document review involving 12 participants from Sekolah Alam Muaro Bungo and Madrasah Alam Insan Rabbani Sungai Penuh. Purposive sampling was applied to select school principals, classroom teachers, students, and parents. Data were analyzed using Miles, Huberman, and Saldaña's interactive model, with triangulation to ensure validity. Results indicate that the program effectively develops all four dimensions of Ki Hadjar Dewantara's character framework, Olah Hati, Olah Pikir, Olah Rasa, and Olah Raga, supported by teacher exemplary conduct, a character curriculum comprising 70% Akhlakul Karimah content, and active school-family-community partnerships. This study contributes an empirical model of contextual, nature-based character education in Indonesia, demonstrating that academic achievement and character development can be achieved synergistically.

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Introduction

Character education is one of the main pillars of Indonesia's national education system, which aims to shape the nation's next generation who are not only intellectually superior but also possess moral integrity and strong personalities. This statement aligns with Novianti's view in Aningsih et al., (2022) that education policy should focus on achieving moral education in the classroom. Therefore, parents, teachers, and schools, as stakeholders, are expected to implement this policy to help children apply positive values in their daily lives. In a global context, various countries have recognized the importance of character education as a response to the increasing moral degradation, identity crisis, and social challenges facing the younger generation. In line with Hidayat's opinion in Suciati et al., (2023), character education is closely related to morality. The moral quality of a nation is greatly influenced by the character and moral values of its students. Therefore, character education is necessary so that students can form a moral nation. Character education is not enough to be taught only through the transfer of knowledge in the classroom, but must be internalized through real experiences that are meaningful for students. Roberts et al., Carvalho et al., and Jickling et al. in Ameli, (2022) explained that the experience of interacting with nature and the existence of nature itself are seen as important elements in the inseparable educational process and therefore must be integrated into the future education system.

Nature school (*nature-based school*) is presented as an alternative educational model that seeks to integrate the values of life, the environment, and local wisdom into the learning process. Nature schools are educational institutions that focus on instilling character values in children as part of their learning process. One of the values emphasized is responsible treatment of the environment (Karadona et al., 2022). Unlike conventional schools, which tend to prioritize formal academic achievement, nature schools position nature as a learning laboratory that provides hands-on experience (*hands-on experience*) for students. Through the concept of schooling in nature, students gain practical experiences that foster their curiosity, creativity, and self-confidence. Learning outdoors also gives them the opportunity to apply knowledge and skills in real-life situations while simultaneously developing social and teamwork skills through interactions with peers and teachers. Furthermore, these activities strengthen awareness of nature and the environment, as well as an understanding of the importance of protecting natural resources (Cenić et al., 2023). This approach aligns with the principles of progressive education developed by Dewey, who asserted that meaningful learning occurs when there is a connection between direct experience and reflection. Dewey (Ortiz, 2020) stated that learning becomes meaningful when there is a connection between direct experience and reflection. He emphasized that concrete experiences can create understanding when they are given meaning by connecting biological, psychological, and social perspectives. In Indonesia, the nature school movement began to grow rapidly in the early 2000s in response to boredom with educational models that were considered too rigid and disconnected from the realities of life. Nature schools in Indonesia, such as the JIGS Medan Nature School, are developing alternative educational models that prioritize 21st-century life skills and a child-centered approach. Implementing programs such as anti-bullying projects is also part of this effort to meet the need for safe and supportive learning environments for students in today's society (Setiawati et al., 2022).

One of the flagship programs implemented in the nature school approach is the Learning with Nature program, a structured program designed to facilitate students learning directly from the natural ecosystem around them. This program integrates various character dimensions ranging from responsibility, environmental awareness, cooperation, to independence through authentic nature-based activities. This is in line with the opinion of Tohri et al., (2022) that students participate in planning and implementing learning activities, thereby developing leadership skills and a sense of responsibility. In addition, they learn to appreciate differences of opinion, respect each other, and practice self-control. Various studies have shown that outdoor education programs (*outdoor education*) can significantly improve students' social-emotional aspects. As explained by Sastia et al., (2025) in their research, which showed that outdoor learning activities significantly improve the social-emotional development of children aged 5 to 6 years. This improvement is clearly seen in the areas of empathy, cooperation, responsibility, independence, and emotional regulation, making nature-based education an effective strategy for improving social-emotional skills.

Many studies have been conducted on nature-based character education, but most research focuses on students' cognitive and psychomotor aspects, while the holistic dimension of character formation through structured programs in the context of nature schools remains relatively little explored. According to Harris et al. (2025), this gap is even more apparent when viewed from the implementation context, where studies specifically exploring nature-based interventions in formal school environments are still very limited. Research reveals that the effectiveness of nature-based programs is strongly influenced by the quality of teacher facilitation, program consistency, and active

student involvement. Mann et al. (2022) shows that without structured management of these factors, the program's impact on student character development cannot be fully optimized. On the other hand, internalizing local wisdom values into school culture has been shown to significantly influence students' behavioral patterns and moral awareness. Nurizka et al. (2020) emphasize that the local cultural context plays an important role in shaping student character. However, gaps remain (*gap*) in the literature on how the Learning with Nature program specifically contributes to strengthening student character in Indonesian nature schools in a contextual and in-depth manner, where existing research is generally still limited to environmental studies and learning facilities, and has not examined the contribution of structured programs to the formation of student character holistically (Eliyanti et al., 2025).

To fill this gap, this study uses a qualitative approach with a case study design (*case study*). The Qualitative approach was chosen because it is able to reveal in depth the meaning, process, and context behind the phenomenon of strengthening student character through the Learning with Nature program (Creswell, 2013). Qualitative research is an approach to explore and understand the meaning given by individuals or groups to a social or humanitarian problem. The case study design allows researchers to intensively explore a phenomenon in the real context of school life, so that the resulting findings are contextual and can provide theoretical and practical contributions, as emphasized by Yin in Ebneyamini et al., (2018) A case study is an empirical study that investigates a contemporary phenomenon in depth and in a real-life context, especially when the boundaries between the phenomenon and its context are not so clear. The use of case studies in character education research is also supported by a number of researchers who emphasize that the complexity of the character formation process can only be fully understood through in-depth and holistic methods as emphasized that the qualitative approach with a case study design was chosen because this allows researchers to understand the context and complexity of character formation more thoroughly so that it is able to reveal the phenomena experienced by the subject, including behavior, motivation, and activities as a whole in the real context of school life (Loviana & Tahlia, 2024).

Based on the above background, this study aims to identify and analyze how the Learning with Nature program in nature schools contributes to strengthening students' character education. Specifically, this study examines the character values developed through the program, the facilitation strategies implemented by educators, and the supporting and inhibiting factors in its implementation. This study is expected to provide empirical contributions to the development of a contextual, environmentally based character education model in Indonesia as shown by Hendriana et al., (2025). The Development of an Environmental Character Education Model is the extent to which character education, pro-environmental behavior, environmental character, and school culture influence students' character, as well as being a reference for educational practitioners who wish to implement a similar approach in their respective schools.

Method

This research uses a qualitative approach with a case study design. The qualitative approach was chosen because this study aims to understand in depth the phenomenon of strengthening student character education through the Learning with Nature program in nature schools, which cannot be quantified simply. According to Creswell (2013), qualitative research is an approach to explore and understand the meaning that individuals or groups ascribe to social or humanitarian issues. Qualitative research focuses on an in-depth understanding of phenomena through the process of

collecting data in natural environments and the researcher's interpretation of the meaning of the data obtained. The case study design allows researchers to intensively explore a phenomenon in the real context of school life, so that the resulting findings are contextual and rich in meaning. According to Yin in Ebneyamini (2018), a case study is an empirical investigation that investigates a contemporary phenomenon in depth in a real-life context, especially when the boundaries between phenomenon and context are not clearly visible. This research was conducted in two nature schools located in Jambi Province, namely the Muaro Bungo Nature School (SAMO) in Muaro Bungo Regency and the Insan Rabbani Nature Madrasah located in Sungai Penuh City. The two schools were selected purposively because they both implement a nature-based learning approach and have structured programs for building student character.

The participants in this study were 12 people who were selected using purposive sampling technique, which is a sampling technique based on certain criteria determined by the researcher in accordance with the research objectives. According to Sugiyono (2023) purposive sampling is a data source sampling technique with certain considerations, namely the selection of informants who are considered to be the most knowledgeable, understand, and directly involved in the social situation or object being studied so that they can provide more in-depth and relevant data to the research objectives. The participant selection criteria were based on direct involvement in the implementation of the learning program at the nature school. Participants consisted of four groups, namely: (1) 2 early high school students from each school, (2) 2 early high school teachers from each school, (3) 1 early high school parent from each school, and (4) 1 principal from each school. The selection of participants from various elements aims to obtain a comprehensive picture and triangulation of perspectives regarding the implementation of the Learning with Nature program in strengthening student character.

Data collection was conducted through three main techniques, namely in-depth interviews, participant observation, and documentation studies. In-depth interviews were conducted semi-structured with all participants to gather information related to the implementation of the Learning with Nature program, the character values developed, teacher facilitation strategies, and supporting and inhibiting factors of the program. According to Creswell (2013), qualitative interviews can be conducted in a structured, semi-structured, or unstructured manner, where researchers ask open-ended questions to participants to obtain their views and experiences regarding the phenomenon being studied. Participatory observation was conducted during learning activities in both schools to directly observe the interactions between teachers, students, and the natural environment in the context of the program. In addition, documentation studies were conducted on school documents such as learning program plans, student character development notes, teacher journals, and relevant nature school activity reports. According to Sugiyono (2023), documentation is a data collection technique carried out through records of past events, whether in the form of writing, drawings, or monumental works of someone, which can be used to complement data from observations and interviews. The entire data collection process was carried out directly in the field by researchers during the research period.

The collected data were analyzed using the interactive qualitative data analysis technique of Miles, Huberman, and Saldana. According to Miles, Huberman, and Saldana in Qomaruddin (2024), qualitative data analysis is a continuous and interactive process throughout the research until the data reaches saturation point, which includes four stages, namely data collection, data condensation,

data presentation, and drawing conclusions and verification. Data condensation is carried out by selecting, simplifying, and transforming raw data obtained from interviews, observations, and documentation. The data is then presented in the form of descriptive narratives and thematic matrices that facilitate the interpretation process. Data validity is guaranteed through source triangulation and method triangulation techniques, member checks with participants, and extended observations in the field. Triangulation with theory, according to Lincoln and Guba (1985) in Moleong (2013), is based on the assumption that facts cannot be checked for their degree of trustworthiness with one or more theories. Triangulation is carried out by comparing data obtained from various sources (teachers, students, principals, and parents) and from various data collection techniques (interviews, observation, and documentation) to obtain valid, consistent, and scientifically accountable data.

Result and Discussion

Result

This research was conducted in two nature schools in Jambi Province, namely Muaro Bungo Nature School (SA Muaro Bungo) and Insan Rabbani Sungai Penuh Nature Madrasah (MA Insan Rabbani). Data were collected through in-depth interviews with the principal, early grade teachers, high grade teachers, early grade students, high grade students, and parents from each school. The research findings were organized based on four character dimensions in the Ki Hadjar Dewantara (KHD) framework, namely Heart Exercise, Thought Exercise, Feeling Exercise, and Sports Exercise. Each dimension was analyzed from the perspective of the principal as a policy maker, teachers as facilitators, students as educational subjects, and parents as partners of the Three Centers of Education. Ki Hadjar Dewantara in Ramazhana & A'yun, (2024) introduced the concept of the Three Centers of Education consisting of family, school, and community. These three environments play an important role in shaping individual character because they are the place where the education and self-development process takes place.

Table 1. Recapitulation of Character Value Implementation in Two Nature Schools

No.	Character Values	SA Forehead Surgery	Sungai Penuh Nature School
1	Heart Exercise (Religious & Integrity)	Morning Talk, congregational prayer, Akhlakul Karimah curriculum (70%)	Nature meditation, heart-to-heart discussions, daily teacher briefings
2	Thinking (Independent & Creative)	Learning with Nature (BBA), business projects, nature expeditions	Independent projects, creativity from nature, living laboratory
3	Emotional Exercise (Nationalism & Tolerance)	Culture Day, morning talk on nationality, appreciation of local identity	Learning from the root, introduction to the natural wealth of Kerinci-Sungai Penuh
4	Sports (Mutual Cooperation & Social Care)	Green Lab, Garbage Bank (Samsou Bank), outbound, social service	Social Visit, Gratitude Fund, nature exploration, conservation program
5	Discipline & Responsibility	Peer monitoring, logical consequences, rolling leadership system	Shared social contract, daily evaluation, educational consequences

Source: Interview Data (2025)

As shown in Table 1, both nature schools develop all dimensions of character in line with the KHD framework through a structured Learning with Nature (BBA) program. Despite differences in

context and approach, both schools demonstrate consistency in placing morals as the primary foundation for character development, with morals constituting 70% of the curriculum in both institutions. In general, character education aims to develop noble morals based on the values contained in the Quran and Hadith (Ramdani et al., 2023).

Strengthening the Heart: Internalizing Religious Values and Integrity

The research findings show that strengthening the Olah Hati dimension at SA Muaro Bungo is implemented through the Akhlakul Karimah curriculum designed to shape students' Life Awareness as Khalifatullah Fil Ardh. The principal emphasized that the religious program is not designed as a formal routine, but rather as a reflection space integrated into every learning activity. He stated, "Here, sir, we don't want religious activities to be merely an obligation... in every worship activity, teachers play a direct role as role models." This statement indicates that teacher exemplary behavior (uswatun hasanah) is at the core of the strategy for forming religious character in this school. Rifki et al., (2023) argue that the success of character education is greatly influenced by teacher exemplary behavior in guiding students.

A senior high school teacher at SA Muaro Bungo integrates religious values through community service and mosque service as concrete forms of worship that go beyond ritual. He explained that the 70% portion of the Akhlak curriculum aims for students to internalize the principle that "surrendering to God can be done while standing, sitting, or even while contemplating His creation in nature." This approach demonstrates that worship is broadly understood as a social and ecological responsibility. This is in line with the opinion of Syahruramadhan et al., (2026) that the harmony of human relationships with God, others, and the environment forms a comprehensive ecological intelligence and fosters a caring character for the environment as a form of moral responsibility and worship.

Regarding the value of integrity, the early grade teacher of SA Muaro Bungo implemented a strategy that prioritizes accepting mistakes as learning opportunities. He stated that the feedback system was designed to value the process of self-correction: "I am more proud of a child who is wrong but tries to correct it, than a child who is immediately correct but does not learn from the process." Appreciation through 'Honesty Hero' stickers and open recognition in front of the class are forms of strengthening intrinsic motivation. Kusumawardhani & Wanda, (2026) stated that the implementation of the Restitution Triangle (restorative approach) is effective in shifting student motivation from external to internal and creates a safe learning environment and supports conflict resolution.

A senior student at SA Muaro Bungo confirmed the internalization of these values. When faced with the scenario of finding the answer key to an exam, the student stated firmly: "What's the point of getting a good grade if it's the result of dishonest means... I prefer to be honest with my own abilities because the process and honesty are far more valuable than just numbers on paper." This response reflects that the value of integrity has been internalized as a life principle, not just adherence to rules. This is in line with the opinion of Irsan et al., (2022) who stated that character building in the classroom is carried out through the habituation of religious values, compassion for others, honesty, politeness, and an attitude of responsibility by admitting mistakes.

At MA Insan Rabbani Sungai Penuh, the principal emphasizes an approach focused on eliminating fear as a prerequisite for fostering honesty and genuine religious awareness. He stated, "If children are frequently scolded, yelled at, or pressured by strict supervision, they will find ways

to lie." Instead, the school builds trust through daily one-hour briefings between teachers to equalize the frequency of mentoring students. The philosophy of "teachers learn from children" reflects an egalitarian and dialogical educational paradigm. Based on the thinking of Paulo Freire in Nurhayani et al., (2024), education is the right of every individual. Therefore, the implementation of character education is expected to reduce backwardness and various forms of oppression so that every child has equal educational opportunities.

The religious approach at MA Insan Rabbani integrates contemplation of nature as a method of organically cultivating gratitude and spiritual awareness. The principal explains, "We take the children outdoors to contemplate, so they can discover the personal meaning of God through what they see directly, not just theories in books." This strategy positions nature as a medium for existential reflection that helps students discover the personal meaning of faith amidst the challenges of adolescent mental crises. Anwar et al., (2025) argue that the collaboration of monotheistic values and ecopedagogy contributes to character formation and environmental awareness by strengthening moral responsibility rooted in spiritual values.

A parent from MA Insan Rabbani reported the real impact of this program in family life: "It's been a habit since childhood, Sir, especially since the school is in line with the education at home so the child is more sensitive when hearing the call to prayer." This statement shows the synergy between school and family education in strengthening the religious character of students, which is a real implementation of the Tri Pusat Pendidikan KHD concept. Simorangkir in Azizah, (2024) states that as the main educational institution, the family contributes to the development of personality, social skills, faith values, and religious attitudes in children.

Strengthening Thinking Processes: Independence, Creativity, and Critical Thinking Logic

The Learning with Nature (BBA) program at SA Muaro Bungo is designed as a learning ecosystem that systematically reduces students' dependence on teacher instruction. The principal explained, "Children don't just sit and listen to the teacher, but they directly interact with the real environment." This finding is supported by research by Ramli et al., (2022), which shows that learning that involves direct interaction with the environment not only improves conceptual understanding but also fosters a caring character for the environment. Real-life learning experiences encourage students to be more active in exploring knowledge and building awareness of their surroundings. Furthermore, teachers implement gradual scaffolding by gradually reducing guidance from complete verbal instructions until students are finally able to carry out tasks autonomously. Amaliya et al., (2023) stated that the implementation of scaffolding provides space for students to explore their abilities with teacher assistance, so that the learning process can take place optimally within the Zone of Proximal Development (ZPD).

A senior high school teacher in Muaro Bungo explained the strategy of independent learning through assigning specific roles in business projects: "I created a small organizational structure in each project group, with someone serving as an operational manager, someone in charge of equipment, or someone in charge of research." This clear delegation of responsibilities trains students to develop decision-making skills as a manifestation of leadership character. Guo in Nova (2023) stated that the Project-Based Learning (PjBL) approach not only encourages independent learning but also increases students' motivation to be actively involved in various learning activities.

At MA Insan Rabbani Sungai Penuh, independence is developed through the "Life Laboratory" concept in extracurricular activities. The principal stated, "We give students complete freedom to

design their activities, from making plans and preparing equipment to executing their ideas." This approach creates a safe zone for failure, allowing students to manage the consequences of their own decisions. Wahdania et al. (2026) argue that the implementation of a growth mindset plays a crucial role in fostering learning motivation, the ability to manage failure, resilience to academic pressure, and student psychological well-being.

Senior students from both schools demonstrated similar internalization of the value of independence. A student at SA Muaro Bungo stated, "I usually try to make my own daily schedule... I try to be disciplined without having to be constantly told or reminded by my parents." Meanwhile, a student at MA Insan Rabbani stated, "When it comes to managing my time, I don't wait for my parents to tell me to do it anymore." These two statements indicate the formation of an independent character stemming from internal awareness. Sumartono & Mardiana in Astuti et al., (2024) stated that independent learning helps students understand their potential and take an active role in the learning process, so that critical thinking skills can develop optimally.

Both nature schools integrate creativity development through open-ended questions and real-life problem-based projects. Early grade teacher SA Muaro Bungo explains, "I often ask open-ended, somewhat whimsical questions, such as, 'If you had ten banana leaves, what else could you make besides wrapping rice?'" This method encourages divergent thinking without limiting students' exploration. Creativity is not simply an innate talent, but rather a skill that can be developed through a structured educational process. (Duval et al., 2022) revealed that divergent and convergent thinking develop dynamically throughout childhood, and the school environment has a significant influence on the developmental trajectory of these creative abilities, as evidenced by a study of 222 children aged 4–12 in Montessori and traditional schools.

A senior high school teacher at SA Muaro Bungo designed a business project as an arena for divergent thinking: "I threw out a problem: 'How do I process the school garden's produce into a product that has a selling value but is still environmentally friendly?'" This approach demonstrates the integration of environmental awareness (Sports) with creativity (Thinking) in one integrated learning activity. Integrating character values into learning cannot stand alone but requires an integrated approach that touches on various dimensions of student development. (Asrial, Syahrial, Kurniawan, Perdana, et al., 2023b) emphasizes that student character assessment in elementary schools needs to be conducted holistically and technology-based, so that teachers can monitor the development of students' multiple character values more systematically and accurately.

At MA Insan Rabbani, the principal emphasized that creativity is supported by psychological safety: "Physical space is just a tool, but the most valuable thing is psychological space... if a child experiments and fails, we don't scold them or give them bad marks, but we encourage a heart-to-heart discussion." This principle aligns with the finding that a psychologically safe learning environment is a prerequisite for the growth of authentic creativity. Creativity will not develop optimally if students do not feel psychologically safe in their learning environment. (Han et al., 2022) demonstrated that psychological safety significantly influences student creativity in the context of project-based learning, with psychological empowerment as a mediating variable that strengthens this relationship.

Strengthening Emotional Processes: Nationalism, Tolerance, and Emotional Intelligence

The Olah Rasa dimension in both nature schools is developed through direct experiences that authentically connect students with local cultural identity and national values. SA Muaro Bungo

organizes Culture Day as a space for students to learn about local wisdom, while MA Insan Rabbani integrates the Learning from the Root philosophy by encouraging students to learn about the natural riches of Kerinci-Sungai Penuh through direct expeditions. (Sakti et al., 2024) argue that revitalizing character education through an ethnopedagogical approach unlocks the hidden potential of cultural values that have not been optimally utilized in shaping strong student character; character education rooted in local wisdom is a conscious effort to rejuvenate local culture within an educational framework, which contributes to the formation of a cohesive national identity.

The principal of MA Insan Rabbani explained the transformative approach to introducing history and national heroes: "Now the 'colonizers' are hoaxes and polarization on social media. Their patriotism is no longer about taking up arms, but about how they have strong filters, not being easily provoked." This statement demonstrates an effort to transform the spirit of patriotism from memorizing history to critical skills to face the challenges of the digital era. Critical citizenship education is increasingly relevant in the digital era filled with disinformation and social division. In line with this, (Mellado-Moreno & Burgos, 2025) argue that the critical dimension emphasizes the importance of developing students' abilities to identify and critically evaluate various problems and structural conditions that cause continued inequality and poverty. Strengthening these abilities is done through education based on social justice, developing critical and independent thinking patterns, and providing opportunities for students to engage in discussions of public policy and relevant social issues, both through conventional and digital media. Through this process, students are prepared to participate actively in political life and encourage social change.

The value of tolerance is developed through an egalitarian classroom structure. A senior high school teacher at SA Muaro Bungo implements a universalism-based circle discussion method: "Every child gets a turn to speak without interruption... I don't look at who is the richest or where they come from, but we give them an equal platform." Meanwhile, a junior high school teacher at MA Insan Rabbani uses the Equal Voice Box technique to ensure every student's voice is heard without bias based on social status. Both reflect a commitment to inclusive and equitable education. Similarly, students with special needs (Muazza et al., 2018) explain that students with special needs need to receive adequate learning support within the framework of the regular curriculum to be able to participate optimally in the learning process alongside other students. Therefore, all students have the right to equal learning opportunities without discrimination based on background or specific conditions. By providing equal space for participation to every student, teachers contribute to fostering the values of tolerance and respect for diversity in school life.

Senior students from both schools expressed a mature understanding of nationalism. MA Insan Rabbani student stated, "My dream in the future is to be an entrepreneur who brings great benefits to many people, while also being able to make Indonesia proud in the eyes of the world through economic independence." This statement shows that the concept of love for the homeland has been operationalized into a concrete and transformative life orientation. Stadler and Smith (2017) and Wu et al. (2019), as cited in (Sofwan et al., 2024), suggest that entrepreneurship education in elementary schools contributes to the formation of independent, creative, and responsible characters needed to face future economic challenges.

Strengthening Sports: Mutual Cooperation, Environmental Care, and Social Responsibility

The value of mutual cooperation at SA Muaro Bungo is implemented through the Green Lab and Waste Bank (Bank Samsou) programs, which involve real cooperation in environmental

management. The principal explained, "Gotong royong is not just memorized material in books, but is directly practiced, for example when children work together in the Green Lab to process compost, plant seeds, and care for plants." This activity also integrates the value of environmental awareness (Sports) with collective responsibility. (Rosniwati et al., 2024) emphasized that to help people care more about the environment, education needs to be carried out by integrating material on environmental awareness, because a strong understanding of the environment is expected to encourage someone to act better for their environment.

At MA Insan Rabbani Sungai Penuh, the Social Visit program regularly trains students' social awareness through direct interaction with local residents. The principal explained, "The children are invited to visit the homes of residents who may be sick or in need of assistance... we want them to feel firsthand that their presence should be a blessing for those around them." The Gratitude Fund program, managed by the students themselves, simultaneously trains financial responsibility and social empathy. (Scott & Graham, 2015) argue that elementary school-aged students are concerned with the welfare of others and broader social issues, including concern for the environment, so the program demandsservice-learninghave a greater chance of success in an elementary school context that provides more time with students than at the secondary level.Service-learningis a pedagogical approach designed to create space for students to critically reflect on community service within the framework of academic studies, with the aim of developing socially minded and actively engaged citizens (Mabborang et al., 2024).

Both schools integrate environmental awareness not as an administrative rule, but as an internalized ecological ethic. The principal of MA Insan Rabbani emphasized, "We instill in them that humans are Khalifatullah fil Ardh, leaders on earth whose duty is to maintain the harmony of nature... this ecological ethic is born from their love for nature." The concept of Khalifatullah serves as a theological framework that connects ecological responsibility with students' spiritual values. (Rakhmat, 2022) argues that in Muslim societies, religious values such as the concept of the caliph in Islam can provide a unique ethical foundation for shaping pro-environmental behavior. Thus, the internalization of the conceptcaliphin the Islamic education curriculum, it is a strategic strategy to form a generation of Muslims who are not only pious individually, but also have a high ecological awareness.

A senior high school teacher at SA Muaro Bungo applies the principle of logical consequences to waste management: "We shift the paradigm from punishment to logical consequences... if a student litters, we encourage them to reason through a discussion: what impact does this have on the harmony of our natural environment?" This restorative approach encourages students to develop ecological awareness that stems from understanding, not fear. (Lodi et al., 2022) concluded in their study that this approachrestorative justiceRestorative practices in schools have grown rapidly in the last decade because understanding how theory and research underpin their implementation based on scientific knowledge is crucial. Furthermore, these restorative principles can be extended to address environmental degradation as a form of collective harm that requires a communal response from the entire school community.

A parent from SA Muaro Bungo reported positive behavioral changes in their children at home related to mutual cooperation: "It's really important, Sir. Because if they are not encouraged to do it from a young age, when they grow up they will not care about their neighbors." This recognition indicates that the values developed in schools have successfully transferred to the family and

community environment, strengthening the concept of the Three Centers of KHD Education. (Asrial et al., 2024) argue that the study of elementary school students' character values through the science teacher's book instrument opens up new areas in character assessment that do not only focus on academic achievement, but on holistic character formation that can be transferred to the realm of life outside of school, including family and community.

Implementation of the Three Education Centers in the Learning with Nature Program

Table 2. Implementation of the Three KHD Education Centers in Two Nature Schools

Tri Pusat KHD	Character Dimensions	SA Forehead Surgery	MA Insan Rabbani Sungai Penuh
Family	Independence at home	Parents report that their children are becoming more independent: making their own beds, preparing their own lunch.	Children take the initiative to tidy up their beds and prepare their school supplies without being asked.
School	Leadership & Ethics	Pillars: Morals, Logic, Leadership, Business; Morals portion 70%	Pillars: Morals, Logic, Leadership, Talent; Morals portion 70%
Public	Mutual cooperation & social concern	Market Day social service, waste management with residents	Social Visit to residents, wildlife sanctuary conservation program

Source: Interview Data (2025)

Table 2 shows that the BBA program at both nature schools successfully implemented the Three Centers of KHD Education in an integrated manner. The schools do not function in isolation, but rather build active partnerships with families and the community. The principal of SA Muaro Bungo explained, "We don't want children to be disciplined at school, but rather 'free to let loose' at home. we invite parents to share the same vision, namely educating with love and without violence." This partnership paradigm reflects the awareness that effective character building requires consistency across contexts. Collaboration between schools and parents is necessary to instill character because student behavior is not only formed at school but also in the family environment, which will provide confidence, comfort, and enthusiasm for learning both at home and at school, so that character building occurs sustainably across various contexts of a child's life (Robertus B. Suharta, Serafin Wisni Septiarti, 2020).

Community involvement is evident in the community service program at MA Insan Rabbani, where students not only provide charitable assistance but also build reciprocal collaborations. The principal explained, "Instead of just giving books, they create simple 'Reading Corners' in residents' homes and become tutors themselves." This collaborative pattern trains students to be active agents of social change, a practical manifestation of the concept of Khalifatullah Fil Ardh. Student involvement in community-based activities provides opportunities to develop social responsibility, caring, cooperation, and active participation in community life, so that character values are not only understood conceptually but also practiced through real-life experiences in the social environment (Widiatmaka & Mujahidah, 2023).

Comparison of Facilitation Strategies: Similarities and Differences

Table 3. Comparison of Teacher Facilitation Strategies in Two Nature Schools

Strategic Aspects	SA Forehead Surgery	MA Insan Rabbani Sungai Penuh
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Discipline management	Logical consequences based on reflection; students repair the broken state themselves.	Heart-to-heart dialogue; not using anger; finding the cause of behavior
Religious approach	Integration of worship in BBA; worship as a reflection of the role of Khalifatullah	Contemplation of nature; worship as a need of the soul; habituation without coercion
The role of teachers	Egalitarian discussion partner; not an instructor; a companion who accompanies learning	Life facilitator; role model; teacher learns from children
Character evaluation	Reflective journaling, logic flow boards, peer monitoring systems	One-hour daily briefing; individual evaluation; literacy reflection journal
Parental involvement	Fluid communication; sharing similar habituation strategies at home	A shared vision of non-violence; transparent partnership through regular meetings

Source: Interview Data (2025)

Table 3 reveals that despite variations in facilitation strategies, the two nature schools demonstrate strong philosophical convergence. Both reject authoritarian, fear-based approaches and embrace a dialogic, trust-based approach. This approach emphasizes warm, dialogic, and trust-based relationships while maintaining clear expectations and boundaries. This approach has been shown to be more effective in fostering student engagement and internal motivation than authoritarian approaches that rely solely on control and compliance (Jahrir & Nojeng, 2025).

The main difference lies in the modality of character evaluation. SA Muaro Bungo uses a peer monitoring system and reflective journaling as process-based assessment instruments, while MA Insan Rabbani relies on daily one-hour briefings between teachers for individual student evaluations. Both approaches reflect a commitment to authentic assessment that goes beyond purely cognitive measurements. The integrated assessment system, coupled with technological advancements, takes the form of electronic assessment (e-assessment). E-assessment makes the assessment process more efficient and uses a simple end-to-end process (Asrial, Syahrial, Kurniawan, Aldila, et al., 2023a).

The most fundamental similarity across both schools is the teacher's role as an active role model, not just a transmitter of material. An early-grade teacher at MA Insan Rabbani stated, "The teacher's role here is as a discussion partner or facilitator for the children." Similarly, an early-grade teacher at SA Muaro Bungo stated, "I position myself not as a superior, but as a discussion partner." This transformative role of the teacher aligns with the concept of educators as growth partners (pamong) in KHD's thinking. From this perspective, teachers function not as dominating authorities in learning, but rather as learning partners who accompany, facilitate, and provide guidance according to the developmental needs of students (Pratiwi & Fajarini, 2021).

Discussion

The findings of this study demonstrate that the *Belajar Bersama Alam* (BBA) or Learning with Nature program contributes substantially to the holistic strengthening of students' character education in two nature-based schools in Jambi Province. The most salient result is that character formation does not occur through moral instruction alone, but through an integrated ecosystem consisting of direct engagement with nature, teacher modelling, reflective dialogue, a 70% *Akhlakul Karimah* curriculum allocation, and active collaboration among school, family, and community. These findings directly address the research objectives by showing how the program develops the four dimensions of Ki Hadjar Dewantara's character framework: *Olah Hati* through religiosity and integrity, *Olah Pikir*

through independence and creativity, *Olah Rasa* through nationalism and tolerance, and *Olah Raga* through mutual cooperation, social responsibility, and environmental care.

The results are consistent with recent global scholarship emphasizing that nature-based and outdoor learning can support students' socio-emotional, academic, and behavioural development. Mann et al. (2022) argue that outdoor learning provides meaningful opportunities for developing twenty-first-century competencies, particularly collaboration, problem solving, resilience, and social awareness. Similarly, Harris et al. (2025) show that nature connectedness can be deliberately developed in children and young people and may positively influence behaviours for learning, including engagement, self-regulation, and social interaction. The present study extends these findings by showing that nature-based learning is not merely an instructional strategy, but also a moral and cultural formation process when embedded in a coherent character curriculum. In contrast to global studies that often frame nature-based learning through psychological, environmental, or competency-based lenses, this study situates nature as a spiritual, ethical, and social learning space grounded in the Indonesian concept of *Khalifatullah Fil Ardh*.

This finding also resonates with Ameli's (2022) argument that nature should not be treated as a passive learning background, but as an active participant in the educational process. In the two schools studied, nature functions as a living laboratory through which students learn responsibility, gratitude, discipline, and ecological ethics. However, the Indonesian context gives this process a distinctive orientation. While many international studies emphasize nature connectedness as a pathway to well-being or sustainability, the BBA program integrates ecological responsibility with religious consciousness and local wisdom. This explains why environmental care in the two schools is not presented only as a civic duty, but as part of students' moral identity and spiritual responsibility.

The study's findings further align with global research on psychological safety and creativity. Han et al. (2022) found that psychological safety significantly supports students' creativity in project-based learning by strengthening psychological empowerment. This is reflected in the practices of both schools, where teachers avoid fear-based discipline and instead use heart-to-heart dialogue, reflective feedback, and tolerance for failure. Students are encouraged to ask questions, design projects, manage roles, and learn from mistakes. This finding is also consistent with Duval et al. (2022), who highlight that children's divergent and convergent thinking develop dynamically and are influenced by learning environments. The BBA program supports this development by creating open-ended, project-based, and context-rich learning experiences.

In relation to Indonesian and local studies, the findings support Tohri et al. (2022), who emphasize the urgency of local wisdom-based character education in elementary schools. The present study confirms that local culture, community interaction, and environmental familiarity can become powerful resources for character formation. The implementation of Culture Day, Learning from the Root, Green Lab, Waste Bank, Social Visit, and Gratitude Fund programs demonstrates that character education becomes stronger when it is anchored in students' lived realities. Similarly, Sakti et al. (2024) found that ethnopedagogy can revitalize local wisdom and strengthen character education in early childhood settings. This study extends that argument to nature schools by showing that ethnopedagogical values can be integrated not only through cultural symbols, but also through ecological practice, community service, and reflective dialogue.

The findings also correspond with Suciati et al. (2023), who report that character and moral education are closely related to learning outcomes, self-character, performance, and mental health. In this study, students' character development appears in concrete behavioural changes, such as honesty, independence at home, responsibility in group projects, empathy toward community members, and environmental discipline. Khadijah et al. (2021) similarly found a positive relationship between character education and academic achievement, suggesting that the dichotomy between moral formation and academic success is problematic. The present findings support this position by showing that character education can be integrated into learning activities without reducing academic quality. Instead, moral, cognitive, social, and ecological dimensions reinforce one another.

Theoretically, pedagogically, and politically, this study offers several important implications. Theoretically, the findings strengthen Ki Hadjar Dewantara's holistic framework by demonstrating that *Olah Hati*, *Olah Pikir*, *Olah Rasa*, and *Olah Raga* can be operationalized through structured nature-based learning rather than taught as abstract moral categories. Pedagogically, the findings suggest that teachers should move from authoritarian instruction toward facilitative, dialogical, and reflective practices that support engagement, emotional well-being, media literacy, and identity formation. The students' understanding that contemporary nationalism involves resisting hoaxes, polarization, and digital provocation shows that character education must address online behaviour as part of moral citizenship. From a policy perspective, the findings indicate the need for educational policies that integrate character education, ecological literacy, digital citizenship, and mental health support into school programs. Schools should be encouraged to design experiential curricula that balance academic learning with social-emotional development, environmental responsibility, and critical media awareness.

The novelty of this study lies in its contextualization of nature-based character education within the integrated framework of Ki Hadjar Dewantara and *Khalifatullah Fil Ardh*. Unlike previous studies that tend to examine outdoor learning, local wisdom, or character education separately, this research demonstrates how these dimensions interact within a structured school program. Methodologically, the use of a qualitative case study across two nature schools provides rich empirical insight into how principals, teachers, students, and parents collectively construct a character education ecosystem. The study contributes to the literature by offering an empirical model of contextual, ecological, spiritual, and culturally grounded character education in Indonesian nature schools.

Nevertheless, this study has several limitations. Its scope is limited to two nature schools in Jambi Province, which restricts the generalizability of the findings to other regions or school types. The qualitative design provides depth but does not measure the long-term impact of the BBA program on students' character development using standardized instruments. Future research should involve broader comparative studies across different provinces, include longitudinal designs, and combine qualitative inquiry with validated character measurement tools. Further studies may also examine how nature-based character education influences digital resilience, mental health, ecological behaviour, and students' ability to negotiate identity formation in increasingly complex online and offline environments.

Conclusion

This study concludes that the Learning with Nature (BBA) program implemented at Muaro Bungo Nature School and Insan Rabbani Nature Madrasah Sungai Penuh has proven effective as a vehicle

for strengthening students' character education holistically, encompassing the four dimensions of Ki Hadjar Dewantara: Heart Exercise, Thought Exercise, Feeling Exercise, and Sports Exercise in an integrated and contextual manner. The research findings confirm that the success of the BBA program in shaping students' character is supported by three main conditions that mutually reinforce each other, namely the consistency of teacher facilitation based on exemplary behavior and a dialogical approach, the integration of a meaningful character curriculum with a portion of Akhlakul Karimah of 70%, and active partnerships between schools, families, and communities as a concrete manifestation of the Three Centers of Education. The character values developed ranging from religiousness, integrity, independence, creativity, nationalism, tolerance, mutual cooperation, to environmental concern are not taught as abstract knowledge, but are internalized through authentic and meaningful direct nature-based experiences. The concept of Khalifatullah Fil Ardh serves as an integrative framework that provides coherence of values between students' ecological, spiritual, and social responsibilities. This research provides a scientific contribution in the form of an empirical model of character education based on the natural environment that is contextual in Indonesia, while also confirming that the dichotomy between academic achievement and character formation is an unfounded assumption, both can be achieved synergistically through a structured nature-based learning approach rooted in local wisdom. These findings enrich the literature on character education, particularly in the context of Indonesian nature schools, and can serve as a reference for the development of more holistic, ecological, and cultural character education policies and practices in both formal and non-formal educational units.

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