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# STRENGTHENING ENVIRONMENTAL MOVEMENT IN ISLAMIC SCHOOLS: ECOTHEOLOGY-BASED CHARACTER EDUCATION AT SD ALAM AZZAHRA, EAST LAMPUNG

[1]Septiani Selly Susanti, [2]Siti Fatimah, [3]Ermanita Permatasari
[1,2,3]Sekolah Tinggi Agama Islam Darussalam Lampung, Indonesia
[1]sseptianiselly@gmail.com, [2]sitifatimah241089@gmail.com,
[3]gainzkahandoko@gmail.com

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**ABSTRACT**

Environmental problems, from piling waste to the careless use of water and energy, are visible in everyday school life. This community service program aimed to integrate Islamic ecotheological values into the character education of students through an Islamic School Environmental Care Movement at SD Alam Azzahra. The program involved 96 students, 14 teachers and staff, and 24 parent representatives over 12 weeks, using Participatory Action Research (PAR) in three cycles of mapping, planning, action, and reflection. Data were collected through observation, interviews, focus group discussions, questionnaires, and documentation, and were analysed descriptively. Five ecotheological values (tawhid, khalifah, amanah, mizan, and ihsan) were translated into six school programs: prayer and nature contemplation, nature-verse learning, Clean and Green Friday, a waste bank, an Amanah Garden, and water-saving ablution. The mean score across five indicators of environmental care character rose from 48.6 to 82.6, and the share of students disposing of waste properly increased from 52% to 91%. The movement can be replicated in other Islamic primary schools with contextual adjustments.

**Keywords:** *Ecotheology; character education; environmental care; Islamic school; participatory action research.*


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## INTRODUCTION

Environmental issues are no longer seen merely as the affairs of scientists and the government, but as moral challenges that demand the involvement of all citizens, including children. Waste accumulation, waste of water and electricity, and shrinking green spaces are clearly visible in school yards. Within the framework of sustainable development goals, UNESCO (2017) places education as a separate goal as well as the main means to achieve other goals, so education for sustainable development needs to be integrated into the curriculum, learning activities, and school culture. This message feels relevant for the elementary school level, because it is at this age that children's basic habits begin to form and are easier to guide.

Environmental care character education in elementary schools has been widely studied in Indonesia. Purwanti (2017) emphasized that environmental care character needs to be realized through habituation and role modeling, not merely delivered as lesson material. Narut and Nardi (2019) analyzed the environmental care attitudes of sixth grade students in Ruteng City as a basis to strengthen this character, Chan et al. (2019) discussed environmental care movements in elementary schools, and Ismail (2021) highlighted environmental care character education linked to the habit of maintaining cleanliness at school. Rokhmah and Munir (2021) showed that environmentally conscious school culture plays a role in shaping the environmental care character of elementary school students. However, these findings also reveal recurring obstacles. Naziyah et al. (2021) analyzed the implementation and obstacles of environmental care character education in elementary schools, and one of the problems is the lack of cooperation between parents and teachers. Efendi (N. Efendi 2020) reported similar issues, compounded by the limited availability of adequate facilities. In other words, the main challenge is not only in students' knowledge but also in consistency of habituation, support of facilities, and involvement of all parties.

At the policy level, Presidential Regulation Number 87 of 2017 concerning Strengthening Character Education establishes religious, nationalist, independent, mutual cooperation, and integrity values as the main character values that need to be strengthened in educational units. Religious values are placed as one of the foundations, so Islamic schools have ample space to make religious teachings a

source of motivation for daily behavior, including behavior towards the environment. This is where ecotheology becomes a relevant bridge.

Ecotheology can be understood as an effort to connect theological teachings with ecological ethics and practical responsibility towards nature. Gade (2019) shows that the Islamic tradition views the environment as an ethical idea, not just a crisis to be addressed, with broad sources ranging from holy scriptures, Islamic law, to educational programs and fieldwork in Southeast Asia. Shahid (2020) examines the morality of human caliphate in the Qur'an through Islamic ecotheology theory, while Bensaid (2018) places Muslim spirituality and environmental sustainability as two interconnected things. Within this framework, there are at least five values that can be passed down to the world of basic education. First, tauhid, which is the belief that nature is a sign of Allah's greatness so that destroying it means ignoring that mark. Second, caliph, which is the position of humans as stewards of the earth as mentioned in QS. Al-Baqarah verse 30. Third, amanah, which is the awareness that the earth is a trust that will later be held accountable. Fourth, mizan, which is the principle of balance and not excessive as indicated in QS. Ar-Rahman verses 7 to 9. Fifth, ihsan, which is doing good to all creatures, in line with the prohibition of causing corruption on earth in QS. Al-A'raf verse 56 and the warning about damage on land and sea caused by human actions in QS. Ar-Rum verse 41. In addition, the hadith that mentions cleanliness as part of faith (HR. Muslim) provides a practical foundation that children can easily understand.

The role of religion in environmental movements is also evident at the policy and community levels. Mangunjaya and Praharawati (2019) note that the Indonesian Ulema Council has established a special institution to handle the environment and natural resources and issued several fatwas related to conservation, and although fatwas are not positive law, their influence on the lives of the community is considered significant. Hancock (2020) describes how Muslim activists build environmental knowledge at the intersection of religion and politics. In the field of education, Efendi et al. (2017) examined Islamic views on environmental conservation education in pesantren in West Lombok, Herdiansyah et al. (2016) discussed environmental awareness to realize eco-pesantren, and Haris and Afdaliah (2016) noted efforts to implement a green curriculum in environmental education in

Indonesian schools. Most of these studies focus on pesantren or higher levels, and few describe how ecotheology values are processed together with elementary school members through participatory community service activities.

SD Alam Azzahra is an Islamic elementary school with a nature concept covering about 2,400 square meters with a garden, garden, fish pond, and learning gazebos. The initial conversations and observations by the PKM team showed several issues that appear contradictory to the image of the nature school. Plastic waste from snack packaging often mixes with organic waste in classroom trash bins, ablution faucets are often left to flow, classroom lights turn on when not in use, and plants in some garden plots are poorly maintained. Religious lessons about preserving Allah's creation also tend to stop as knowledge and have not become a habit practiced daily. Teachers expressed the desire to have a clear framework of activities, but there is no guidance that systematically connects Islamic values with environmentally friendly practices.

Based on the description, this PKM activity is designed using a Participatory Action Research (PAR) approach. This approach was chosen because it places school members as agents of change, not as targets of the program. Afandi et al. (2016) explain PAR as an approach that invites the community to research their own problems and change them through joint action, while Chevalier and Buckles (2019) refer to it as research and action work carried out together with people, not for or about them. The objectives of this activity are (1) to map the initial conditions of environmental care behavior and understanding of ecotheology values at SD Alam Azzahra, (2) to formulate and implement the Islamic School Movement for Environmental Care participatively, and (3) to assess changes in students' environmental care character as well as the supporting and inhibiting factors.

## METHOD

### 1. Location, Partners, and Activity Time

The activities were held at SD Alam Azzahra for 12 weeks, from August to October. The activity partners consisted of the principal, 14 teachers and education staff, 96 students from grades I to VI, and 24 parent representatives. The implementation team consisted of five lecturers and six students who acted as facilitators, not as preachers. Meetings with teachers and parents were held every

two weeks, while activities with students were held almost every school day in the form of brief routines and one major activity every Friday.

**2. Participatory Action Research**

This activity uses the Participatory Action Research (PAR) approach. In this approach, problems are not formulated unilaterally by the service team but are explored together with the school community so that they understand the root causes, decide the most feasible actions, and participate in assessing the results (Afandi et al. 2016). The main principle is participation, collaboration, and change directly felt by the actors. Rahmat and Mirnawati (2020) describe PAR as a model of community empowerment that moves through planning, action, observation, and reflection. Chevalier and Buckles (2019) add that PAR operates as a collective learning process centered on social action, so that the knowledge produced is also useful to the practitioners.

In this activity, PAR is carried out through four repeated stages, as shown in Figure 1. The first stage is initial mapping and problem identification, when the team together with teachers and students assesses the condition of the school as it is. The second stage is participatory planning, when findings are discussed and transformed into activity plans. The third stage is action and mentoring, which is the implementation of the plan within the school environment. The fourth stage is reflection and joint evaluation to assess what succeeds, what still has problems, and what needs to be improved in the next cycle.

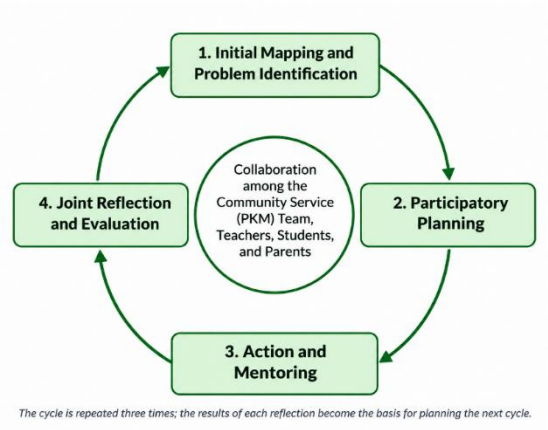


**Figure 1.** Participatory Action Research Cycle in the Islamic School Movement for Environmental Care

Figure 1 shows four PAR stages arranged in a circle and surrounded by arrows clockwise. The circular arrangement was deliberately chosen to emphasize that the activity does not stop at a single action. The reflection results in the fourth stage again become material for mapping and planning in the next cycle. The circle in the middle marks that all stages are carried out together by the PKM team, teachers, students, and parents, so no party is merely a spectator. In this activity, the cycle is repeated three times, and each cycle increasingly focuses on habituation and continuity.

**3. Implementation Stages**

Cycle I took place from the first to the fourth week with a focus on mapping and formulating movements. The team observed the school environment, prepared a school area map with students, held focused group discussions with teachers, and developed problem trees to find the root causes. The result of this cycle is the formulation of the Islamic School Movement for Environmental Care along with six priority programs.

Cycle II took place from the fifth to ninth weeks with a focus on habituation implementation. Each program was carried out gradually, starting from the activity that was easiest for students to accept. Teachers received brief guidance before the activity, and the team conducted daily observations recorded in the field journal. At the end of the cycle, teachers, student representatives, and parents reflected together to improve the schedule and task distribution.

Cycle III took place from the tenth to the twelfth week with a focus on strengthening and sustainability. The activities that had been running were improved, the Little Environmental Ambassadors began leading part of the activities, and the school developed simple operational procedures and pocket modules to be used after the PKM team finished their duties. The final evaluation was conducted in the last week.

**4. Data Collection and Analysis Techniques**

Data were collected using five techniques. Observations were made on student behavior and the physical condition of the school, especially waste management, water and electricity usage, and plant care. Semi-structured interviews were conducted with the principal, teachers, and several students. Focused group

discussions were conducted with teachers and parents to explore needs and agree on the program. Questionnaires were given to 72 students from grades III to VI before and after the activity, containing 30 statements on five indicators on a four-level scale, converted to a scale from 0 to 100. Students in grades I and II were observed through observation sheets because they were not yet able to fill out the questionnaire independently. Documentation in the form of photos, field notes, and archives of students' work completed all the data.

Questionnaire and observation data were analyzed descriptively by calculating average scores, percentages, and differences before and after the activity. Interview, discussion, and field note data were analyzed qualitatively through three steps: data sorting, presentation in the form of essays, and drawing conclusions. Data validity was maintained by comparing findings from several sources and techniques, as well as by confirming preliminary results with teachers in each reflection session.

## RESULTS AND DISCUSSION

### 1. Initial Condition: Sufficient knowledge, Habits Not Yet Formed

Mapping in Cycle I showed that students and teachers were actually already familiar with religious messages about protecting Allah's creation, but those messages were not yet evident in daily habits. Observations over seven school days showed that only 52 percent of students disposed of trash in its place without warning. About six out of ten classroom trash bins contained trash mixed with plastic packaging and food scraps. During ablution, the faucet was often left fully open, and some classrooms still kept the lights on when empty. The initial questionnaire scores also showed a gap between knowledge and behavior. The knowledge score about ecotheology values was only 46, while the lowest waste sorting behavior score was 40.

Focused group discussions with teachers clarified the causes. Religious and environmental lessons have so far been conducted separately, so verses and hadiths about protecting the earth have not been linked to concrete actions at school. Teachers also said that they do not yet have activity guidelines, segregated trash bins are not available in all classrooms, and parents have not been involved in habituation at home. Through problem trees, participants concluded that the root of the problem

lies in three things: the absence of a value framework connecting religious teachings with environmental practices, the lack of facilities and procedures that facilitate habituation, and weak cooperation between school and family.

These findings align with previous reports. Naziyah et al. (2021) and Efendi et al. (2020) both found that the lack of cooperation between parents and teachers, as well as limited facilities, hinder the formation of environmental care character in elementary schools. What distinguishes SD Alam Azzahra is the strong Islamic values that have not yet been operationalized, so the opportunity for improvement lies in how to connect these values with concrete activities.

**2. Participatory Planning: Formulating Movements**

At the planning stage, teachers, student representatives, and parents together with the PKM team formulated the Islamic School Movement for Environmental Care. This formulation is formulated based on the principle that every activity must have a clear foundation of values, be easy for children to do, and can be carried out with resources already available at school. The five ecotheological values, namely tauhid, khalifah, amanah, mizan, and ihsan, were chosen as the foundation because their meanings are easy to explain to children in everyday language. These five values are then translated into six programs that form the content of the movement, as illustrated in Figure 2.

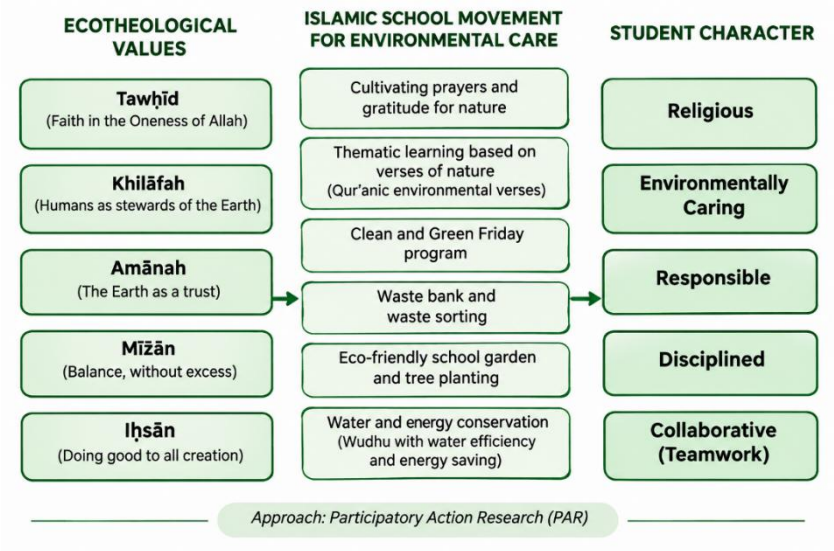


**Figure 2.** Framework of integrating ecotheological values into the Islamic School Movement for Environmental Care and student character

Figure 2 is read from left to right. The left column contains five ecotheology values that form the basis of the movement along with brief explanations in language close to the child, for example, amanah interpreted as earth as entrusted as entrusted. The middle column contains six programs that are tangible manifestations of the movement in schools, ranging from habituation of prayer and contemplation of nature to water-saving and energy-saving ablution. The right column contains five expected character traits to grow, namely religiousness, environmental care, responsibility, discipline, and mutual cooperation. The arrow from left to right shows that values do not stop as teachings but are practiced through activities that transform into character. All these processes are carried out using the PAR approach so that each program is born from the agreement of the school community.

A more detailed relationship between ecotheological values, the form of activities, and the character being fostered is presented in Table 1. This table is used by teachers as a reference so that every activity is always accompanied by an explanation of the values behind it, so that students do not merely follow instructions but understand their religious reasons.

**Table 1.** Integration of Ecotheological values into the Islamic School Movement for Environmental Care and student character

| Ecotheological values | Forms of activities at school | Built-in character indicators |
|---|---|---|
| Tawhid | Morning prayers and dhikr in the school garden; contemplation of nature before lessons begin | Religious; gratitude and admiration for Allah's creation |
| Khalifah | Formation of the Little Environmental Ambassador and the green duty schedule for each class | Responsibility; leadership |
| Trust | Trust Garden: each class takes care of their own plants and records their development | Discipline; environmental care |
| Mizan | Wudu saves water, saves electricity, and sorts waste from the source | Living simply; not excessive |
| Courtesy | Clean and Green Friday; sharing the harvest with the school community | mutual cooperation; empathy |

### 3. Actions in Cycles II and III: Six Movement Programs

The first program is the habit of prayer and contemplation of nature. Every morning, for ten minutes, students gather in the school garden to pray, give thanks, then observe a natural object, such as leaves, insects, or clouds. The teacher asks simple questions such as who created this leaf and what happens if the leaf is damaged. This brief activity becomes the gateway to the value of monotheism,

because students learn to see nature as a sign of Allah's greatness, not as meaningless objects. The teacher notes that the classroom atmosphere is calmer after the activity, and the students begin asking about living beings they encounter.

The second program is thematic learning of Natural Verses. Religious teachers and class teachers prepare one theme every two weeks that relate verses or hadiths to the lesson topic, such as water, plants, and waste. In the water theme, students study QS. Ar-Rahman verses 7 to 9 about balance, then measure how many liters of water are used when performing wudu with the tap fully open and the tap shrinking. In the cleanliness theme, students discuss hadiths about cleanliness as part of faith and practice it by making classroom cleanliness rules. In this way, religious lessons and environmental lessons no longer run separately.

The third program is Clean and Green Friday. Every Friday, the first 45 minutes are spent cleaning classroom areas, gardens, and pathways leading to the prayer room in mutual cooperation. Task distribution is done per class with teacher assistants, and higher classes assist the lower classes. This activity trains the value of ihsan because students are invited to take care of shared spaces, as well as training mutual cooperation because tasks are completed by sharing roles. In the early weeks, teachers still have to remind frequently, but by the eighth week, most students have already taken cleaning tools without being asked.

The fourth program is waste bank and waste sorting. Each class receives two trash bins with different inscriptions and colors for organic and inorganic waste. Clean inorganic waste is weighed at the school waste bank managed by the Small Environmental Ambassador, while food scraps and leaves are put into composters for garden fertilizer. In eight weeks, the waste bank collects about 142 kilograms of inorganic waste, and the proceeds from the sale are used to buy seeds and garden tools. This makes students see that sorted waste can be beneficial, changing their attitude from simply throwing it away to managing it.

The fifth program is the Trust Garden. Each class is responsible for several polybags and garden plots planted with chili, tomato, water spinach, eggplant, as well as 25 fruit tree seedlings around the field. In total, there are about 150 polybags of food crops. Students record the plant height and watering schedule in the class garden book. The program name deliberately uses the word amanah so that students

understand that the plants they care for are entrusted and must be accounted for. When plants wilt due to late watering, the teacher invites students to reflect on the meaning of trustworthiness, not blame. The first harvest is distributed to teachers, school staff, and parents as a form of ihsan.

The sixth program is water-saving and energy-efficient wudu. At the wudu area, reminder stickers are installed containing orderly and economical wudu sequences, and under several taps, buckets for holding used wudu water are provided to water plants. In each class, the green duty staff are responsible for ensuring the lights and fans turn off when the room is empty. The mizan value is the main message, namely that using in moderation is part of Islamic teachings. In the eleventh week, observations showed that most students had turned off the faucet when rubbing the wudu limbs and turned off the lights when leaving the room.

In addition to these six programs, the school formed the Little Environmental Ambassadors consisting of 12 students from grades IV to VI called the Earth Trust Guardians. They were tasked with helping waste banks, leading morning prayers, and setting examples for juniors. The formation of these ambassadors strengthened the value of the caliph, because students learned that being the earth's steward means being responsible means being willing to bear responsibility, not just accept orders. Parents were involved through household activity sheets containing simple tasks, such as sorting waste at home and saving water during bathing, as well as through regular meetings to share experiences.

**4. Achievements and Changes in Student Character**

The questionnaire results before and after the activity for 72 students from grades III to VI showed improvements in all indicators, as shown in Figure 3. The average score of the five indicators increased from 48.6 to 82.6, an increase of 34.0 points.

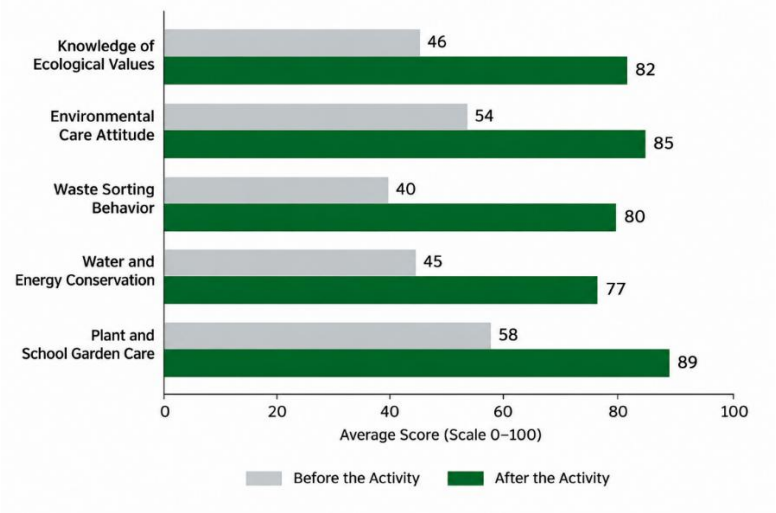


**Figure 3.** Comparison of the average scores of five environmental care character indicators before and after the activity (n = 72)

Figure 3 compares the average scores across five indicators: knowledge of ecotheology values, environmental care attitude, waste sorting behavior, water and energy saving, and caring for plants and gardens. Gray stems show scores before activities, and green stems show scores after activities. The largest increase is in waste sorting behavior, from 40 to 80, in line with the presence of sorted trash bins, waste banks, and daily mentoring. Knowledge of ecotheology values also rose sharply, from 46 to 82, after students participated in Natural Verses learning. The indicator of caring for plants and gardens reached the highest score, at 89, because students were directly involved and could see the results of their work. Meanwhile, the indicator of water and energy saving reached 77, the lowest score in the final measurement, because this habit requires longer reminders.

Observation data reinforced the questionnaire results. The percentage of students who disposed of trash in its place without warning increased from 52 percent to 91 percent. The volume of inorganic waste mixed in the classroom trash bin decreased by about 43 percent based on weekly weighing. Plants in the Amanah Garden that remained alive and well-maintained until the end of the activity reached about 88 percent of all polybags. From a qualitative perspective, the teacher stated that students reminded each other more often, and some parents reported that their children began requesting separate trash bins at home. A fifth-grade student said she felt sad when she saw her friend litter carelessly because the earth is a trust. Such statements show that the value of trust is beginning to be understood from the perspective of feelings, not just rules.

## 5. Reflection: Supporting and Inhibiting Factors

Reflection at the end of each cycle produces several supporting factors. The commitment of the principal and teachers is the main capital because they are willing to be role models in sorting waste, performing ablution frugally, and caring for the garden. The nature school concept, which already has land and basic facilities, facilitates program implementation. The PAR approach makes teachers feel ownership of this movement, so the activities are not seen as burdens from outside. In addition, direct and enjoyable activities, such as gardening and weighing waste, help students maintain the habit.

On the other hand, there are several obstacles. At the beginning of the activity, the students' old habits are still strong, so the teacher must remind them frequently. Teacher time is limited because this activity runs simultaneously with a busy curriculum. Some parents are unable to attend meetings due to work reasons, so habituation at home is not evenly distributed. In addition, water and energy saving indicators require consistent visual reminders because this behavior is difficult to observe directly. To overcome this, the next cycle adds reminder stickers, clearer duty schedules, and text messages to parents through the class communication group.

## 6. Discussion

The results of this activity show that ecotheological values can be translated into character education in elementary schools if translated into concrete and repetitive activities. Gade's (2019) view that the environment in Islamic tradition is an ethical idea is evident in students' experiences, namely when watering plants is interpreted as fulfilling a mandate, not just a duty on duty. Shahid (2020) study on the morality of the caliphate also finds its practical form in the Little Environmental Ambassador program, because the responsibility as a caliph is realized through roles that children can perform according to their age. In line with Bensaid (2018), who combines Muslim spirituality and environmental sustainability, students' motivation does not only come from school rules but also from gratitude and responsibility to Allah.

From the character education side, these results reinforce Purwanti's (2017) view that environmental care character is formed through habituation and role modeling. The largest increase in waste sorting behavior scores indicates that behavioral change occurs more easily when facilities are available, tasks are clear, and teachers set an example. This also addresses the obstacles reported by Efendi et al. (2020) and Naziyah et al. (2021), namely poor facilities and weak cooperation between parents and teachers, through the provision of sorted trash bins and the involvement of parents in household activity sheets. The finding that school culture plays an important role, as stated by Rokhmah and Munir (2021), is reflected in changes in shared habits, such as Clean and Green Fridays, which have now become school traditions. The movement designed here also supports strengthening religious values, mutual cooperation, and independence as referred to in Presidential Regulation Number 87 of 2017, and aligns with the direction of education for sustainable development according to UNESCO (2017).

This activity also adds to practices that have been more frequently reported in pesantrens. Efendi et al. (2017) and Herdiansyah et al. (2016) describe conservation education and eco-pesantren as forms of applying Islamic values in environmental preservation, while Haris (2016) emphasize the need for a green curriculum in schools. The experience at SD Alam Azzahra shows that similar ideas can be applied in elementary schools with language and activities appropriate to the child's world. Support from the community and religious institutions, as seen in environmental fatwas recorded by Mangunjaya and Praharawati (2019) and Muslim activist movements explained by Hancock (2020), legitimizes that protecting the environment is part of religious practice. Thus, schools can rely on broader discourse when convincing teachers and parents.

The PAR approach has proven helpful in maintaining sustainability. Since the program was formulated by school members, teachers expressed their willingness to continue the initiative after the PKM team finished. The school set up simple operational procedures for waste sorting and water usage, created a pocket module on Children's Ecotheology about 20 pages thick, and made Clean and Green Friday a regular item on the school calendar. Through an official decree, the principal became the overall person in charge, a coordinating teacher along with three other teachers

led the initiative team, and student leaders in each class were assisted by their homeroom teacher. Monitoring was done through daily checklists by student leaders, monthly team evaluation meetings, and semester reports to the principal. Facility maintenance is funded by the school's cleanliness budget and proceeds from selling recycled goods, while parental involvement is maintained through parent-teacher meetings each semester, monthly community work, and home activity sheets initialed by parents. As Afandi et al. (2016) and Chevalier and Buckles (2019) reminded, the ultimate goal of PAR isn't just to produce programs, but to foster the community's ability to keep learning and taking action. The limitations of this activity are the implementation time of only 12 weeks, measurements using student self-report questionnaires, and the lack of a comparison group, so long-term behavior changes need to be monitored further.

## CONCLUSION

The Islamic School Movement for Environmental Care, implemented with the PAR approach at SD Alam Azzahra, successfully integrated five ecotheology values, namely tauhid, khalifah, amanah, mizan, and ihsan, into students' character education through six programs: habituation of prayer and contemplation of nature, learning of Verses of Nature, Clean and Green Friday, waste bank, Amanah Garden, as well as water-saving and energy-saving ablution. This activity increased the average score of the five environmental care character indicators from 48.6 to 82.6 and raised the percentage of students who dispose of waste in its place from 52 percent to 91 percent. The involvement of teachers, students, and parents from the planning stage is an important factor that allows the movement to continue independently.

Suggestions for schools include maintaining consistency in habituation, strengthening the role of Small Environmental Ambassadors, and expanding parent involvement through regular communication. For future service teams and researchers, it is recommended to extend the mentoring period, add comparison groups, use long-term behavioral measurement, and try similar models in other Islamic elementary schools in different contexts.

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