

## Teaching Environmental Literacy in Early Childhood Education to Improve the Character of Environmental Care

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<b>Abstract</b>	
<p><b>Article History</b></p> <p><b>Article Submission</b> 30 January 2023</p> <p><b>Revised Submission</b> 24 February 2023</p> <p><b>Article Accepted</b> 27 March 2023</p>	<p>This study aimed to describe environmental literacy teaching in early childhood education, which consists of teacher competence and the implementation of ecological literacy learning. This study used a qualitative case study design, with data collected from interviews, observations, and reflective journals. Data were collected through semi-structured interviews with four teachers, two children, and one parent. This research was conducted at Sabilina Islamic Kindergarten, an Early Childhood Education institution in Bekasi City, West Java Province, which carries out the flagship Sabilina Sayangi Bumi (Sasami) program. The Sasami Program aims to build a caring character for the environment through various environmental activities designed by teachers. Interviews were conducted on teacher competence, implementation of ecological literacy learning in schools, instilling environmental literacy values, and assessment. Semi-structured interviews were conducted with instructors, students, and parents to gather data. The results indicated that the teachers had good pedagogical skills. Teachers can master effective learning management by developing a curriculum that supports environmental literacy learning, preparing learning plans, selecting appropriate materials based on the child's age, conducting assessments, and paying attention to early childhood learning principles. The implementation of ecological literacy through sorting trash, reduce-reuse-recycle (3R), a little gardening, animal lovers, instill the value of environmental literacy, and conducting assessments.</p> <p><b>Keywords:</b> Environmental Literacy; Early Childhood; Teaching; Improve the Character; Collaboration</p>

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## **Introduction**

Environmental problems on Earth are becoming a growing issue in the 21st century. Human activities to improve the quality of life through knowledge and technology have an impact on environmental problems, such as forest encroachment, illegal mining, air pollution, pollution of rivers, seas, and lakes, destruction of wild habitats, a crisis of quality and quantity of clean groundwater, and erosion and silting of waterways resulting in flooding. As a result of human activities that harm the planet and disrupt the ecosystem, the rate of environmental change has diminished. For environmental damage prevention, efforts must be made to educate people and foster environmental stewardship. Ecological responsibility necessitates safeguarding the environment, preventing pollution, and mitigating other negative environmental impacts.

Environmental problems are not only problems of development but also problems of knowledge and education that go beyond learning about the environment and must also understand how to solve environmental problems. Ecological education recognizes values and clarifies concepts to develop the skills and attitudes needed to understand and appreciate the interrelationships between humans, their culture, and their biophysical environments. Environmental education is a collaborative content and pedagogy involving environmental studies students to encourage behavior change and action.

Environmental education plays an essential role in protecting the environment. By educating people on the importance of looking after the environment, we can help reduce the impact of human activities on the environment and ensure that our planet remains healthy and sustainable. Environmental education teaches people the impact of their actions on the environment. It can help people understand the consequences of their actions, such as the effects of burning fossil fuels, deforestation, and pollution. Educating people on these topics can help them make more informed decisions regarding their activities and how they can help protect the environment. Environmental education can also raise awareness of the importance of conserving natural resources. This can help people understand how their activities affect the environment and how they can reduce their environmental footprint. People can learn about the importance of using renewable energy sources, conserving water, and recycling to reduce resource consumption.

Creating operational environmental literacy is the ultimate objective of environmental education. Understanding and interpreting the state of ecological systems and taking steps to preserve, repair, or restore them are two aspects of environmental literacy. According to Roth, operational environmental literacy is the ability to regularly understand environmental problems, gather and assess related data, investigate alternatives, and make decisions based on those alternatives. It is also the ability to adopt positions and take actions that support and advance ecological knowledge. Environmental literacy is also described as having the information and mindset necessary to act wisely in various environmental situations. Environmental literacy consists of four elements: environmental knowledge, which involves fundamentals; attitudes toward the environment; opinions about the environment, sensitivity to environmental conditions; and feelings towards the environment. Cognitive skills include the ability to recognize environmental problems, analyze the environment, and put plans into action. Behavior, which requires taking concrete steps against the surroundings.

Teaching aids are also a valuable resource for environmental education. They range from books and videos to interactive activities and simulations. Using these materials, instructors can enhance their classroom instruction and provide students with hands-on learning experiences. For example, a video can be used to illustrate a concept, while an interactive activity can help students develop an understanding of a particular environmental topic. One of the significant challenges in environmental education is to engage students effectively in the learning process. This can be challenging because environmental topics are complex and abstract. Additionally, a lack of physical resources, such as access to nature, can make providing a meaningful learning experience difficult. To address this challenge, instructors should strive to create a stimulating learning environment and use teaching aids that actively engage students in the learning process.

Environmental education in children is essential, and motivation for eco-friendly formation in childhood may have a lifelong effect. Environmental education is a suitable and beneficial procedure that teachers may use to set young children on the path to becoming environmentally

responsible youth and adults. Environmental education needs to be connected to children's unique beliefs about the problem at hand for it to be effective. Early childhood environmental education is seeing a dynamic rise in study and practice due to ongoing environmental issues and increased interest in the scientifically proven advantages of nature's rich experiences for babies and children.

The notion that children need nature and that healthy child development depends on positive interactions with the natural world provides substantial support for environmental education at the early childhood level. A sustainable future is based on environmental attitudes and behaviors, but more needs to be understood about how these attitudes and behaviors improve in infancy. Young children's participation is deeper, richer, and longer-lasting when they are engaged emotionally and cognitively. Preschoolers who can freely explore natural playgrounds begin to develop environmentally responsible behaviors. The younger the age at which they develop an interest in protecting the environment, the more probable it is that when children grow up and vote for citizens, they will support government initiatives for ecological well-being. Therefore, it is essential to introduce environmental issues to children from an early age to build their environmental awareness with the hope that when they grow up, they will have positive attitudes, knowledge, and behavior toward the environment.

Teachers' roles in environmental literacy are essential. Teachers need to be involved in developing environmental education, overcoming detected obstacles, and supporting the deepening of cultural complexity, thus enabling a holistic and systematic understanding of environmental education. Environmental education in schools is an essential strategy for achieving environmental protection. One of the significant purposes of education is to prepare young people for the future; such education offers opportunities for empowerment so that young people can work toward the goal of their choice. In teaching environmental literacy, teachers invite students to be actively involved in learning to build knowledge, attitudes, and skills in the environment.

Early childhood educators may implement environmental education by integrating pedagogy into open-ended, modeled, and purposefully framed play to allow children and teachers to learn about environmental education from the beginning. Through these activities, children get much exposure to topics the teacher has created as part of environmental education to help them develop positive environmental attitudes, knowledge, and abilities.

Environmental education is essential for teaching from early childhood to develop sensitivity to environmental problems and increase environmental literacy. Therefore, developing a learning environment following early childhood characteristics is necessary. These are: (1) Environmental Learning that instills loving behavior in the environment; (2) learning environment that intensifies the interaction of students and learning resources; (3) environmental learning, which is done while playing; (4) learning to develop the potential of students; (5) learning environment that provides a sense of security for students; (6) environmental learning, which is carried out in an integrated manner; (7) environmental learning involving community participation; and (8) environmental learning, which is thematic based on the environment.

The study found that using the problem-based learning approach in the classroom helped increase students' environmental literacy. Problem-based learning is used in crucial learning planning, which examines environmental literacy components and the learning model to ensure that learning is effective and efficient and yields the best possible outcomes. Environmental literacy initiatives must be long-lasting.

Research has shown that teaching environmental literacy in early childhood education is instrumental in nurturing and developing the characteristics of environmental care. However, more research needs to be conducted on this approach's effectiveness. In particular, there is a need to understand what techniques, strategies, and tools are effective in creating a culture of environmental care in the classroom. In addition, researchers need to understand what kind of environmental literacy is best suited to early childhood education. This study aimed to describe environmental literacy teaching in early childhood education, which consists of teacher competence and the implementation of ecological literacy learning.

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which consists of teacher competence and implementing environmental literacy learning. This research was conducted at the Sabilina Islamic Kindergarten, an Early Childhood Education institution in Bekasi City, West Java Province, which carries out a flagship Sabilina Sayangi Bumi (Sasami) program. The Sasami program aims to build a caring character for the environment through various environmental activities designed by the teachers.

## **Methodology**

Data were gathered for this research through a qualitative case study research design using interviews, observations, and self-reflective diaries. Qualitative data were collected to describe environmental literacy teaching in Early Childhood Education, which consisted of teacher competence and the implementation of environmental literacy learning.

### **Participants**

The participants in this study were four teachers, two students, and one parent of Sabilina Islamic Kindergarten students in Bekasi City, West Java Province. The teachers were female and were responsible for the Sabilina Sayangi Bumi (Sasami) program, an environmental learning program conducted at the school. The participants in this study were children aged 5-6 years. Teachers who were part of an environmental learning program conducted at the school and were willing to participate in the study research design using interviews, observations, and self-reflective diaries were included in the study. Teachers and parents who were not interested in the interviews were excluded from this study.

This was a qualitative case study with interviews, observations, and self-reflective diaries. Qualitative data were collected to describe environmental literacy in Early Childhood Education. Qualitative case studies are an effective research method for gaining insight into a particular phenomenon or population. Researchers can gain a more rounded understanding of the topic through interviews, observations, and other data collection methods. In many cases, qualitative research is used to understand better a population for which little to no data is available. Qualitative studies can provide valuable insights into a topic; however, the key to collecting valuable data is the number of participants. A common mistake in qualitative research is the attempt to interview many people, resulting in a lack of depth in the collected data. Instead, focusing on fewer participants and allowing for more in-depth interviews would be more beneficial. This provided an opportunity for the researcher to explore a particular topic more deeply, leading to more productive results. Hence, we conducted an in-depth study with interviews, observations, and self-reflective diaries and decided to have a small sample size to conclude without research bias.

### **Data Collection**

Semi-structured interviews were conducted with instructors, students, and parents to gather data. Interviews were conducted on teacher competence, implementing environmental literacy learning in schools, instilling environmental literacy values, and assessment. Data were also obtained through learning planning documents, documentation of activities in the form of photos and videos, and teacher reflection journals. Interviews were also conducted with two students and two parents of students.

### **Data Analysis**

Data were analyzed by reducing the data from interviews, observations, and reflection journals. In this study, the validity of the data was checked using a participation extension, observation persistence, and triangulation.

## **Results**

### **Teacher Competence**

Teachers should be capable of instructing and educating students. Teachers should work to

comprehend and implement specific well-considered techniques to promote student learning engagement. Pedagogical, psychological, social, and professional competencies are necessary for teachers to deliver high-quality instruction. Teachers should perform their duties effectively and professionally to achieve national education's aims. To do this, they must possess the four skills of pedagogical competence, professional competence, personality competence, and social competence. The professional competence of teachers includes various competencies in various fields, such as pedagogical, cultural, communication, personal, and intellectual, which are necessary for effective teaching. Teachers must master pedagogical competence to manage to learn effectively. The competencies involve identifying each student, organizing and carrying out instruction, assessing learning results, and cultivating students' potential.

"The Sasami program was originally the result of our study by teachers in schools regarding environmental damage conditions. Meanwhile, in Quran Sura Al-Baqarah verse 30, Allah says about the question of the angel why Allah created (leader) on earth the person who caused damage to him. Therefore, we are determined to make a program to prepare future leaders who love and protect the world." (Teacher 1 interview, June 11, 2020)

"We participated in a seminar on Saving the Earth and obtained some worrying facts about environmental conditions. Forest destruction, water and air pollution, messy garbage everywhere, and the sea that is no longer safe for fish make us worry about the future. After attending the seminar, we were asked to create an action plan and agreed to create a Sasami program to save the earth." (Teacher 2 interview, June 11, 2020)

Sasami, or Sabilina Sayangi Bumi, is one of the flagship programs of Sabilina Islamic Kindergarten, an early childhood education institution located in Bekasi City, West Java Province, Indonesia (Figure 1 & 2). Sabilina Islamic Kindergarten has the vision to build a generation of faith, knowledge, and noble character. The Sasami program was implemented in 2013 to form the nature of children who love the environment. This program is designed, implemented, and regularly evaluated annually by Sabilina Islamic Kindergarten teachers. Teachers created the Sasami Program for environmental literacy learning in a curriculum document consisting of a Semester Program, a Weekly Lesson Plan, and a Daily Lesson Plan.

Based on Indonesian Minister of National Education Regulation Number 137 of 2014 About the 2013 Early Childhood Education Curriculum, the Standards for Child Development Achievement Levels will be achieved by core competencies, which will be further detailed through essential competencies. Competence is the knowledge, skills, and abilities controlled by a person so that they can perform cognitive, affective, and psychomotor behaviors as well as possible. Ideal learning contains three core competencies in a balanced manner: knowledge, attitudes, and skills. These three components should be included in the preparation of learning tools, whether in the form of material selection, learning approaches, learning methods, and learning assessments. This aligns with the Sasami Program, which develops environmental literacy by prioritizing attitudes toward knowledge, skills, and environmental care behavior.



Figure 1. Student brings reusable "Sabilina Sayangi Bumi Bag" to School

"As a steward of the Earth, we must always protect the environment, cleanliness, and health and invite others to participate in our efforts to protect the environment. We introduce Sabilina Islamic Kindergarten students to love the Earth through daily activities such as disposing of garbage, saving water and electricity, and caring for plants." (Teacher 4 Reflection, June 15, 2020)

"For me, the environment is the area around us that we must keep safe, relaxed, pollution-free, and healthy for life to be preserved and sustainable. We must teach early childhood to protect the environment simply and in language so that it is easy for them to understand, following the principles of early childhood learning. I usually use nearby materials to educate, read storybooks, and invite children to sing environmental theme songs. We routinely performed gymnastics along with Go Green" (Teacher 3 Reflection, June 15, 2020).

The results of this study showed that all participants had a good concept of environmental literacy, which fulfills the four components of literacy, namely: (1) environmental knowledge covering environmental basics; (2) environmental attitudes, which include views of the environment and sensitivity to the environment; (3) cognitive skills, which include identification of environmental problems, environmental analysis, and implementation of planning; and (4) behavior towards the environment, which includes concrete actions against the environment. Teachers with an excellent environmental literacy concept are good starting capital for implementing environmental literacy learning because they will carry out their role as educators, facilitators, accommodators, and assimilators.

The participating teachers demonstrated good pedagogical competence. Teachers master effective learning management by developing curricula that support environmental literacy learning, compiling learning plans, selecting appropriate materials for the child's age, conducting assessments, and paying attention to the principles of early childhood learning. The teacher uses educational media from environmental items such as trees, plants, animals, water, and humans. In addition, the teacher also created learning media by utilizing unused objects in teaching aids and educational games. The teacher also made reusable Sabilina Sayangi Bumi bags, stickers, and newsletters as promotional media to get support from parents and school partners to care for the environment.

#### Implementation of Environmental Literacy Learning

Sasami is not a subject but an integrated program of learning and habituation activities. In the Sabilina Sayangi Bumi Program, students are introduced to environmental literacy through several activities such as:

##### Sorting Trash

Garbage is a hazardous environmental problem if it is not managed correctly. Organic waste from leftover food, vegetables, fruit, and leaves will be easily broken down. Meanwhile, inorganic waste from plastic, metal, styrofoam, and so on takes a very long time to decompose, so it is at risk of causing soil pollution. In environmental literacy learning, students are taught to care about waste and sort waste by distinguishing between organic and inorganic waste. After they can recognize the differences between organic waste and inorganic waste, children are taught to dispose of garbage in the right place according to its type. Learning is done using demonstration methods, games, singing, and hands-on practice.



Figure 2. The child was sorting trash according to the type

"The teachers teach students to dispose of garbage in its place so that the children get used to living clean and always maintaining cleanliness. We always make it a habit so that when they grow up, they do not litter wherever they are. Every Friday after gymnastics, children and teachers carry out 'ant operations', namely, cleaning up trash and dry leaves scattered around the school. Sometimes, children forget to throw the garbage in the trash, but we always remind them to throw it in the place provided. It feels tiring sometimes, but it pays off when the children consistently throw garbage in its place. The children are also happy when they see that the environment is clean, so they can be more comfortable when playing with friends." (Teacher 3 Reflection, June 5, 2020)



Figure 3. Visiting Garbage Collection Point

The results of interviews and reflections show that environmental literacy learning through Waste Sorting activities is carried out through various strategies, namely: reading the storybook on the theme of waste, demonstrating and simulating waste sorting, playing to guess the type of waste, drawing organic and inorganic trash bins, collecting garbage in schools through the ant operation (activity of cleaning up trash and dry leaves scattered around the school), the daily practice of disposing of waste according to type, and visiting garbage collection point (Figure 3).

### Reuse, Reduce, and Recycle (3R)

The implementation of the 3Rs is an effort to protect the environment. Reuse is the concept of reusing items that can be used again, so they do not produce waste. Sabilina Islamic Kindergarten students are not allowed to bring disposable food and drink containers, use used paper that still has an empty side to draw and write, use paper bags and reusable work, must bring their handkerchiefs that can be rewashed, and so on.

Reduce is reducing waste and disposable materials that can damage the environment. Sabilina Islamic Kindergarten students and their parents use refillable eating and drinking containers and are not allowed to use single-use packaging because it will produce waste. Children bring a handbag daily, reduce the use of paper and plastic, and do not bring snacks in packs. School rules do not allow children and parents to bring disposable drinking and eating places, including in parent gatherings.

In the order signed by parents at the beginning of school, they must agree always to bring children's snacks without packaging and put them directly into the dining area. If children get packaged food, they are not allowed to throw out the trash at school, and the garbage must be put in a bag to take home. (Teacher 2, interview June 12, 2020)

"We require children to bring their drinking bottles from home and be able to refill them at school. We also need children to bring lunch from home, prohibit packaged food, and bring healthy supplies in the lunch box. Even during teacher training or parenting with parents, we must bring drinking bottles and lunchboxes from home, so parents and teachers take the snacks prepared by the school to be put in their respective lunch boxes." (Teacher 3, Interview, June 12, 2020)



Figure 4. Creativity making clothes from used materials

Recycling is the concept of reprocessing waste into new valuable goods or products. Children are taught to use used items to be reprocessed into learning media, crafts, recycled paper, milk boxes as plant pots, used bottles as pencil cases, milk cans as piggy banks, and so on (Figure 4).

"I am very supportive of the Sasami school program. My children at home always ask for used paper because, at school, they are used to using used forms for drawing. I never threw away milk cartons or utilised cans, but I collected them and sent them to school because they are usually used at the Arts and Creativity Center." (Parent 1 Interview, June 27, 2020)

The results of interviews and observations show that the implementation of Reuse, Reduce, and Recycle, fosters a caring attitude for children in reducing the use of goods, reusing items that can be used, and recycling items that are no longer used, as an effort to reduce waste on the earth. The teacher provides students with videos about protecting the world with reuse, ease, and recycling activities. Students can discuss and make associations with previous experiences about

the 3Rs action. One of the learning centres at the Sabilina Islamic Kindergarten, namely, the Arts and Creativity Center, is a storage area for used goods that Sabilina Islamic Kindergarten students will use. Children are accustomed to using paper, cans, cardboard, food or beverage packaging boxes, etc., as materials for making student artwork. Parents support the school program by sending unused but valuable items that can still be used for student activities.

#### Little Gardener

TK Islam Sabilina has a regular gardening program. Children as Little Gardeners are introduced to why they need gardening, gardening tools and materials, types of plants, the benefits of gardening, how to garden, and so on. Through gardening, children get to know various kinds of plants, how to plant them, how to care for them, make the garden a source of learning for other themes, and be grateful for Allah's creation.

"We teach the children how to care for plants and also practice them. The children learn how to plant seeds, water plants, apply fertilizer, and don't forget to wash their hands after doing activities. The teachers teach the importance of plants in the environment, the various benefits of vegetables for the body, and refreshing scenery. Our goal is to invite children to keep the environment fresh and beautiful as well as tell them about the benefits of plants." (Teacher 4, Reflection, June 5, 2020)

Sabilina Islamic Kindergarten does not have sufficient land for gardening. To overcome this, little gardeners were introduced to various planting media, using poly bags, pots from used goods, or hydroponics techniques. Students planted vegetables using hydroponics techniques, cared for, harvested, cooked, and sold them to their parents.



Figure 5. Planting vegetables using hydroponic techniques

Apart from growing vegetables, Sabilina Islamic Kindergarten also implements One Child One Plant(OCOP), where each child produces one plant and is responsible for caring for it. This activity involves parents in supporting the preparation of tools and materials, planting, and motivating children to take good care of their plants (Figure 5).



Figure 6. One Child, One Plant

In One Child One Plant, parents are invited to school (Figure 6). "The event is exciting! The teacher asked parents and children to Go Green gymnastics and planted plants together." (Parent 2 Interview, June 26, 2020)

The results of interviews, observations, and reflections show that Little Gardener is a fun activity for children because they look enthusiastic and excited, especially in OCOP activities that are carried out with parents. Through farming activities, little gardeners learn to know God through His creation, be patient with the planting process, be grateful when harvesting, and enjoy the processed crops planted. OCOP activities were followed up by planting and caring for plants at home with the guidance of parents, resulting in synergy between parents and the school. Teachers communicate effectively with parents in delivering school programs and goals. Parental involvement is positive support for children's education.

#### Animal Lover

The world of children is not far from animal stories. Through the Sasami Program, Sabilina Islamic Kindergarten carries out a campaign to foster love and care for animals in several ways. The first is to use storytelling techniques or storytelling using fables (stories of animal characters). Teachers or storytellers tell stories from school partners such as the World Wild Foundation (WWF). Through the stories, children are introduced to the types and characteristics of animals, where and how they live, how humans should treat them, and so on.



Figure 7. Listening to WWF's Storytellers

Apart from listening to animal stories, students also gain knowledge of animals through big games, miniature games, video shows, serial cards, and the Mini Zoo activity, allowing children to bring and present their pets at home. The teacher prepares a play environment and communicates with parents to support the smooth running of activities.



Figure 8. Sabilina Mini Zoo

Students participated in the activity actively and enthusiastically (Figure 7). The student answered questions in the interview that he felt happy following activities at school such as Little Gardeners and a Mini Zoo (Figure 8). She is also at home planting and tending crops with her mother. He can describe various types of vegetables, fruits, and animals he likes (Figure 9). He told me that at home, every day, he helped his mother sweep the leaves of the rambutan tree in the front yard of the house. The results of interviews and observations show that children gain knowledge of animals and plants and develop environmental care attitudes and skills.



Figure 9. Drawing Fruits, Vegetables, and Animals

#### Instilling the Value of Environmental Literacy

The criteria for the elements of environmental literacy, namely knowledge, cognitive abilities, attitude, and ecologically responsible behaviour, may be used to assess a person's level of environmental literacy (Behavior). Four factors may be used to assess someone's level of environmental literacy: (1). Environmental knowledge, which includes environmental basics; (2). Environmental attitudes include perceptions, sensitivity to environmental circumstances, and sentiments regarding the environment; (3) cognitive abilities, such as the ability to recognize environmental issues, analyse the environment, and carry out planning; and (4) behaviour which provides for concrete actions against the environment. Environmental literacy has three components based on environmental insight: environmental competence, environmental knowledge, and environmental attitudes. Through the Sasami Program, all school members,

namely teachers, students, parents, and employees, participate in activities designed to build school members' knowledge, attitudes, and skills to care for the environment.

Table 1. Developed Environmental Literacy Value Through Sasami Program

No	Action	Attitude	Knowledge	Skills
1.	Sorting Trash	Care for the environment Responsible for disposing of trash in its place	Know the types of waste	Dispose of trash in its place according to its type
2.	Reuse, Reduce, Recycle	Environmental care Responsible for the use of materials	Knowing the benefits of reusing, reducing, and recycle	Take advantage of used items for work Reducing the use of single-use items Reducing the use/purchase of unnecessary items
3.	Little Gardener	Environmental care Care for plants	Knowing the types of plants Knowing how to plant and cultivate plants	Planting Caring for plants Loving the plants
4.	Animal Lover	Environmental care Care for animals	Knowing the types of animals Knowing how to care for animals	Taking care of animals Loving animals

**Assessment**

Environmental literacy is divided into three levels: (1) The first level of environmental literacy involves environmental awareness; (2) The second level of environmental knowledge combines awareness and action based on knowledge; and (3) essential information and skills are deepened.

Participant teachers conducted an authentic assessment to measure early childhood students' understanding of the concepts being taught, attitudes, and skills using portfolios, observations, checklist twins, and performance. Students are said to learn when behavior changes, whereas learning is an attempt to change behavior.

Teachers stated that their children had average attention spans, low levels of disruptive conduct in the classroom, and relatively high science grades before participating in the outdoor EE program. When students were learning outside, the teachers anticipated that the treatment group would have shorter attention spans and more disruptive behaviors. Pretest responses from the students revealed a good deal of scientific effectiveness and knowledge of the essence of science. Although there were no differences in teacher reports of classroom attention and behavior when comparing the treatment and control groups, we found support for hypothesis two but not one. In contrast, teacher reports of students' attention and behavior levels when participating in the outdoor EE program were enhanced throughout the EE program to exceed classroom levels (Figure 10 & 11).

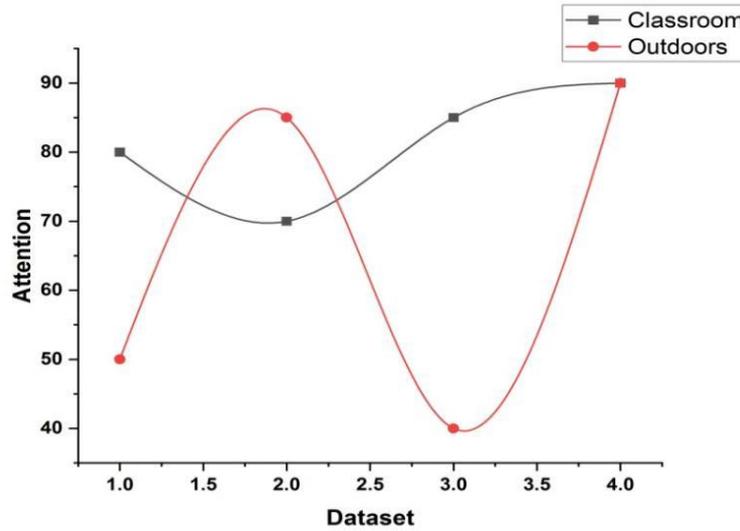


Figure 10. The treatment group's attention in both indoor and outdoor settings

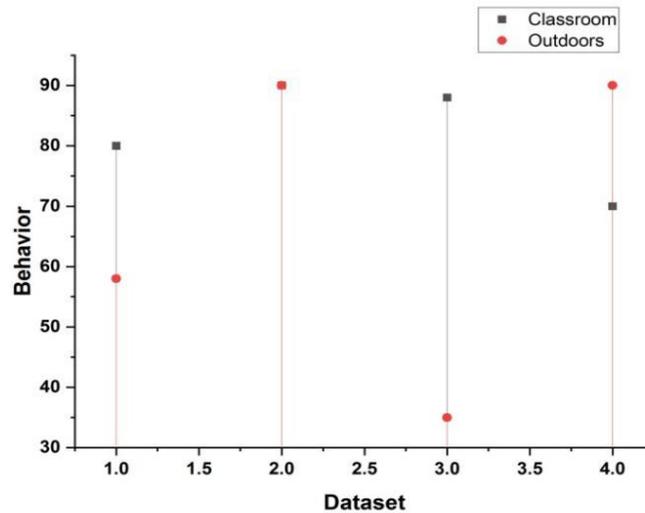


Figure 11. The treatment group behavior in both indoor and outdoor settings

The teacher ratings of classroom attention and conduct did not differ between the treatment and control groups, supporting hypothesis two but not hypothesis one. However, during the EE program, the instructor reports that students' attention and behavior levels when in the outdoor EE program increased to exceed classroom levels. However, we discovered that the outdoor EE program increased teacher reports for attention and behavior in the treatment groups (Figures 10 & 11). Although teachers anticipated relatively short attention spans and frequent disruptive behaviors outside before encountering students in the EE program, their evaluation of these measures was much more significant during the research conclusion period.

Environmental literacy is becoming increasingly important in early childhood education. Teaching children about the environment at an early age can help foster a sense of environmental care, which is essential for preserving our planet for future generations. Environmental literacy should be taught in the classroom and through hands-on activities and field trips. When teaching environmental literacy in early childhood, it is essential to focus on the basics of the environment and how it works. Children should be taught the benefits of environmental care, such as reducing pollution and waste. They should also be taught the consequences of not caring for the environment, such as climate change and species extinction. It is also important to emphasize the

importance of recycling, composting, and to reduce energy consumption. In addition to classroom instruction, field trips to local parks and nature preserves allow children to learn about the environment. Field trips can include activities such as planting trees or picking up trashes. Through these activities, children gain a deeper understanding of the natural world and develop a sense of responsibility to care for it.

### **Conclusion**

Environmental literacy learning in early childhood education requires early support from teachers with good environmental literacy concepts, namely environmental knowledge, environmental attitudes, cognitive skills, and environmental behavior. Environmental literacy learning is effective because teachers are competent in designing, implementing, and evaluating learning. The results showed that the teachers demonstrated good pedagogical competence. Teachers master effective learning management by developing curricula that support environmental literacy learning, compiling learning plans, selecting appropriate materials for the child's age stage, conducting assessments, and paying attention to the principles of early childhood learning. Implementing the Sabilina Sayangi Bumi or Sasami Program integrates learning and habituation to introduce several activities, such as little gardener, reuse, reduce, recycle, and animal lovers. All the school members followed the program. Implementing the Sabilina Sayangi Bumi or Sasami Program integrates learning and habituation activities to introduce several activities such as little gardener; reuse, reduce, and recycle; and animal lovers. All school members followed the program. This study included only a limited number of participants. Future studies will involve a larger number of participants.

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