UTILIZATION OF CHATGPT TO INCREASE THE ENVIRONMENTAL AWARENESS OF EARLY CHILDHOOD

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Abstract: The utilization of artificial intelligence is not a new thing in education. In various studies that have been conducted, the use of artificial intelligence in the learning process allows for improvements in terms of personalization, student interaction, and the role of the teacher as a facilitator. The purpose of this study is to explore the utilization of one of the artificial intelligence applications, namely ChatGPT, as a learning media at the early childhood education level, to increase students' awareness of the environment. The research subjects consisted of 20 kindergarten students aged 5-6 years at TK Pelita Insan Madani. The results of the study showed that students' understanding and concern for environmental issues increased significantly after using ChatGPT as a learning media. The conclusion of this study is that the use of ChatGPT as a learning media with environmental themes can increase students' understanding and concern for the environment. The researcher's suggestion is that teachers be given more intensive training related to the use of artificial intelligence, and recommendations for further research to be explored more deeply related to the psychological impact for students and the issue of privacy or data security of artificial intelligence users.

Keywords: *artificial intelligence; early childhood; environmental awareness*

INTRODUCTION

Character education is an integral part of learning at all levels of education, including early childhood education. "Through the school environment, students' character personalities can be developed and shaped" (Nurfianto, Handayani, Aini, & Damariswara, 2022). Early childhood is in a phase where the brain is developing very rapidly. This is the right time to introduce and instill good things in children, especially through character education programs at school. "By providing good character education, we can minimize various social problems that may arise in the future"(Putri & Prahesti, 2025). The importance of character education is also expressed by Zahroh (2021), "Character education teaches habits of mind and behavior that help individuals to live and work together as families, communities, and nations and helps them to make responsible decisions."

The character of caring for the environment is one of the important characters to be

possessed by children. "The cause of various disturbances that occur on planet earth stems from the basic character of humans as biological imperialists where they need food and reproduce, without caring about the limitations of natural resources in providing the needs of life for themselves and for their offspring" (Adawiyah, 2022). That is why the environment has become one of the main focuses in the sustainable development goals promoted by the United Nations and agreed upon by many countries in the world. Environmental issues are starting to become a hot topic that continues to be of concern around the world.

In Indonesia, environmental problems are still very difficult to solve. Based on data from the Ministry of Environment and Forestry of the Republic of Indonesia, Indonesia produces up to 33,862,663.05 tons of waste per year, and if averaged, the daily waste reaches 92,774.42 tons (KLHK, 2024). These problems are just one of the many environmental problems facing Indonesia. That is why environmental education is needed to improve the character of environmental awareness, especially from an early age. "One of the main objectives of environmental education is to form a strong environmental awareness among students" (Rahayu, Suwarna, Wahyudi, Asfahani, & Jamin, 2024). This is because at that age, the cognitive development stage of children allows them to begin to understand basic concepts about the environment and the importance of preserving it, and all the knowledge they gain will be firmly entrenched and become a character that takes root until adulthood. "Early childhood is the initial foundation for development in all aspects" (Septianingrum, Sholiha, Sholihah, & Melly Elvira, 2024).

However, conventional approaches to environmental education often lack appeal for children, so innovative methods are needed that can increase their interest and understanding. "The use of technology at an early age helps children build an early understanding of digital devices, preparing them for the demands of an increasingly digital world" (Daulay & Daulay, 2025). So far, the use of digital media as learning media is generally limited to audio, video, and posters or photos. Meanwhile, in the digital era like today there are more digital media options that can be an alternative learning media for teachers at all levels of education, including artificial intelligence (AI). Artificial intelligence itself has been widely used in other fields, and is currently being utilized in the field of education. "One of the other advantages of applying AI in education is its ability to provide real-time feedback to students and teachers"(Fauziddin & Ningrum, 2024). With real-time feedback, teachers are more likely to be able to immediately identify difficulties that children may experience in the learning process, so that they can then immediately adjust the learning approach used.

ChatGPT as one of the AI language models, has shown potential in supporting interactive learning processes and personalization of teaching materials. "Chatbots are only as good as the information they are programmed with, and their feedback may only sometimes be accurate or appropriate" (Baskara, 2023). The use of ChatGPT in early childhood education can be an alternative to deliver environmental materials in a more interesting and developmentally appropriate way. Several studies have shown that the integration of technology in learning can increase student engagement and understanding. "AI can be used to create a more fun .and interactive learning experience for children. AI-based educational apps and games are designed to stimulate children's interest and curiosity, making learning a fun activity" (Anwar, Nurul, 2024).

Most existing studies focus more on primary or secondary education, as well as on

general learning aspects without highlighting environmental topics specifically. Therefore, more in-depth research is needed to explore the potential of ChatGPT in this context. The purpose of this study is to evaluate the effectiveness of using ChatGPT in increasing kindergarten students' awareness of the environment. This research aims to develop innovative and engaging learning approaches for children, as well as contribute to the literature on technology integration in environmental education at an early age.

METHOD

This research uses the Classroom Action Research method using 2 cycles (Cycle I and II). Each cycle consists of 4 stages, namely planning, action, evaluation, and reflection. The research subjects were class B students of Pelita Insan Madani Kindergarten, totaling 20 people. Data collection used observation guideline instruments to collect data on the improvement of students' caring character towards the environment. The data were then analyzed descriptively to determine the effect of ChatGPT artificial intelligence learning media on students' environmentally awareness. The stages of classroom action research proposed by Kurt Lewin consist of four steps, namely planning, action, observation, and reflection (Machali, 2022). As illustrated below:

Figure 1. Action Research Steps

This research was conducted in accordance with the stages of class action research, namely the first stage is planning. In the planning stage, the researcher determines the stages of action that will be carried out later. Second, the action stage. In the action stage, researchers carry out two activities, namely preparing the facilities needed for action and carrying out the action with the steps according to what has been determined in the planning. Third, observation. Observation is carried out simultaneously with the action. During the action, the researcher also made observations using the observation sheet guidelines. Fourth, reflection. At the reflection stage, the researcher assesses or processes the observation data obtained from the observation guidelines. Based on the results of the assessment, the researcher made an action plan for the next cycle.

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RESULT AND DISCUSSION

This research was conducted at TK Pelita Insan Madani in April 2025. The purpose of this study was to determine the effect of the utilization of ChatGPT on the character of students' environmental care. The research was conducted with 2 cycles of classroom action research. The stages of each cycle were carried out as follows:

First, planning. At this stage, the researcher drafts the stages of action to be taken including: what actions will be taken, why these actions need to be taken, when they will be taken and how they will be technically implemented. The plan was written in detail and made in a lesson plan format.

Second, action. At this stage, researchers prepared all the facilities needed in the implementation of the action, including laptops, LCD projectors, speakers, and internet connections. Then carry out the action in accordance with the planning that has been made in detail. When starting the lesson, the teacher explained the learning objectives and activities to be carried out. After the students were conducive enough to do the learning, the teacher started to operate ChatGPT through the laptop. Previously, the teacher has given a prompt to ChatGPT so that ChatGPT becomes the children's learning friend with a character named Kak Gupi. Then, in the chatbox, the teacher typed a greeting to Kak Gupi, and asked Kak Gupi to greet the children. The teacher asks Kak Gupi to explain the first material to be learned, which is about disposing of garbage and sorting garbage. The teacher also asked Kak Gupi to make a guessing game and a fairy tale for the children to listen to. The children are asked to ask whatever they want to ask, the teacher will type the question in the chatbox column to be answered by Kak Gupi. The practice of sorting waste is also instructed by Kak Gupi with prompts that have been adjusted by the teacher. Third, observation. Observation was carried out during the action. Researchers used an observation sheet as a guide to make observations and provide an assessment of the effectiveness of the use of ChatGPT media in learning environmental awareness character education.

Figure 2. Learning Preparation with ChatGPT

Fourth, reflection. In the reflection stage, activities include analyzing, synthesizing, and assessing the results of observations of the actions taken. Because during the reflection process shortcomings were still found, an assessment was carried out to become

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the basis for corrective action through the next cycle.

The next cycle was conducted with the same stages as the first cycle. However, with different materials, namely waste management. The learning technique was also the same, students interacted with ChatGPT and then practiced. The difference is, if previously the practice was waste sorting, then in the second cycle, the practice was waste management with instructions given by ChatGPT.

Figure 3. Waste Management Activity

After the first cycle and the second cycle, researchers obtained the following results. The observation data of students' environmental care character in cycle I is presented in Table 1 as follows:

Table 1. Observation Results of Students Environmental Awareness in Cycle I

Data	Score	%
Min	24	60
Max	30	75
Average	27,45	68,63

Based on Table 1, it is known that the average environmental awareness character of students in cycle I through data collection in the form of observation is at a good level. The average score of the environmental awareness character shown was 27.45 or 68.63%. The minimum value obtained was 60% and the maximum value was 75%. This shows that none of the respondents have reached the maximum score in cycle I. The following data on students' environmental awareness character in cycle II is presented in table 2:

Tabel 2. Observation Results of Students' Environmental Awareness in Cycle II

Data	Score	%
Min	25	62,5
Max	35	87,5
Average	31,15	77,88

Based on the results of cycle II, it can be seen that 20 students experienced an increase in scores with an average of 77.88%, from the previous 68.63%. This value shows an increase in the character of environmental awareness in each student in cycle II. Thus, ChatGPT media can be said to be able to significantly improve the character of environmental care. The average comparison between cycles is presented in Figure 2 below.
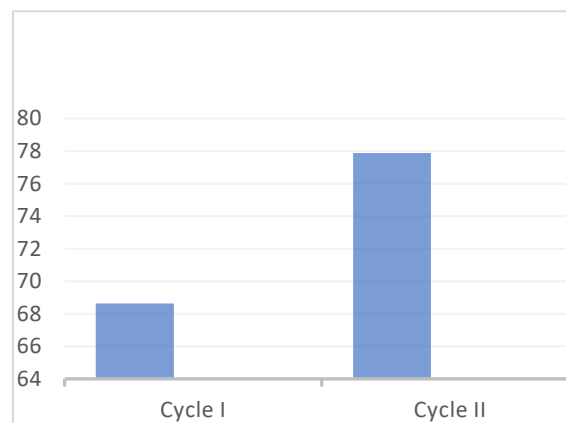

Figure 4. Average Comparison Diagram Between Cycle I and Cycle II

Cycle I was carried out for 1 meeting by applying ChatGPT media to the material of disposing and sorting the types of waste. In cycle I, direct observation was carried out by the class teacher, to find out whether the material taught was in accordance with the substance of environmental awareness, and learning activities had fulfilled the stages in the application of ChatGPT media properly. Researchers provided instruments in the form of observation guidelines to measure the character of environmental awarerness through learning by using ChatGPT media at the beginning and end of learning. Based on the results presented, cycle I has begun to show success because the average score is classified as good. Based on the results of reflection, several obstacles were found, namely students were not familiar with ChatGPT media and did not understand how to interact with the characters created in ChatGPT media.

As a follow-up effort, cycle II applied ChatGPT media on environmental awareness material that was different from cycle I. In the planning stage, researchers made lesson plans with improvements based on reflections from cycle I. In the action stage, it was carried out in accordance with the lesson plan that had been prepared previously based on the results of the first cycle reflection. At this stage, some things that were improved were student assistance with the use of ChatGPT media, emphasis on more specific instructions on ChatGPT media in order to produce answers as expected, and encouragement to conduct discussions with students. In the evaluation stage, researchers used the same instrument as cycle I. Based on the results of Classroom Action Research (PTK) conducted by applying ChatGPT media on environmental care material can significantly improve students' environmental awareness. This can be seen from the

increase in average scores in cycles I and II. In cycle I, the average character of students' environmental care was 68.63% and cycle II was 77.88%.

In the reflection stage, in addition to assessing through the observation guidelines, the researcher also made some notes related to children's interest and involvement during the learning process. In the first cycle, when first introduced to Kak Gupi, students still seemed confused with ChatGPT technology that they had just encountered for the first time. Children seemed hesitant when asked to ask or answer questions from ChatGPT, so the assessment results in the first cycle were not optimal. In the next cycle, with the same technique and different materials, students' interest in ChatGPT learning media used by teachers began to build because they began to get used to interacting with chatbots through the text to audio feature. As student interest is high, student engagement in learning is also high. "AI-based chatbots or virtual assistants can interact with children through conversation, helping them learn new languages or concepts in a more natural and intuitive way" (Anwar, Nurul, 2024). During learning, students enthusiastically interacted with ChatGPT, they asked and also answered ChatGPT questions through the text to audio feature. When ChatGPT guided students to practice plastic waste management in accordance with the learning material, students also carried out practical activities enthusiastically accompanied by the teacher. This is why, later in the second cycle, students' average scores increased.

CONCLUSION

The application of ChatGPT media in environmental awareness character education in Class B of TK Pelita Insan Madani is declared effective in improving environmental awareness character. This is indicated by the change in the average score between cycle I and cycle II, namely 27,45 in cycle 1 and 31,15 in cycle II. This can be mean that ChatGPT media with environmental awareness character education material has a significant effect on the process of environmental awareness character education in Class B TK Pelita Insan Madani. Henceforth, the utilization of this media can be developed with a wider range of materials, not only on environmental care materials. The teacher should be given more intensive training related to the use of artificial intelligence, and recommendations for further research to be explored more deeply related to the psychological impact for students and the issue of privacy or data security of artificial intelligence users.

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