

Improving Student Awareness on Environmental Health Importance Through Social Learning Model

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Abstrak

Kesehatan lingkungan merupakan aspek penting yang mengarah pada kestabilan ekosistem, dalam upaya untuk mencapai kestabilan ekosistem, kesehatan lingkungan dapat ditingkatkan dengan meningkatkan kesadaran masyarakat akan pentingnya kesehatan lingkungan. Pendidikan sebagai fondasi fundamental distribusi pengetahuan dapat dimaksimalkan dengan menggunakan metode yang tepat. Penelitian ini bertujuan untuk menganalisis strategi pembelajaran yang tepat untuk meningkatkan kesadaran akan pentingnya kesehatan lingkungan. Menggunakan metode kualitatif, dan pendekatan systematic literature review, didapatkan sebanyak 24 artikel relevan yang digunakan untuk merumuskan hasil penelitian dengan menggunakan metode berpikir deduktif. Hasil penelitian ini menonjolkan social learning model sebagai metode yang tepat untuk diterapkan dalam meningkatkan kesadaran siswa akan pentingnya kesehatan lingkungan. Sedangkan sebagai sebuah hasil dari konsistensi dalam menjaga kesehatan lingkungan adalah peningkatan kualitas kesehatan lingkungan, dan peningkatan kualitas kehidupan secara umum. Apabila memandang dampak pendidikan kesehatan secara spesifik, selain meningkatkan pengetahuan masyarakat akan pentingnya pendidikan kesehatan, peningkatan keterampilan praktis, dan pemberdayaan masyarakat, serta keterlibatan masyarakat menjadi sebuah hasil yang dapat mendorong peran aktif masyarakat dalam menjaga kelestarian, kesehatan, serta keberlanjutan masyarakat di masa sekarang dan masa yang akan datang.

Kata Kunci: Lingkungan, Kesadaran, Kesehatan, Pembangunan, Pendidikan Kesehatan

Abstract

Environmental health is an important aspect that leads to ecosystem stability. To achieve ecosystem stability, environmental health can be improved by increasing public awareness of the importance of environmental health. Education as a fundamental foundation for distributing knowledge can be maximized using the correct method. This study aims to analyze the right learning strategy to increase awareness of the importance of environmental health. Using qualitative methods and a systematic literature review approach, 24 relevant articles were obtained, which were used to formulate Research results using deductive thinking methods. The results of this study highlight the social learning model as the proper method to be applied in increasing student awareness of the importance of environmental health. As a result of consistency in maintaining environmental health, there is an increase in the quality of environmental health and the quality of life in general. If we look at the impact of health education specifically, in addition to increasing public knowledge of the importance of health education, increasing practical skills, and community empowerment, as well as community involvement are results that can encourage the active role of the community in maintaining sustainability, health, and sustainability of society in the present and the future

Keywords: Awareness, Development, Environment, Environmental Education, Health

INTRODUCTION

Global warming is a problem that has a significant impact on the environment; the increase in the average temperature of the earth's atmosphere that we know is primarily caused by human activities that often lead to economic activities, such as industrial activities, agriculture, and deforestation caused by the exploitation of natural resources (Cruz & Rossi-Hansberg, 2024). The cycle in the production process is not one of the causes of global warming and environmental pollution, starting from excessive extraction of raw materials to the

disposal of hazardous production waste, becoming the basis for environmental pollution and global warming (Chimienti et al., 2021). The impacts that can be caused by environmental pollution and global warming are extreme climate change, rising sea levels, ecosystem disruption that can cause extinction, and food and water crises. The obligation to protect the environment is an important thing for the sustainability of generations; environmental destruction that is done consciously or not will impact the next generation (Mella, 2022).

Efforts to increase awareness of the importance of environmental health should be implemented evenly, but this effort can be initiated through students; education plays an important role in increasing awareness of the importance of protecting the environment. Through education, teachers can provide an understanding of the relationship between their actions as individuals and their impact on the environment and how they can build attitudes and behaviours that can contribute to sustainable development (Nuraini et al., 2022). The importance of knowledge related to environmental health is a fundamental aspect in producing a generation that cares about the future, not only related to how to maintain the resources they have but also how the knowledge they have related to environmental awareness becomes a foundation for building ideas, creativity, and sustainable innovations that lead to sustainable development (Ferrer et al., 2022).

Illustrating the role of education starts with how education can provide basic knowledge about environmental issues, such as climate change, causes of pollution, and the increasing loss of biodiversity. After learning about the environment, students will be encouraged or motivated to analyze and think critically about environmental issues (George et al., 2024). The deepening of information obtained from critical thinking and in-depth analysis of students will build a sense of responsibility and ownership of the environment. Education is critical but also very easy to obtain in the digital era; with the increasing availability of various digital platforms, access to information and knowledge about the importance of environmental awareness becomes more manageable to distribute (Wekerle et al., 2022). In addition, education related to the importance of environmental awareness becomes more effective if there is collaboration with the community and organizations that bring in environmental experts and activists (Khushk et al., 2022).

Regardless of the importance of education related to environmental awareness, education and learning models must be interactive, active, innovative, and even practical. Teachers must channel their knowledge interestingly, influence students to build positive attitudes, and even implement what they have learned (Li et al., 2023). Many learning models, including the Social Learning Model (SLM), lead to material implementation. The social learning model is defined as an approach used in the learning process through the process of observation, imitation, and interaction with the social environment; it is emphasized in this model that the learning process can only be maximized through experience that is equipped with the process of observation of social phenomena (Resch & Schritteser, 2023).

Empirically, several examples can be aligned with this Research; in the study by (Ramírez et al., 2019), it is explained that conceptually in line with environmental health literacy (EHL), it emphasizes the importance of knowledge about the environment in building public awareness to protect the environment. As a form of elaboration of this theory, the knowledge gained by the community can even be directed at the process of community empowerment in preparation for environmental threats in the future. Meanwhile, study by (Shah et al., 2021) explains that a better understanding of the environment will motivate individuals to act more responsibly towards the environment. Individual choice of technology encourages the

dissemination of the information in question; this illustrates the importance of the presence of technology as a means of education and information to support sustainable development. In addition to EHL, another theory considered in line with environmental awareness is the Theory of Planned Behavior; based on this theory, a person's actions are described as motivations that arise from intentions and form structured plans to achieve a goal. It is explained that the more knowledge a person has about environmental health, the more they will be motivated to realize it, one of which is done by buying environmentally friendly products (Bauerné Gáthy et al., 2022).

Environmental health awareness is essential, but to maximize efforts to increase this awareness, a media for distributing knowledge is needed, as well as effective methods to ensure that the knowledge to be shared can be appropriately conveyed. As applied knowledge, the learning method should be directed at a method that can provide understanding and experience. The Social Learning Model (SLM) is considered one of the appropriate methods to use in this context, explained in the study by (Chuang, 2021) that there are several conditions where SLM is most appropriate to use, namely, an interactive and complete learning environment, a practical learning environment can also support the implementation of SLM. In addition, facilities and infrastructure, such as the availability of technology and student diversity, are also conditions where SLM is practical. The capabilities of SLM make it very appropriate for use in distributing applied knowledge for several reasons, such as a learning model that is structured causally, based on experience, and can build inferential intelligence and the ability to adapt (Vélez & Gweon, 2021). Thus, SLM is considered the most appropriate learning method to be used in environmental learning, especially those that lead to learning about the importance of environmental health; this knowledge is directed at building students' character and concern for an object, according to the SLM model, this learning will lead students to the process of observation, imitation, and implementation (Astuti et al., 2022). Through these three processes, students will build awareness of the environment and begin to plan appropriate actions that can be implemented to maintain environmental health.

Based on the reflection built by theoretical concepts and theoretical reviews related to environmental health phenomena, it is known that environmental health education is a fundamental aspect of maintaining the ecosystem. However, to maximize this effort, knowledge about environmental health must be distributed effectively; education is one of the most appropriate approaches in this context. This study will illustrate the conceptualization of education using the Social Learning Model (SLM) method to teach environmental health material to make students aware and alert to the environment. Effective environmental health education is essential to preserve the environment, maintain the sustainability of generations, and contribute directly to sustainable development.

RESEARCH METHOD

This Research was conducted using a qualitative method with the Systematic Literature Review (SLR) approach or a Research method that applies systematic data collection from various relevant studies that align with this study's theme and leading discussion (Abdussamad, 2021). In this study, an analysis was first carried out on the main problems studied in this case, namely the importance of environmental health awareness and the right approach to increase this awareness. After that, a search will be carried out to collect scientific articles, Research and reviews relevant to this Research's theme. After completing the collection of articles, these articles are selected and sorted according to their relevance to the discussion in this study. To

illustrate the Research process and data collection in the study, the flow of this Research is described as follows.

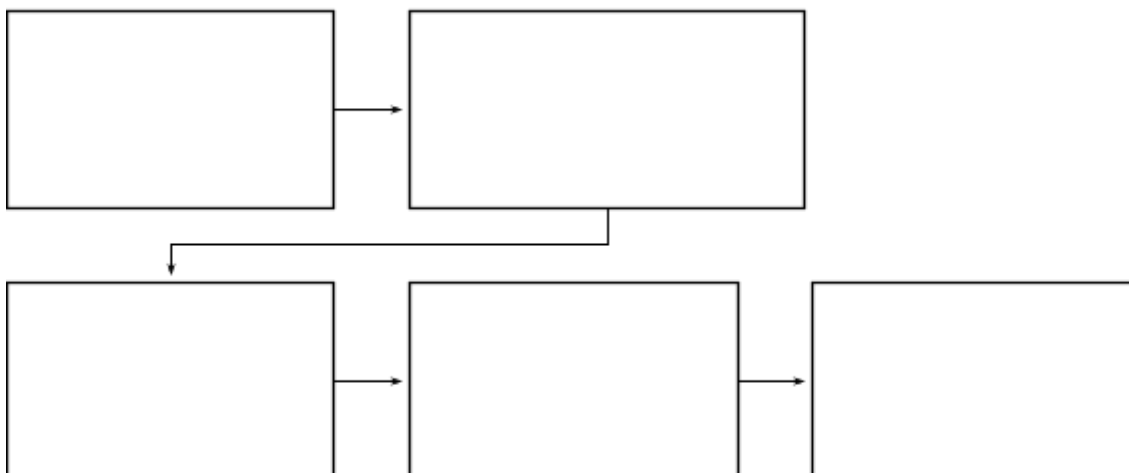


Figure 1. Research Flow Chart

Based on Figure 1, the data collection process in this study obtained 1,024 articles from searches on Google Scholar and Semantic Scholar through several forms of filtration as follows: (1) Articles published in the last 5 years between 2021-2025; (2) Articles through Peer-Review; and (3) Articles discussing SLM and Environmental Health. Based on the steps taken in selecting articles to be used in formulating Research results, 24 articles were considered the most appropriate and relevant to the topic of discussion. These results were obtained through filtration of 34 articles that were initially considered suitable, but it was found that six articles did not go through peer-review, and four others did not have DOI. Thus, 24 articles were obtained for use in this study.

RESULT AND DISCUSSION

The results of this study found that health education is one of the important aspects that influence sustainable development. To achieve goals that improve environmental health, individuals need to be well aware of the importance of the environment, especially considering that environmental health will provide a better life for the next generation. This study explains how the form of knowledge distribution implemented in schools can be maximized using the SLM approach; the conceptualization of this learning method is considered to provide effective results in increasing student awareness of environmental health.

Conceptualizing Social Learning Model on Environmental Health Literacy

The Social Learning Model (SLM) is a form of development of the Social Cognitive Learning Theory; in this theory, it is explained that human behaviour is the most important aspect that allows them to learn. This theory indicates that a person has an important role in their self-development, explaining how their experience can be the best teacher in certain conditions. In addition, this model has a composition of interrelated factors such as behaviour and interpersonal factors that shape a person's behaviour and the behaviour of their learning outcomes (Whitman et al., 2021). This learning process involves elements of experience to provide effective learning outcomes; in general, the learning process requires real interaction, but with the development of technology, the presence of digital platforms is one of the advantages that can maximize the frequency of student learning. According to Bandura, the

three main factors for implementing SLM properly are individuals, behaviour, and the environment. Technology can display images, videos, and digital illustrations that display individual behaviour, so SLM is considered to be able to be implemented using a digital platform with the same results if implemented directly (Schneider et al., 2022).

This learning model has the ultimate goal of building good character through observation, implementation, and practice activities; the form of learning outcomes built from SLM will be embedded in a person for a long time; this is because these learning outcomes are obtained through experience. The study by (Hariandi et al., 2023) explains that students' bad habits are a lack of concern for the environment. The teacher's efforts to change this attitude are by implementing a habit-based learning model through examples, routine habits, spontaneous habits, and building role models, as well as increasing awareness of environmental health, successfully increasing students' concern and awareness of environmental health. Meanwhile, the study by (Naziyah et al., 2021) explains that to maximize experience-based learning or SLM in schools, the active role of parents is needed to continue learning activities naturally at home. If teachers and parents can provide lessons about the importance of environmental health through accurate illustrations, it is believed that this will be able to build student habits and awareness of the importance of environmental health, directly encouraging them to be more responsible for the environment.

The conceptualization created by Social Learning Theory is how an individual can learn through observation activities and directly practice the behaviour that has been observed. Research by (Cantero-Sánchez et al., 2021) tested the effectiveness of this theory through training; the results obtained led to the success of the Research object in building skills, which in this study led to health and awareness of the importance of environmental health. As a learning concept that requires social interaction, applying this method is often considered more effective if there is direct social interaction in the field or Research location. The SLM method can be applied even through a digital platform. Digital learning platforms can realize social interactions that even go beyond direct social interactions; this is because digital learning platforms can connect various individuals from various locations to interact on one platform (Chou et al., 2024).

Maximizing both platforms by implementing the SLM learning model will make education related to environmental health stick to students and build good character. This character will encourage students to build habits in maintaining environmental health; habits are an important factor because habits will not only motivate someone to maintain environmental health, but good habits directly build students' awareness of the importance of environmental health, thereby creating a sustainable environmental care attitude (Ismail, 2021). However, in the end, to maintain these good habits, the family environment also has an important role; with positive communication and interaction from the family, it is assessed that an individual will have an environmentally friendly attitude or awareness of the importance of sustainable environmental health (Unde et al., 2020).

The learning model that specifically leads to awareness of the importance of environmental health implemented using SLM is successful if the teacher can provide good examples to students using learning media and exemplary behaviour. The social interaction described by the SLM model is not limited to social interaction with the surrounding environment; with the development of technology, the scope of social interaction has also expanded. Various phenomena that show the negative impact of human actions on the environment can encourage individuals to care more about the environment. Motivation built

from direct and online observations has a sustainable impact in accustoming individuals, especially students, to play an active role in sustainable development to jointly maintain environmental health for the current generation and future generations.

Environmental Health Awareness Potential Outcomes

Environmental health is important; besides being a source of life, the environment provides various human needs, both from land and sea and even invisible ones such as air. Excellent environmental health will bring many benefits to the surrounding population. The benefits that can be obtained at least improve the mental and physical health of individuals in the area and reduce the risk of spreading infectious diseases. In addition, good environmental health is also an indicator that highlights the sound quality and access to health services in the area (Meltzer et al., 2020). Starting from healthy environmental conditions, other potential benefits that can be obtained will affect various aspects of an area, especially in improving the quality of life and public health. Other positive impacts can lead to reduced pollution exposure, increased resilience and adaptability to climate change, and better food production. These are also some of the many benefits of a healthy environment (Majeed & Ozturk, 2020). Seeing the potential positive impacts of a healthy environment, increasing concern for the environment is certainly not challenging, especially considering the potential impacts of a healthy environment.

Many factors influence environmental health; some factors that can cause poor environmental health are air pollution, water, and other destruction that led to ecosystem instability. Many efforts can be made to improve environmental health, and increasing awareness and education is one of the easiest ways to go; environmental education will encourage increased awareness of the importance of environmental health. In addition, collaboration and public participation can also be a solution to improving environmental health. Collective encouragement given by many people and space to work together and remind each other are considered effective forms of collaboration and public participation (Omri et al., 2023). Continuing the importance of environmental health awareness, a person will have active participation in the community and a sense of responsibility for their environment. After high awareness, a person will build and get used to a sustainable lifestyle (Jain et al., 2024). However, the awareness of individuals in an area must generally be supported by various policies and the government's active role in supporting the common goal of preserving the environment. There are many things that the government can do, such as building green spaces and facilities that serve to remind people always to keep the environment clean.

Efforts to achieve a healthy environment are carried out through various activity designs that contribute directly to the environment and align with sustainable development. Several countries have implemented production processes such as green economy and circular economy. This activity is carried out using technology that is considered to have minimal waste, reduce pollution intensity, and encourage an ecological balance of the environment (Sun et al., 2024). In addition to contributing to sustainable development and improving the quality of environmental health achieved by implementing sustainable production methods, other positive impacts lead to quality of life with reduced gas emissions and improved air quality; in addition, energy security can also be an output of community consistency to maintain environmental health (Jaiswal et al., 2022). All of these aspects lead to improving the quality of life and the environment sustainably; all of these benefits will not only be obtained by the current generation but also by the next generation; consistency and good awareness of environmental health illustrate that humans have an obligation to the environment, while also showing how individuals should not be selfish and consider each other's sustainability of life in the future.

Considering all the potential impacts that can be obtained by maintaining environmental health, awareness of having a sense of responsibility for the environment should not be limited to the benefits obtained but rather as a natural awareness that is inherent as a habit. Concern for the environment is essential; besides the environment and ecosystems that can affect human activities, the impacts that will be given will undoubtedly be detrimental to many parties if the environment is not adequately maintained (Orimoloye & Ololade, 2021). Adverse impacts such as natural disasters, environmental pollution, and ecosystem damage are impacts that humans must be prepared to face if they do not prioritize their environment. A person's principle of maintaining environmental health encourages someone to think as a community or not be selfish because environmental damage caused by an area can significantly impact other areas more than the area itself (Baccarelli et al., 2023). By maintaining environmental health, the impact created by a person is not only on himself but also on many people, especially in improving the quality of life.

Reflecting on some of the Research results above, it is known that the positive impacts obtained by maintaining environmental health are not solely directed at sustainable development goals but also the individual himself. A healthy environment will reduce and slow the spread of infectious diseases and make residents in the environment more immune to disease. In addition, a responsible attitude towards the environment is also a fair attitude towards the environment and the surrounding environment, as the surrounding environment has the potential to receive negative impacts due to poor ecosystems in an area. As the end product of awareness of the importance of environmental health, a person will have a more accommodating attitude, not be selfish, and be able to consider the interests of others rather than their interests.

Education Effectiveness on Environmental Health Literacy Improvement

Education is an important step in building habits that have been discussed in the previous section; the function of education is not only to provide knowledge but also to be a foundation for forming awareness in a person; awareness in the context of this study refers to awareness of the importance of environmental health. Starting from this awareness, a person will start positive habits that can contribute to implementing their knowledge. Education is fundamentally part of this final result; here is a description of the effectiveness of education in improving environmental health literacy.

Table 1. Empirical Research on Health Education Effectiveness

Researcher	Title	Impact
(Ahmet Miraç & Fatoş, 2024)	The Effect of Environmental Health Education on Microplastic Pollution Awareness	<ul style="list-style-type: none"> - Raise Awareness - Improve Individual Behavior - Developing Healthy Lifestyles
(Oosthuizen et al., 2024)	An Innovative and Meaningful Scaffolded Curriculum Approach to Environmental Health Education in Western Australia	<ul style="list-style-type: none"> - Develop Work-Ready Skill - Improve Community Health - Career Framework For Students
(Zaveri et al., 2024)	Evaluating Health Education Program in Addressing Environmental Health Risk	<ul style="list-style-type: none"> - Improve Knowledge on Environmental Health - Behavioral Transformation - Community Empowerment - Continuous Health-Caring Behavior

Researcher	Title	Impact
(Hutapea & Hutapea, 2024)	Improving Community Competence in Environmental Health Management: A Health Education Literacy Review	<ul style="list-style-type: none"> - Improve Community Awareness - Improve Community Engagement - Increase Community Capability - Developing Practical Knowledge on Environmental Health
(Maipas et al., 2021)	Environmental Health Education: From Museum Specimens and Math Word Problems to Virtual and Augmented Reality	<ul style="list-style-type: none"> - Increased Public Awareness on Environmental Health - Form Better Behavior - Community Engagement - Innovative Learning Model and Outcomes
(Inayati & Hijriyati, 2025)	Community Empowerment in Environmental Health Education, OHS and Balanced Nutrition in Rural Areas	<ul style="list-style-type: none"> - Improve Environmental Health Awareness - Form Positive Behavior Toward Environment - Community Empowerment - Increase Quality of Life
(McCullagh et al., 2022)	Integrating Interprofessional Collaborative Practice Into Occupational and Environmental Health and Safety Education	<ul style="list-style-type: none"> - Formulate Policy Framework - Increase Environmental Health Knowledge - Improve Community Overall Health
(Damayani et al., 2020)	The Early Education of Environmental Health Literation as The Effort of Developing Rural Tourism	<ul style="list-style-type: none"> - Develop Awareness - Wholesome Inhouse and Inschool Eduaction Format - Community Development

Source: Empirical Research (2025)

Based on the results described in Table 1, there are many similarities between one study and another; these results provide several conclusions that the effectiveness and function of education related to environmental health led to several positive things, such as increased knowledge, awareness, the creation of environmentally conscious behaviour, and positive impacts on local institutions or communities. Specifically in the field of education itself, the importance of health education leads to creating a policy framework and a sustainable learning model with the cooperation of parents as educators when students are at home. These results indicate that environmental health education encourages a responsible attitude towards the environment, which builds good behaviour and habits that lead to a strong desire to maintain environmental sustainability and health.

CONCLUSION

The results of this study indicate that environmental health is essential to maintaining the sustainability of human life, both now and in the future. Efforts to improve environmental health begin with individual attitudes, which is an awareness of the importance of environmental health. By implementing the SLM method, schools, as a foundation for the distribution of

knowledge, can channel knowledge of the importance of environmental health through education. A person will have sufficient knowledge to create awareness within themselves, which becomes an important factor in creating habits that will continuously make someone care about the environment and avoid various behaviours that can cause environmental damage. The effectiveness of education on environmental health education also leads to community empowerment, improving the quality of life, and formulating educational formats and policies that can support environmental sustainability and sustainable development.

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