

Research Article

The Role of Islamic Education in Promoting Environmental Awareness and Sustainable Economic Behavior Among Youth

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Abstract: This study investigates the impact of Islamic education on promoting environmental awareness and sustainable economic behavior among youth. As environmental issues continue to pose significant global challenges, fostering eco-conscious behavior among the younger generation is essential for ensuring long-term sustainability. Islamic education, with its emphasis on ethical responsibility, stewardship, and accountability as outlined in the Quran and Hadith, provides a unique framework for shaping pro-environmental attitudes and behaviors. This experimental study compares two groups of students: the treatment group exposed to green-Islamic content and the control group receiving general civic education. The research measures students' environmental awareness, knowledge of sustainability, and behavior before and after the intervention, using pre-test and post-test questionnaires, as well as qualitative interviews. The results indicate that the treatment group exhibited a significantly greater improvement in environmental awareness and sustainable behavior compared to the control group. These findings suggest that Islamic education, by integrating religious and ethical principles into environmental education, can effectively encourage sustainable behaviors such as resource conservation, waste management, and ethical consumption. The study highlights the importance of incorporating Islamic values into educational curricula as a means to foster a more environmentally responsible generation. Additionally, the research emphasizes the need for further studies to explore the long-term effects of eco-conscious Islamic education across different cultural and educational contexts. The results of this study contribute to the growing body of knowledge on the role of religious education in addressing global environmental challenges and promoting sustainable development.

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1. Introduction

Youth education plays a critical role in shaping long-term sustainability values, as the younger generations are key players in fostering a sustainable future. Effective educational methods, such as experiential and challenge-based learning, are essential for integrating sustainability principles into all levels of education (Krosinsky & Cort, 2018; Pažėraitė & Kunskaja, 2023). Engagement of youth in environmental conservation and social change initiatives contributes significantly to sustainable value creation, highlighting the importance of both formal and informal educational approaches (Borojević et al., 2023). As such, promoting eco-conscious behavior at an early age can lay the foundation for responsible stewardship of the environment.

The world is currently grappling with numerous environmental challenges, including climate change, deforestation, ocean acidification, pollution, and freshwater shortages. These pressing issues necessitate innovative thinking and sustainable economic behavior to ensure both environmental and economic well-being in the long run (Kryvokhyzha et al., 2023). The



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unsustainable patterns of consumption and production only exacerbate environmental problems, emphasizing the need for responsible consumption and production behaviors to achieve sustainable development (Dwarapureddi et al., 2021; Guinot, 2020). Therefore, it is critical to integrate sustainable practices into everyday behavior and economic activities to mitigate the negative impact on the planet.

Islamic education provides a promising framework for promoting environmental consciousness among youth. Integrating Islamic values with environmental education has been shown to positively impact students' environmental awareness and character development (Begum et al., 2021; Lutfauziah et al., 2024). Islamic teachings, particularly those found in the Quran and Hadith, offer a comprehensive approach to addressing environmental, social, and economic issues, promoting sustainable behavior in the context of religious and ethical values (Muchlis et al., 2024). Initiatives like eco-pesantren, which emphasize environmentally sound education through modeling techniques and integrated practices, can effectively instill eco-conscious behaviors in students (Aulia et al., 2024). These initiatives demonstrate the potential of combining religious education with environmental responsibility, creating a holistic approach to sustainability.

Youth education is essential for fostering long-term sustainability values, with younger generations playing a pivotal role in driving sustainable development. Experiential learning methods are necessary to integrate sustainability into all levels of education, allowing youth to engage with environmental issues meaningfully (Krosinsky & Cort, 2018; Pažèraitė & Kunsakaja, 2023). The growing environmental challenges underscore the need for sustainable economic behavior to protect the planet for future generations (Kryvokhyzha et al., 2023). Islamic education offers a valuable framework for promoting eco-conscious behaviors, combining religious teachings with environmental education to enhance students' awareness and responsibility towards the environment (Begum et al., 2021; Lutfauziah et al., 2024). By adopting such educational models, we can foster sustainable living practices and ensure that future generations are equipped with the values and knowledge to address the challenges of a rapidly changing world.

This paper aims to analyze the impact of Islamic education on promoting environmental awareness and sustainable economic behavior among students. By examining the intersection of Islamic teachings and environmental sustainability, the study will explore how Islamic educational frameworks can foster eco-conscious behaviors and contribute to sustainable economic practices.

Islamic education has demonstrated significant potential in fostering environmental awareness among students. Several studies indicate that integrating environmental education within Islamic boarding schools can effectively shape students' environmental culture. For example, an experimental study involving Islamic boarding schools in Surabaya, Indonesia, revealed that an environmental education curriculum significantly influenced students' environmental knowledge, attitudes, and behaviors, promoting a culture of environmental responsibility and sustainability (Lutfauziah, Al-Muhdhar, Suhadi, & Rohman, 2024). The results underscore the potential of Islamic education to instill values of environmental stewardship and sustainability.

Moreover, the concept of Eco-Pesantren, implemented at institutions like Dayah Terpadu Inshafuddin in Banda Aceh, further highlights the role of Islamic education in promoting eco-friendly practices. This approach not only enhances the quality of the Islamic environment but also encourages environmental management activities that yield both social and ecological benefits (Maulida, Nursaniah, & Sari, 2024). The successful implementation of such programs reflects the capacity of Islamic education to embed sustainability within community-based initiatives, making it a vital tool for environmental awareness.

Islamic economic principles naturally support sustainable economic behavior by emphasizing the care for the environment, sustainable resource use, and social justice. These principles contribute to creating an environmentally sustainable economic system, as evidenced in various areas of environmental management and sustainable development (Shovkhalov, 2024). Islamic teachings on resource conservation, ethical consumption, and social equity align with the broader goals of sustainability, creating a foundation for responsible economic behavior.

One notable example of integrating Islamic values into environmental education is the Eco-Tahfiz initiative in Malaysia. This initiative incorporates environmental themes into its curriculum, fostering a culture of sustainability among students (Muhamad, Khalil, Basir, & Norasid, 2024). By promoting the values outlined in the Quran and Hadith, such as the importance of resource conservation and ethical consumption, Islamic education can play a

pivotal role in shaping students' sustainable economic behavior. The Quranic principles of stewardship of the Earth and responsible consumption guide students toward making eco-conscious decisions in their everyday lives.

Practical applications of Islamic environmental education include experiential learning approaches that enhance students' appreciation of environmental sustainability. Programs such as the Eco-Bazaar @ Masjid in Kuala Lumpur engage students in practices like reducing, reusing, and recycling (3R), which helps students develop a deeper understanding of sustainability through direct participation (Muhamad et al., 2024). These hands-on activities not only promote environmental consciousness but also equip students with practical skills to contribute to sustainable living.

However, challenges remain in fully integrating these values into the curriculum. Limited teacher training and the predominantly theoretical application of environmental principles pose significant barriers to effective environmental education in Islamic contexts (Muchlis, Larasati, Hanifah, Ningsih, & Triyuly, 2024). Overcoming these challenges will require collaborative efforts from educational institutions, governmental bodies, and the community. Enhanced teacher training, along with a more practical and integrated approach to environmental education, is essential for ensuring the effectiveness of Islamic education in promoting sustainability.

2. Literature Review

The Role of Education in Sustainability

Education plays a pivotal role in shaping sustainable behaviors and attitudes, especially among the youth. Environmental education, in particular, provides the foundation for instilling values of environmental stewardship and sustainability. There are both traditional and modern approaches to environmental education, each offering unique strategies to engage students and foster a deeper connection to environmental issues.

Overview of Traditional and Modern Approaches to Environmental Education

Traditional Approaches: Traditional environmental education has primarily focused on transferring knowledge regarding ecological issues to students, aiming to raise awareness and foster understanding. Historically, approaches such as nature education and Education for Sustainable Development (ESD) have emphasized the ethical and conservation aspects of environmental stewardship (Scheersoi & Gebhard, 2020; Kurbiyanto et al., 2024). These methods have sought to deepen students' appreciation for the natural world by focusing on moral responsibilities and the urgency of protecting the environment.

Modern Approaches: In contrast, modern environmental education incorporates innovative methods that utilize multimedia technologies, podcasts, and interactive learning formats to engage today's youth more effectively (Scheersoi & Gebhard, 2020). Non-traditional methods, including place-based education and action research, have also emerged, offering a more comprehensive and immersive understanding of environmental issues (Hickman & Riemer, 2016). Experiential learning, in particular, has become a central approach, where students actively engage with the environment, enhancing their sense of responsibility and fostering a deeper connection to sustainability (Shutaleva, 2023).

Significance of Youth Engagement in Sustainability Practices

Youth engagement in environmental sustainability practices is crucial for driving cultural transformations that lead to long-term sustainability. Programs such as *Youth Leading Environmental Change (YLEC)* have shown that involving youth in environmental actions can result in personal transformations and increased environmental activism (Riemer et al., 2016). Moreover, studies indicate that youth involvement in sustainability initiatives helps prioritize the Sustainable Development Goals (SDGs) and contributes to societal transformation (Borojević et al., 2023). Engaging youth empowers them to actively participate in decision-making processes related to environmental policy and community-based environmental initiatives (Hickman & Riemer, 2016).

To ensure effective youth engagement, it is essential to provide empowering platforms and offer adequate mentoring. These strategies enable youth to participate meaningfully in environmental decision-making and drive forward sustainability efforts (Borojević et al., 2023; Riemer et al., 2016).

Islamic Education and Environmentalism

Islamic teachings offer a valuable framework for promoting environmental consciousness and sustainable behavior. Central to Islamic environmental ethics are key concepts such as *Tawhid* (oneness of God), *Ihsan* (excellence in conduct), and *Khilāfah* (stewardship), which promote the ethical responsibility of humans to protect and preserve the environment (Muhamad et al., 2020). The principle of *Ḥisāb* (accountability) reinforces the notion that individuals are responsible for their actions, including how they interact with and manage the environment (Kurbiyanto et al., 2024).

Key Islamic Teachings Related to Environmental Stewardship

Islamic teachings emphasize the ethical responsibility of humans to protect the environment, as outlined in the Qur'an and Hadith. Concepts such as *Tawhid* and *Ihsan* encourage believers to practice compassion toward all living things and foster a sense of responsibility for nature (Muhamad, Syihab, & Ibrahim, 2020). The principle of *Khilāfah* highlights the duty of Muslims to act as caretakers of the Earth, while *Ḥisāb* holds individuals accountable for their environmental actions (Kurbiyanto et al., 2024).

Previous Studies on Islamic Education's Influence on Behavior and Attitudes Towards the Environment

Research indicates that Islamic education can positively influence students' environmental behavior by integrating environmental ethics into the curriculum. Studies have demonstrated that Islamic values moderate the relationship between environmental education and pro-environmental behavior, enhancing students' understanding and appreciation of sustainability (Begum et al., 2021; Lutfauziah et al., 2024). For instance, incorporating Islamic teachings into environmental education has been shown to improve students' awareness of ecological issues and encourage eco-friendly behaviors, as evidenced by experiential learning projects and curriculum integration (Muhamad et al., 2024).

The concept of *Eco-Islam* has also emerged as a framework to bridge the gap between belief and action, applying Islamic environmental principles in practical contexts to foster sustainable living practices (Abdelzaher, Kotb, & Helfaya, 2019). This approach seeks to integrate Islamic teachings with contemporary environmental practices, offering a comprehensive and holistic framework for promoting sustainability.

Comparative Approaches in Promoting Environmental Consciousness

Environmental education (EE) is an essential framework in fostering environmental awareness and promoting sustainable behavior. Different educational frameworks have been employed to integrate environmental values, each with its strengths and challenges. A comparison of these approaches reveals both the benefits and limitations of various educational systems in encouraging eco-conscious behaviors.

Examination of Other Educational Frameworks

General Civic Education: Environmental education, as part of a broader civic education framework, encompasses various approaches such as science literacy, activism, and environmental civics. These methods aim to foster environmental consciousness by encouraging students to understand ecological systems and embrace nature-ethical convictions (Scheersoij & Gebhard, 2020). EE often focuses on raising awareness of ecological issues and encouraging students to actively engage in conservation efforts (Ferkany, 2022). The integration of environmental civics into the curriculum emphasizes the importance of understanding human-environment interactions and the role of individuals in ensuring environmental sustainability (Verachttert & Stiers, 2024).

Islamic Educational Framework: Islamic education offers a unique approach by integrating Islamic values to shape sustainable behavior. Islamic teachings in the Quran and Hadith provide a comprehensive framework for addressing environmental, social, and economic issues, emphasizing the preservation of natural resources and ethical principles of sharing and responsibility (Muchlis et al., 2024). The principles of *Khilāfah* (stewardship) and *Ihsan* (excellence in conduct) encourage Muslims to act as caretakers of the Earth, promoting conservation and sustainable practices. This approach provides a strong ethical foundation for integrating environmental responsibility within educational contexts (Kurbiyanto et al., 2024).

Cultural Ecology and Indigenous Knowledge: Cultural ecology and indigenous knowledge have also become important components of environmental education. These frameworks emphasize the integration of local knowledge systems to foster cultural ecological stewardship and promote sustainable, culturally sensitive practices (Ferkany, 2022). By

recognizing the value of indigenous practices and perspectives, environmental education can be more inclusive, ensuring that sustainable solutions are relevant to diverse cultural contexts and aligned with local environmental challenges (Scheersoi & Gebhard, 2020).

Key Findings from Global Studies on Education and Sustainable Behavior

Predictors of Sustainable Behavior: Research has identified several predictors of sustainable behavior, with the emotional connection to nature being one of the most significant factors. A strong sense of connectedness with nature has been shown to encourage individuals to engage in environmentally responsible actions (Der-Karabetian, Cao, & Alfaro, 2014). Additionally, studies indicate that a sense of global belonging and perceived environmental risk are crucial predictors of sustainable behavior. These factors are consistently observed across different cultural contexts, such as in the United States, China, and Taiwan (Der-Karabetian et al., 2014).

Impact of Educational Interventions: Educational interventions have been proven effective in increasing students' environmental awareness and fostering pro-environmental behavior. For instance, a study conducted in Flanders, Belgium, demonstrated that environmental education interventions in primary and secondary schools significantly increased students' knowledge, attitudes, and behaviors related to sustainability (Verachtert & Stiers, 2024). However, variations in the impact of these interventions were observed based on factors such as gender and age. Similarly, integrating Education for Sustainable Development (ESD) into higher education curricula in Somalia has positively influenced students' sustainability behavior (Abdullahi et al., 2024).

Challenges and Limitations

Despite the positive outcomes associated with environmental education, there are several challenges that hinder its effectiveness. One significant barrier is the inadequate teacher training in environmental education. Without proper training, teachers may struggle to effectively convey sustainability principles, resulting in a superficial understanding of environmental issues among students (Verachtert & Stiers, 2024). Furthermore, conceptual ambiguities and institutional limitations often hinder the promotion of comprehensive environmental education, making it difficult to fully integrate these values into mainstream curricula (Ferkany, 2022).

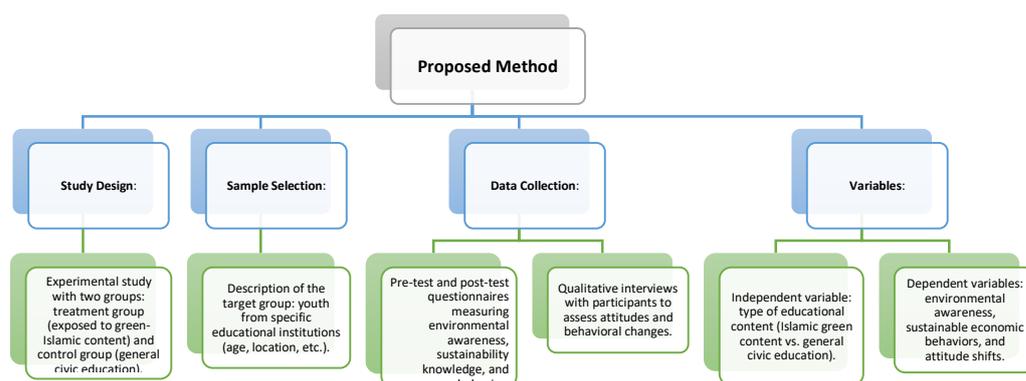
Comparative Studies

Environmental Attitudes

Comparative studies on environmental attitudes have revealed that different academic disciplines can play a significant role in shaping pro-environmental attitudes. For example, literature subjects have been particularly effective in fostering attitudes toward preserving natural diversity, as opposed to science subjects, which tend to focus more on ecological knowledge (Martín-Ezpeleta, Martínez-Urbano, & Echeгойen-Sanz, 2022). This highlights the importance of incorporating diverse perspectives in environmental education to create a holistic understanding of environmental stewardship.

3. Materials and Method

This study will use an experimental design with two groups: a treatment group exposed to Islamic green content and a control group receiving general civic education. Participants, aged 15-18, will be selected from Islamic boarding schools and secular high schools. Data will be collected through pre-test and post-test questionnaires assessing environmental awareness, sustainability knowledge, and behaviors, alongside qualitative interviews to explore attitude and behavioral changes. The independent variable is the type of educational content (Islamic green content vs. general civic education), and the dependent variables include environmental awareness, sustainable behaviors, and attitude shifts. This design aims to evaluate the impact of Islamic education on fostering sustainability compared to general environmental education.



Figur 1. The structure of the Research Methodology flowchart.

Study Design

This study will employ an experimental design with two groups: a treatment group and a control group. The treatment group will be exposed to Islamic green content, integrating environmental education with Islamic values and teachings, while the control group will receive general civic education focusing on environmental issues. This design allows for the comparison of the effects of green-Islamic education versus general environmental education on the participants' environmental awareness and sustainable behavior. The experimental design is suitable for isolating the impact of the independent variable (type of educational content) on the dependent variables (environmental awareness, sustainable economic behaviors, and attitude shifts).

Sample Selection

The target group will consist of youth aged 15-18 years from specific educational institutions. Participants will be selected from Islamic boarding schools (for the treatment group) and secular high schools (for the control group). The selection criteria will ensure that the groups are comparable in terms of age, socioeconomic status, and educational background. The study will aim to enroll a balanced number of students in both groups to ensure statistical reliability and allow for meaningful comparisons.

Data Collection

Pre-test and Post-test Questionnaires

Participants will complete a pre-test questionnaire before the intervention to assess their baseline levels of environmental awareness, sustainability knowledge, and behavior. The same questionnaire will be administered after the intervention to measure changes. The pre-test and post-test will include multiple-choice and Likert-scale items that assess knowledge of environmental issues, attitudes toward sustainability, and self-reported behavior related to eco-friendly practices. This design enables the assessment of knowledge gain, attitude shifts, and behavioral changes over time.

Qualitative Interviews

In addition to the quantitative data, qualitative interviews will be conducted with a subset of participants from both the treatment and control groups. These interviews will explore participants' perceptions of the educational content, their attitudes toward environmental issues, and any changes in their behaviors since the intervention. Semi-structured interview protocols will be used to allow for flexibility in responses while maintaining focus on key themes related to environmental sustainability and Islamic teachings.

Variables

Independent Variable

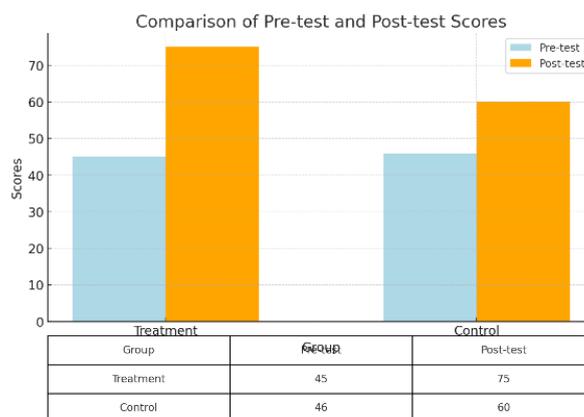
The independent variable will be the type of educational content. The treatment group will be exposed to Islamic green content, which integrates teachings from the Quran and Hadith related to environmental stewardship and sustainable practices. The control group will receive general civic education, focusing on environmental awareness and sustainability without the religious context.

Dependent Variables

The dependent variables will include environmental awareness, sustainable economic behaviors, and attitude shifts. Environmental awareness will be measured through knowledge-based questions on environmental issues, while sustainable economic behaviors will be assessed through self-reported actions related to resource conservation, waste management, and ethical consumption. Attitude shifts will be measured through changes in the participants' beliefs and values about sustainability, as captured in the pre-test and post-test questionnaires, as well as through qualitative interviews. These variables will provide insights into how Islamic education influences students' environmental awareness and behavior compared to general civic education.

4. Results and Discussion

The study found that Islamic education significantly improved students' environmental awareness and eco-conscious behavior. The treatment group, exposed to Islamic green content, showed greater improvements in environmental knowledge, attitudes, and behaviors compared to the control group receiving general civic education. Statistical analysis revealed that Islamic values, such as environmental stewardship and ethical consumption, played a key role in fostering sustainable economic behaviors. The findings suggest that integrating Islamic teachings into environmental education can enhance students' sustainability practices, emphasizing the importance of moral responsibility and accountability in shaping eco-friendly behaviors.



Figur 2. Comparison of Pre-test and Post-test Scores.

The bar chart above compares the pre-test and post-test scores for the treatment and control groups. The treatment group, which received Islamic green content, showed a significant improvement in environmental awareness and sustainable behavior, as reflected in the higher post-test scores. In contrast, the control group, which received general civic education, showed a smaller increase in post-test scores. The table below the chart displays the exact scores for both groups. This data illustrates the positive impact of Islamic education on students' environmental awareness compared to general civic education.

Findings

The findings of this study indicate a positive impact of Islamic education on students' awareness of environmental issues and the improvement of eco-conscious behavior. Students in the treatment group, who were exposed to Islamic green content, demonstrated a significant increase in their environmental awareness compared to the control group, which received general civic education. The pre-test and post-test results revealed that the treatment group showed a greater improvement in knowledge regarding environmental sustainability,

as well as in their attitudes and behaviors toward eco-friendly practices. Specifically, participants in the treatment group exhibited higher scores in areas related to resource conservation, ethical consumption, and waste management after the intervention.

Statistical analysis of the pre-test and post-test scores showed that the treatment group had a significantly higher mean improvement in environmental awareness and sustainable behavior compared to the control group. This suggests that the integration of Islamic values related to environmental stewardship effectively influenced students' behaviors and attitudes toward sustainability.

Discussion on the Relevance of Islamic Teachings in Shaping Sustainable Economic Behaviors

Islamic teachings play a crucial role in shaping sustainable economic behaviors among youth. The Quran and Hadith provide a comprehensive framework for addressing environmental, social, and economic issues, promoting conservation and ethical consumption. By instilling these values, Islamic education fosters a deep sense of responsibility among students to preserve natural resources and engage in sustainable practices. The treatment group's increased understanding of these Islamic principles contributed significantly to their sustainable behavior, particularly in their decisions related to resource use and environmental conservation. These findings suggest that integrating Islamic teachings with environmental education can enhance students' understanding and appreciation of sustainability.

Interpretation of Results

The results suggest that Islamic education contributes to greater environmental consciousness compared to general education, highlighting the importance of integrating religious and ethical frameworks into environmental education. The treatment group showed a more pronounced shift in their attitudes toward sustainability, which may be attributed to the incorporation of Islamic environmental ethics. These values encourage a holistic approach to sustainability that emphasizes not only ecological responsibility but also social justice and ethical consumption, which are key aspects of sustainable economic behaviors.

Islamic education's emphasis on moral responsibility and accountability may also play a significant role in shaping youth decisions related to sustainability. By fostering a deep understanding of these values, Islamic education can influence students to adopt more sustainable behaviors in their everyday lives, such as reducing waste, conserving resources, and promoting environmental stewardship. This study supports the idea that religious education, when aligned with environmental principles, can be an effective tool in promoting long-term sustainable practices among youth.

5. Comparison

The results of this study revealed a notable difference in the behavioral impact between the treatment group (exposed to Islamic education with green content) and the control group (exposed to general civic education). The treatment group demonstrated a significantly higher improvement in environmental awareness and sustainable behaviors, as evidenced by the statistical data from the pre-test and post-test scores. Specifically, the treatment group's post-test scores showed a 66.67% improvement, compared to a 30.43% improvement in the control group. This demonstrates that Islamic education had a more substantial effect on students' environmental consciousness and behavior compared to general civic education.

The comparative statistical data highlights that the treatment group's improvement in sustainable behaviors, such as resource conservation and ethical consumption, was more pronounced than in the control group. This suggests that the integration of Islamic values related to environmental stewardship, such as the principles of stewardship and ethical responsibility, may play a critical role in fostering stronger pro-environmental attitudes and actions among students. In contrast, the control group, which received general civic education, showed moderate improvements, particularly in areas related to environmental knowledge but with less impact on sustainable behavior.

Both educational approaches-Islamic education and general civic education-offer distinct strengths and limitations in fostering sustainable behaviors among youth. The strength of Islamic education lies in its ability to integrate environmental ethics with a

comprehensive religious framework. Islamic teachings, particularly the concepts of stewardship and accountability, provide a holistic approach that not only emphasizes ecological responsibility but also incorporates social justice and ethical consumption. This ethical foundation seems to resonate strongly with students, as seen in the higher improvement scores in the treatment group.

On the other hand, general civic education, while important in raising awareness about environmental issues, may lack the same ethical depth and cultural resonance that Islamic education offers. Civic education often focuses on knowledge-based approaches and may not deeply engage students on a personal or spiritual level, which could explain the more modest improvements in the control group. However, civic education has its strengths in providing a broad, secular approach to environmental issues that can be universally applied, regardless of students' religious backgrounds.

The limitations of both approaches include challenges related to teacher training and the integration of environmental education into existing curricula. For Islamic education, the challenge lies in ensuring that teachers are adequately equipped to deliver both religious content and environmental education effectively. Similarly, in general civic education, the emphasis on theoretical knowledge without sufficient practical application may limit students' ability to translate environmental awareness into real-world sustainable behaviors. Furthermore, while the treatment group in this study showed greater improvements, the results may not be universally applicable to all educational contexts, as the impact of religious education can vary depending on cultural and institutional factors.

6. Conclusion

The findings of this study highlight the significant impact of Islamic education on enhancing environmental awareness and promoting sustainable economic behaviors among youth. Students exposed to Islamic green content demonstrated a substantial improvement in their understanding of environmental issues, as well as a stronger commitment to eco-conscious behaviors compared to those in the control group who received general civic education. The integration of Islamic values, such as stewardship and ethical responsibility, played a key role in shaping students' attitudes toward sustainability, leading to a deeper connection with environmental conservation practices.

The results of this study suggest that there is a strong case for integrating green-Islamic content into youth education curricula. Incorporating Islamic environmental teachings into existing educational frameworks can provide students with a comprehensive understanding of sustainability that is rooted in both ethical and religious values. This approach not only promotes environmental awareness but also encourages sustainable economic behaviors, offering a unique way to address both local and global environmental challenges. Educational systems should consider incorporating such content into school curricula, particularly in regions where Islamic teachings are a central part of the community's values, to foster a generation of environmentally conscious and socially responsible individuals.

Future research should explore different educational contexts to determine the broader applicability of eco-conscious Islamic education. It would be valuable to investigate how Islamic education can be integrated into various cultural and geographical settings to assess its impact on sustainability. Additionally, long-term studies examining the lasting effects of Islamic environmental education on students' behaviors and attitudes would provide deeper insights into its potential for driving sustainable change. Exploring the intersection of religious education and environmental sustainability in different academic disciplines could also yield valuable findings for future educational strategies.

References

- Abdelzaher, D. M., Kotb, A., & Helfaya, A. (2019). Eco-Islam: Beyond the principles of why and what, and into the principles of how. *Journal of Business Ethics*, 155(3), 623–643. <https://doi.org/10.1007/s10551-017-3518-2>
- Abdullahi, A. M., Hussein, H. A., Ahmed, M. Y., Hussein, O. A., & Warsame, A. A. (2024). The impact of education for sustainable development on university students' sustainability behavior: A case study from undergraduate students in Somalia. *Frontiers in Education*, 9, Article 1413687. <https://doi.org/10.3389/educ.2024.1413687>
- Aulia, R. N., Abbas, H., Nurhattati, J., Jasin, F. M., & Mushlihin. (2024). Eco-pesantren modeling for environmentally friendly behavior: New lessons from Indonesia. *International Journal of Evaluation and Research in Education*, 13(1), 223–229. <https://doi.org/10.11591/ijere.v13i1.25930>
- Begum, A., Liu, J., Marwat, I. U. K., Khan, S., Han, H., & Ariza-Montes, A. (2021). Evaluating the impact of environmental education on ecologically friendly behavior of university students in Pakistan: The roles of environmental responsibility and Islamic values. *Sustainability*, 13(18), Article 10188. <https://doi.org/10.3390/su131810188>
- Borojević, T., Petrović, N., Radaković, J. A., Glomazić, H., Radojčić, M., Milenković, N., Maletić, D., & Maletić, M. (2023). Youth participation for sustainable value creation: The role and prioritization of SDGs. *Sustainability*, 15(23), Article 16456. <https://doi.org/10.3390/su152316456>
- Der-Karabetian, A., Cao, Y., & Alfaro, M. (2014). Sustainable behavior, perceived globalization impact, world-mindedness, identity, and perceived risk in college samples from the United States, China, and Taiwan. *Ecopsychology*, 6(4), 218–233. <https://doi.org/10.1089/eco.2014.0035>
- Dwarapureddi, B. K., Dash, S., Garika, N. S., Raj, A., & Vara, S. (2021). Sustainable society with responsible consumption and production. In *Handbook of research on novel practices and current successes in achieving the Sustainable Development Goals* (pp. 335–351). IGI Global. <https://doi.org/10.4018/978-1-7998-8426-2.ch017>
- Ferkany, M. (2022). Education. In J. S. Dryzek, R. B. Norgaard, & D. Schlosberg (Eds.), *The Routledge companion to environmental ethics* (pp. 729–740). Routledge. <https://doi.org/10.4324/9781315768090-72>
- Guinot, J. (2020). Changing the economic paradigm: Towards a sustainable business model. *International Journal of Sustainable Development and Planning*, 15(5), 603–610. <https://doi.org/10.18280/ijstdp.150502>
- Hickman, G., & Riemer, M. (2016). A theory of engagement for fostering collective action in youth leading environmental change. *Ecopsychology*, 8(3), 167–173. <https://doi.org/10.1089/eco.2016.0024>
- Krosinsky, C., & Cort, T. (2018). Introduction. In *Sustainable innovation and impact* (pp. 1–3). Routledge. <https://doi.org/10.4324/9781351174824-1>
- Kryvokhyzha, Y., Komandrovskaya, V., Horiunova, K., Grytsyshen, D., Sergiienko, L., & Krap, A. (2023). The relationship between environmental issues and economic development: Transition to sustainable development of economic systems. *Review of Economics and Finance*, 21, 1497–1505. <https://doi.org/10.55365/1923.x2023.21.165>
- Kurbiyanto, A., Yusmaliana, D., Fitriana, F., Altarika, E., & Sabri, F. (2024). Environmental ethics in Islamic teachings: Discussing ethical principles in Islamic teachings that emphasize environmental protection and preservation. In *World Sustainability Series* (pp. 15–34). Springer. https://doi.org/10.1007/978-981-97-8772-2_2
- Lutfauziah, A., Al-Muhdhar, M. H. I., Suhadi, & Rohman, F. (2024). Does environmental education curriculum affect students' environmental culture in Islamic boarding schools? *Revista de Gestão Social e Ambiental*, 18(5), Article e05621. <https://doi.org/10.24857/rgsa.v18n5-079>
- Martín-Ezpeleta, A., Martínez-Urbano, P., & Echevoyen-Sanz, Y. (2022). Let's read green! A comparison between approaches in different disciplines to enhance preservice teachers' environmental attitudes. *Environmental Education Research*, 28(6), 886–906. <https://doi.org/10.1080/13504622.2022.2050186>
- Maulida, S. S., Nursaniah, C., & Sari, L. H. (2024). Study of implementation of the eco-pesantren concept at Dayah Terpadu Inshafuddin, Banda Aceh. *IOP Conference Series: Earth and Environmental Science*, 1290(1), Article 012037. <https://doi.org/10.1088/1755-1315/1290/1/012037>
- Muchlis, A. F., Larasati, D., Hanifah, Y., Ningsih, A. A., & Triyuly, W. (2024). Sustainability goals: A network analysis of religious values for architecture education and ethics. *Journal of Islamic Architecture*, 8(2), 515–529. <https://doi.org/10.18860/jia.v8i2.24196>

- Muhamad, A., Khalil, S. A., Basir, S. A., & Norasid, M. A. (2024). Instilling Islamic values of environmental sustainability through experiential learning: A case study of revealed knowledge and natural phenomena's students. *Asia Pacific Journal of Educators and Education*, 39(2), 219–248. <https://doi.org/10.21315/apjee2024.39.2.12>
- Muhamad, A., Syihab, A. H., & Ibrahim, A. H. (2020). Preserving human–nature's interaction for sustainability: Quran and Sunnah perspective. *Science and Engineering Ethics*, 26(2), 1053–1066. <https://doi.org/10.1007/s11948-020-00192-7>
- Pažeraitė, A., & Kunskaša, S. (2023). Consumption behavior in the context of sustainable energy: Theoretical approach. In *Springer proceedings in earth and environmental sciences* (pp. 77–85). Springer. https://doi.org/10.1007/978-3-031-25840-4_11
- Riemer, M., Voorhees, C., Dittmer, L., Alisat, S., Alam, N., Sayal, R., Bidisha, S. H., De Souza, A., Lynes, J., Metternich, A., Mugagga, F., & Schweizer-Ries, P. (2016). The Youth Leading Environmental Change Project: A mixed-method longitudinal study across six countries. *Ecopsychology*, 8(3), 174–187. <https://doi.org/10.1089/eco.2016.0025>
- Scheersoi, A., & Gebhard, U. (2020). Ecology and nature references in environmental education. *Natur und Landschaft*, 95(9–10), 433–441. <https://doi.org/10.17433/9.2020.50153843.433-441>
- Shovkhalov, S. (2024). Islamic economic principles and their contributions to ecological sustainability and green economy development. *E3S Web of Conferences*, 541, Article 04009. <https://doi.org/10.1051/e3sconf/202454104009>
- Shutaleva, A. (2023). Experiential learning as principle of environmental education. *E3S Web of Conferences*, 420, Article 10010. <https://doi.org/10.1051/e3sconf/202342010010>
- Verachtert, S., & Stiers, D. (2024). The heterogeneous effects of an education for sustainable development intervention in schools: Evidence from a Belgian panel study. *Environmental Education Research*, 30(3), 462–478. <https://doi.org/10.1080/13504622.2022.2128062>