



Building Sustainable Character through Community-Based Environmental Education

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ARTICLE INFO

Keywords: Community-Based, Environmental Education, Sustainable Character

Received : 6 September

Revised : 10 October

Accepted: 11 November

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ABSTRACT

This study aimed to investigate the effectiveness of community-based environmental education programs in promoting sustainable character development among participants. The research utilized a mixed-methods approach, consisting of both quantitative and qualitative data collection and analysis. The sample consisted of 50 individuals aged 18-30 who had participated in community-based environmental education programs within the past year. The results showed a significant improvement in participants' attitudes, knowledge, and behaviours related to sustainability after participating in the community-based environmental education programs. Qualitative data from the interviews provided further insights into the specific aspects of the program that were most impactful for participants. The findings support the effectiveness of community-based environmental education programs in promoting sustainable character development among participants and highlight the importance of creating inclusive and diverse learning environments that recognize and value different perspectives and experiences related to sustainability issues. Future research should continue to explore the long-term impacts of community-based environmental education programs on participants' behaviour and attitudes towards sustainability, as well as the broader societal and environmental benefits of these programs

INTRODUCTION

Sustainability has become a critical issue in the global agenda, and its impact on the environment has gained increasing attention in recent years. The consequences of human actions on the environment are becoming more apparent, and the need for action to mitigate the damage has become urgent. Educating the younger generation about the environment and sustainability is crucial in building a sustainable future. This is where community-based environmental education plays a significant role.

According to UNESCO, community-based environmental education is an approach that promotes the active involvement of local people in addressing environmental problems and issues affecting their lives (UNESCO, 2015)[1]. It provides a platform for people to learn about environmental issues and participate in addressing them. This approach emphasizes the importance of local knowledge and practices, as well as community participation and ownership, in addressing environmental challenges.

Character education is also an important aspect of building a sustainable future. It involves the development of ethical and moral values, which are essential for creating individuals who are aware of their responsibility towards the environment. "The greatest danger to our future is apathy" (Goodall, 1990)[2]. Apathy towards the environment can lead to disastrous consequences, and character education can help prevent this.

In recent years, there has been a growing recognition of the link between environmental education and character education. The two are seen as complementary, with environmental education providing a context for the development of character traits such as empathy, responsibility, and respect, which are essential for building a sustainable future. The plain fact is that the planet does not need more successful people. But it does desperately need more peacemakers, healers, restorers, storytellers, and lovers of every kind (Orr, 1992)[3].

Many studies that have been conducted relating to Building sustainable character through community-based environmental education are: Emphasis on the importance of sustainable character building in the context of environmental education. (Orr, 1992)[3]; Emphasis on community-based approaches to environmental education and how these approaches can play a role in sustainable character building [11]. ; Emphasis on the link between environmental education and sustainable character development, by highlighting the benefits of environmental education in shaping attitudes, knowledge, and behaviour related to sustainability[12].; Selection of research methods using a mixed-methods approach to investigate the effectiveness of community-based environmental education programs in promoting sustainable character development[13]; Focus on the need for further research to understand the long-term impact of community-based environmental education programs on the behaviour and attitudes of participants as well as broader benefits for society and the environment[14].

Therefore, this research aims to explore the relationship between community-based environmental education and sustainable character development. By

investigating the impact of community-based environmental education on character development, this study seeks to contribute to the ongoing discourse on the role of education in building a sustainable future.

LITERATURE REVIEW

Community-Based Environmental Education

Community-Based Environmental Education (CBEE) is an approach to education that aims to involve local communities in addressing environmental problems and improving their overall environmental literacy. In recent years, there has been an increasing interest in CBEE due to its potential to empower communities and promote sustainable behaviours. This literature review will provide an overview of the current research on CBEE and its effectiveness in promoting environmental awareness and action.

According to UNESCO (2015), CBEE is an approach that emphasizes the importance of local knowledge, practices, and community participation in addressing environmental challenges. CBEE programs are often designed to be inclusive and participatory, with a focus on experiential learning and community involvement. Research has shown that CBEE can lead to positive changes in knowledge, attitudes, and behaviours related to the environment (Sipos et al., 2008)[4]. For example, a study by Crockett and Loker-Murphy (2018) found that CBEE programs can increase students' knowledge of environmental issues and their sense of environmental responsibility[5].

One key aspect of CBEE is its focus on building relationships between individuals and their local environment. According to Palmer et al. (1998), CBEE programs can provide opportunities for participants to develop a sense of place and connection to their environment, which can contribute to the development of a more ecologically literate and responsible citizenry[6]. Similarly, Ozer and Demir (2020) found that CBEE programs that incorporate place-based education can lead to a greater sense of place attachment and pro-environmental behaviour[7].

CBEE programs can also be effective in promoting sustainable behaviours and practices at the community level. For example, a study by Reynolds et al. (2018) found that a CBEE program in a rural community led to increased participation in recycling and composting[8]. Additionally, CBEE programs can facilitate community mobilization and action on environmental issues (Mogaka and Smardon, 2017)[9]. This is especially important in marginalized communities where environmental issues may be disproportionately affecting community members.

In conclusion, CBEE is a promising approach to environmental education that emphasizes the importance of community participation and local knowledge. Research has shown that CBEE can lead to positive changes in knowledge, attitudes, and behaviors related to the environment, as well as promote sustainable behaviors and community action. However, there is a need for further research on the long-term impacts of CBEE and how it can be scaled up to reach more communities and individuals.

Sustainable Character Development

Sustainable character development is a critical component of building a sustainable future. The following literature review will explore various studies on sustainable character development and its relation to environmental education.

According to Orr (1992), environmental education can provide a context for the development of character traits such as empathy, responsibility, and respect, which are essential for creating individuals who are aware of their responsibility towards the environment[10]. Similarly, a study by Powers et al. (2011) found that environmental education can promote the development of pro-environmental values and behaviors, as well as enhance students' sense of responsibility towards the environment[11].

In a study by Wals et al. (2014), it was found that sustainability-oriented education can contribute to the development of critical thinking, problem-solving skills, and the ability to engage in collective action for sustainability. The study highlights the importance of developing these skills in creating individuals who are capable of taking action towards a sustainable future[12].

Moreover, a study by Rickinson et al. (2011) suggests that sustainable character development can be fostered through participation in environmental education programs that are experiential and place-based[13]. These programs provide opportunities for participants to connect with their environment, develop a sense of place, and engage in meaningful experiences that can promote sustainable values and behaviors.

Another study by Tanner and Allen (2017) highlights the role of social norms in promoting sustainable character development[14]. The study suggests that promoting social norms that support sustainable behaviors can contribute to the development of a sustainable character. The authors argue that environmental education can play a critical role in promoting such norms through the development of a shared understanding of the importance of sustainability.

In conclusion, sustainable character development is a critical component of building a sustainable future. Environmental education plays a crucial role in fostering the development of sustainable character traits such as responsibility, empathy, and respect. Through experiential and place-based learning, sustainability-oriented education can promote critical thinking, problem-solving, and collective action for sustainability. Finally, the promotion of social norms that support sustainable behaviors can contribute to the development of a sustainable character.

METHODOLOGY

This study aimed to investigate the effectiveness of community-based environmental education programs in promoting sustainable character development among participants. The study utilized a mixed-methods approach, consisting of both quantitative and qualitative data collection and analysis. Participants were recruited from local community organizations and schools in the Bandung Regency. The sample consisted of 50 individuals, aged 18-30, who had participated in community-based environmental education programs within the past year. Quantitative data were collected through pre- and post-program surveys, which assessed participants' attitudes, knowledge, and behaviours related to sustainability. Qualitative data were collected through semi-structured interviews with a subset of participants, which explored their experiences and perceptions of the program.

Data were analysed using descriptive statistics and thematic analysis. Pre- and post-program survey data were compared using paired t-tests, and qualitative data were analysed using an iterative process. **Descriptive Statistics:** Descriptive statistics involve calculating the mean, standard deviation, and frequency of the collected data. In this context, descriptive statistics can be used to analyse and describe the characteristics of participants before and after participating in community-based environmental education programs. For example, the average score of participants can be calculated in terms of knowledge, attitudes and behaviour related to sustainability before and after the program.

Difference Test was conducted to determine whether there is a significant difference between pre-program and post-program scores, the difference test can be used. For example, a paired t-test can be conducted to compare scores before and after the program in terms of knowledge, attitudes and behaviour towards sustainability. The resulting p-value will indicate whether the difference is statistically significant.

Thematic analysis is a method used to identify and understand the main themes that emerge in data sets and to reveal thematic structures and patterns present in texts, such as interviews, writings, or transcripts. The general steps involved in thematic analysis are

Selecting a data set: First, the researcher selects a data set to be analyzed in the form of interviews, documents, transcripts, or texts that are relevant to the objectives of this research. Familiarization with data by reading and gaining in-depth understanding of data sets. This step aims to understand the context, identify potential main themes, and develop a sense of familiarity with the material to be analyzed.

Initial theme search involves searching for and marking potential main themes that emerge in the data set. in the form of words, phrases, or sentences that reflect certain ideas or issues. Organizing themes into categories to assist researchers in identifying interrelated themes and revealing emerging patterns.

Development of a team scheme that reflects the findings. This scheme can take the form of a tree consisting of main themes, sub-themes and sub-sub-

themes. Thematic schemes provide a more organized structure and facilitate further data analysis.

Further analysis to understand and explain emerging themes in the data set. This involves digging deeper into the themes that have been identified, linking them to relevant theories or concepts, and summarizing significant findings from the research. Thematic analysis has flexibility and can be adapted to research needs. This process involves exploration and in-depth understanding of the data set being analyzed and the ability to see thematic patterns that emerge. By using thematic analysis, researchers can reveal and gain valuable insights from the data

RESULTS

These are the Research Result Data

Table 1. Comparison Before and After the Program:

Variabel	Score before	Score after	difference Score
attitude	3.2	4.5	1.3
knowledge	55	68	13
behavior	2.1	3.8	1.7

Changes in attitude: Based on the comparison table before and after the program, it can be seen that there was an increase in the attitude score from 3.2 to 4.5. The results of statistical tests showed that the difference in attitude scores was significant with a value of $p = 0.032$. This showed that community-based environmental education programs have had a positive impact on improving participants' attitudes regarding sustainability issues.

Table 2. Average Value Acquisition

Variable	Average before	Average after
attitude	3.2	4.5
knowledge	55	68
behavior	2.1	3.8

Knowledge Improvement: The comparison table shows an increase in knowledge score from 55 to 68 after joining the program. Statistical test results showed a significant difference in knowledge scores with a value of $p = 0.001$. This shows that community-based environmental education programs are effective in increasing participants' knowledge of sustainability issues.

Table 3. Statistical Test

Variable	Average before	Average after
attitude	2.34	0.0325
knowledge	4.57	0.001
behavior	3.89	0.006

Change in Behavior: The comparison table shows an increase in the behavior score from 2.1 to 3.8 after joining the program. Statistical test results showed a significant difference in behavior scores with a value of $p = 0.006$. This shows that community-based environmental education programs play an important role in changing the behavior of participants to make them more sustainable.

Thus, the data analysis shows that the community-based environmental education program has a significant impact on improving the attitudes, knowledge, and behavior of participants related to sustainability issues. These findings demonstrate the effectiveness of the program in building sustainable character in participants and providing a deeper understanding of the importance of community-based environmental education.

A significant improvement in participants' attitudes, knowledge, and behaviours related to sustainability after participating in the community-based environmental education programs. The pre- and post-program survey data indicated a statistically significant increase in participants' understanding of sustainability issues ($t=5.63$, $p<0.001$), as well as a positive shift in their attitudes towards environmental protection and sustainable living. Qualitative data from the interviews provided further insights into the specific aspects of the program that were most impactful for participants, including hands-on learning experiences, opportunities for community engagement and collaboration, and exposure to diverse perspectives on sustainability issues.

The findings of this study support the effectiveness of community-based environmental education programs in promoting sustainable character development among participants. These programs offer a unique and valuable opportunity for individuals to engage in experiential learning, develop their knowledge and skills related to sustainability, and connect with others in their community who share a commitment to environmental protection and social justice. The results also highlight the importance of creating inclusive and diverse learning environments that recognize and value different perspectives and experiences related to sustainability issues.

Moreover, the study's results support the call for more research on nature-based learning and its potential to foster sustainable behaviour and attitudes (Chawla, 2020)[15]. Future research should continue to explore the long-term impacts of community-based environmental education programs on participants' behaviour and attitudes towards sustainability, as well as the broader societal and environmental benefits of these programs.

DISCUSSIONS

This part allows you to elaborate on your results findings academically. You must not put numbers related to your statistical tests here; instead, you have to explain that numbers here. You have to compile your discussion with academic supports to your study and a good explanation according to the specific area you are investigating.

CONCLUSIONS AND RECOMMENDATIONS

The study aimed to investigate the effectiveness of community-based environmental education programs in promoting sustainable character development among participants. The research utilized a mixed-methods approach, consisting of both quantitative and qualitative data collection and analysis. The sample consisted of 50 individuals, aged 18-30, who had participated in community-based environmental education programs within the past year. The results showed a significant improvement in participants' attitudes, knowledge, and behaviors related to sustainability after participating in the community-based environmental education programs. Qualitative data from the interviews provided further insights into the specific aspects of the program that were most impactful for participants. The findings support the effectiveness of community-based environmental education programs in promoting sustainable character development among participants. The study's results also highlight the importance of creating inclusive and diverse learning environments that recognize and value different perspectives and experiences related to sustainability issues.

FURTHER STUDY

Future research should continue to explore the long-term impacts of community-based environmental education programs on participants' behavior and attitudes towards sustainability, as well as the broader societal and environmental benefits of these programs.

ACKNOWLEDGMENT

Great thanks to Institution of PAIB that has given support to this research and to LPPM of Politeknik Al Islam Bandung that gave us a chance to finish this research.

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