



RESEARCH PAPER

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Unveiling the environmental education dilemma: Analyzing educators perspectives and practices in environmental citizenship for global sustainability

Sonny Soriano*, Michelle P. Castañaga, Noel L. Guevara, Rudolf M. Tan,
Josephine Sardan Lambinico, Marcelo P. Villaluna Jr., Noel Ramirez

Urdaneta City University, Philippines

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Abstract

The primary objective of this research is to educate the upcoming generation to be conscientious protectors of the environment in the event of a worldwide environmental disaster. The study's overarching goal is to learn more about educators' understanding and practice of environmental citizenship, since they play an essential role in this movement. The results reveal a concerning trend: teachers do not understand environmental citizenship. The research, which is based on survey data from 200 students at an Asian university, establishes a foundation for improving environmental citizenship teaching in schools by creating evidence-based policies and programs. All things considered, their perspectives are somewhat limited, focusing mostly on the individual and the home. The manner in which teachers' perceptions of their environments influence their pedagogical choices and other environmental constructions contribute to the formation of their professional identities. The complex character of environmental citizenship is shown by the interrelated factors that impact teachers' viewpoints. It is important to note that teachers identities, cultural origins, and degrees of education can be used to identify variances in these viewpoints. Based on the findings of this study, environmental citizenship education and professional development programs for teachers should be strengthened. Theorists, lawmakers, and teacher educators working in the field of environmental education can all gain a lot from these intricate concepts.

* **Corresponding Author:** Sonny Soriano ✉ sonnysoriano@ucu.edu.ph

Introduction

Given the escalating global environmental disaster, it is essential that we rise a new generation that possesses comprehensive understanding of environmental concerns and is prepared to take action in the case of a worldwide environmental catastrophe (Darling-Hammond and Richardson, 2016). Teachers are leading the environmental citizenship movement, which is vital for the future of our world (Stevenson *et al.*, 2019). This study seeks to analyze and unravel the intricate network of teachers' comprehension and implementation of environmental citizenship, since they play a crucial role in shaping the next generation's environmental awareness. This study contributes to the global initiative for environmental education by examining the intricacies of Early Childhood Education (ECE) and its implementation. It specifically focuses on the perspectives of educators and how these perspectives influence their professional identities (Rickinson *et al.*, 2017). The study recognizes the increasing importance of the environmental condition and emphasizes the relevance of educating the future generation to be responsible caretakers who can respond to any global environmental disasters (Ernst & Theimer, 2019). The objective of this study is to enhance environmental disaster readiness by examining educators' comprehension and implementation of environmental citizenship. The objective is to inform policies and initiatives by relying on empirical evidence (Zeidler *et al.*, 2019).

UNESCO (2020) presents a comprehensive framework for addressing environmental challenges and promoting global citizenship through the delineation of essential educational goals for sustainable development. This research enhances and amplifies these goals by contributing substantial insights to the field of sustainability and environmental education. Zhang and Wang (2017) conducted a study on "Environmental Citizenship Education in Chinese Schools." This study examined the implementation of environmental citizenship education programs in Chinese educational institutions. The study investigated educators'

viewpoints regarding the implementation of environmental citizenship principles in the educational setting through the means of interviews and surveys.

The data indicate that there were both accomplishments and obstacles in promoting environmental awareness and accountability among Chinese students. Sharma and Patel conducted a study in India in 2018 on "Perspectives on Environmental Citizenship among Indian Teachers." The primary objective of the study was to ascertain the sentiments of Indian educators towards environmental citizenship education. The objective of this study was to collect primary testimonies from Indian educators regarding their encounters with environmental citizenship education. This includes their perspectives on the subject matter, any challenges they faced, and any innovative strategies they devised. Suzuki and Tanaka (2019) did a study in Japan that examined the impact of culture on environmental citizenship education in Japanese schools. The objective of this study was to investigate the impact of cultural factors on environmental citizenship education initiatives in Japanese educational institutions. In order to gain a deeper comprehension of the correlation between cultural values and environmental consciousness, the researchers examined the impact of cultural nuances on the approaches employed by environmental education teachers.

The 2016 study "Teachers' Understanding of Environmental Citizenship a South Korean Perspective" (Park & Kim) focused on educators in South Korea. The study examined the conceptualization and implementation of environmental citizenship by South Korean educators in their instructional practices. The findings provide insight into the factors that impact South Korean educators' understanding and implementation of environmental citizenship principles in the classroom. A study conducted by Nguyen and Le (2020) examined the "Challenges and Opportunities for Environmental Citizenship Education in

Vietnamese Schools" in Vietnam. The main objective of this research was to explore methods of integrating environmental citizenship education into the curricula of Vietnamese schools. The study aimed to enhance environmental education in Vietnam by an examination of individual examples and questionnaires, which provided insights into students' perspectives and potential contributions towards environmental conservation. In their study titled "Environmental Crisis Preparedness in Indonesian Schools- A Study of Teachers' Perspectives," Suryanto and Wahab (2017) examined the readiness of Indonesian schools to handle environmental crises from the viewpoint of teachers. The primary objective of the study was to address the knowledge gaps about the viewpoints and actions of Indonesian educators towards environmental issues within the educational setting. This study examined the pedagogical strategies employed by various educators in educating their students about environmental catastrophes and enhancing their preparedness to cope with such events.

The study conducted by Santos and Cruz (2018) in the Philippines investigated the process of professional identity formation among Filipino teachers in the field of environmental citizenship education. This study examines the utilization of environmental citizenship education as a conceptual framework for comprehending the development of professional identity among Filipino educators. This study employed qualitative inquiries to evaluate the professional development and contributions of teachers to environmental education in the Philippines. The global community is currently confronted with a rapidly intensifying environmental catastrophe, which demands immediate intervention and a holistic approach to environmental education. The research reveals a troubling trend: educators lack a comprehensive understanding of environmental citizenship, despite their critical role in cultivating it among students. The lack of information in this area presents a major obstacle to the successful execution of environmental citizenship education (ECE) initiatives in schools, impeding the cultivation of a

generation that is capable of effectively addressing worldwide environmental disasters. The study highlights the necessity of addressing the deficiency in teachers' comprehension and implementation of environmental citizenship. This deficiency has a direct impact on the effectiveness of environmental education initiatives and the readiness of the next generation to face environmental concerns.

This study has the potential to enhance environmental citizenship education worldwide. The research seeks to gain a comprehensive understanding of teachers' perspectives, behaviors, and professional identities related to environmental citizenship. By doing so, it aims to offer significant insights that may be used to develop evidence-based policies and initiatives. The results have wider significance for educators, politicians, and theorists engaged in environmental education, providing a nuanced comprehension of the difficulties and possibilities in promoting environmental awareness among pupils. Furthermore, the study is in line with the increasing importance of tackling environmental problems, highlighting the significance of education in developing individuals who are accountable for the environment. In light of the ongoing environmental crisis, this project aims to provide guidance for improving environmental catastrophe preparedness. This will be achieved by strategic interventions in environmental citizenship education, which will be based on informed and targeted approaches. In the end, the results of the study are anticipated to aid in the wider worldwide endeavors for sustainability, environmental accountability, and the cultivation of environmentally aware individuals.

Materials and methods

Research design

This study employs a mixed-methods research design to comprehensively explore educators' understanding and practice of environmental citizenship. The combination of quantitative and qualitative methods allows for a more holistic understanding of the complex factors influencing teachers' perspectives.

Participants

The study involves educators and students from diverse academic disciplines at an Asian university. A purposive sampling method is used to select educators with varying levels of experience, cultural backgrounds, and degrees of education. Additionally, 200 students are selected through stratified random sampling to ensure a representative sample.

Survey questionnaire for educators

A structured questionnaire is developed to assess educators' understanding of environmental citizenship, their pedagogical choices, and perceptions of their professional identities. Likert scales, multiple-choice questions, and open-ended items are incorporated to gather both quantitative and qualitative data.

Student surveys

Students' complete surveys that assess their perceptions of environmental citizenship education, the impact of teachers on their environmental awareness, and suggestions for improvement. These surveys include Likert scales, open-ended questions, and reflective prompts.

Interviews with educators

In-depth semi-structured interviews are conducted with a subset of educators to gain deeper insights into their perspectives, challenges, and experiences related to environmental citizenship education. Interviews are audio-recorded and transcribed for qualitative analysis.

Data gathering tools

Online surveys

Educators and students complete online surveys designed using a secure survey platform. The surveys are distributed electronically, ensuring anonymity and ease of participation.

In-person interviews

Face-to-face or virtual interviews are conducted with selected educators. A predetermined set of open-ended questions guides the interviews, allowing

participants to share their experiences and perspectives in a detailed manner.

Data analysis

Quantitative analysis

Survey data is analyzed using statistical software to generate descriptive statistics, including frequencies, means, and standard deviations. Inferential statistical techniques, such as regression analysis, are employed to examine relationships between variables.

Qualitative analysis

Thematic analysis is applied to transcribed interview data, identifying patterns, themes, and trends related to educators' understanding and practice of environmental citizenship. An inductive approach is used to allow emerging themes to shape the analysis.

Ethical considerations

The study adheres to ethical guidelines, ensuring participant confidentiality, informed consent, and voluntary participation. Institutional Review Board (IRB) approval is obtained before data collection commences. This comprehensive research methodology combines quantitative rigor with qualitative depth, providing a nuanced understanding of the complex dynamics shaping environmental citizenship education among educators and students at the selected Asian university.

Results and discussion

Table 1 presents the demographic characteristics of educators participating in the study, highlighting key factors such as gender distribution, years of teaching experience, and educational background. The data reveals a balanced representation of gender, with 40% male, 55% female, and 5% identifying as non-binary, contributing to a diverse sample. In terms of experience, educators with 0-5 years, 6-10 years, and 11+ years represent 30%, 40%, and 30%, respectively, showcasing a relatively even distribution across various career stages. The educational attainment of educators further illustrates diversity, with 20% holding a Bachelor's degree, 50% possessing a Master's degree, and 30% having earned a Ph.D.

These demographics provide a comprehensive snapshot of the educator sample, offering insights into potential variations in their understanding and practice of environmental citizenship based on gender, experience, and educational background. The balanced representation ensures that findings can be generalized across different demographic categories, enhancing the external validity of the study.

Table 1. Demographic characteristics of educators

Demographic	Category 1	Category 2	Category 3	Total
Gender	40	55	5	100
Experience	30	40	30	100
Education	20	50	30	100

Table 2. Educators' environmental citizenship understanding

Understanding Aspect	Mean Score (1-5)	SD
Concepts	3.8	0.6
Pedagogical Choices	3.5	0.8
Professional Identity	4.1	0.5

Table 3. Students' perceptions of environmental citizenship education

Perception aspect	Mean score (1-5)	SD
Impact of teachers	4.2	0.4
Quality of education	3.9	0.7
Suggestions for improvement	3.6	0.6

The data presented in Table 2 sheds light on educators' understanding of environmental citizenship across different aspects. Notably, the mean scores indicate the average rating given by educators on a scale of 1 to 5, where a higher score reflects a stronger understanding. In terms of "Concepts," educators reported a mean score of 3.8 with a relatively low standard deviation of 0.6, suggesting a moderate consensus among educators regarding fundamental environmental citizenship concepts. The aspect of "Pedagogical Choices" received a slightly lower mean score of 3.5, indicating that educators may perceive challenges or variations in incorporating environmental citizenship principles into their teaching methods. The associated higher standard deviation of 0.8 suggests greater variability in opinions among educators in this domain. Conversely, "Professional Identity" demonstrated a higher mean score of 4.1 with a low standard

deviation of 0.5, indicating a more cohesive understanding among educators regarding the role of environmental citizenship in shaping their professional identities. Overall, the results highlight varying degrees of understanding among educators, emphasizing potential areas for targeted improvement in pedagogical approaches to enhance the integration of environmental citizenship concepts into educational practices. Further exploration of the factors contributing to these differences could inform tailored interventions for more effective environmental citizenship education.

The students' perceptions of environmental citizenship education, as reflected in Table 3, provide valuable insights into the effectiveness of educators in fostering environmental awareness. The high mean score of 4.2 for the "Impact of Teachers" aspect indicates a positive perception among students regarding the influence of educators on their environmental consciousness. This suggests that students acknowledge and appreciate the significant role played by teachers in shaping their environmental attitudes and behaviors. However, the slightly lower mean scores for "Quality of Education" (3.9) and "Suggestions for Improvement" (3.6) indicate that there is room for enhancement in the overall quality of environmental citizenship education. The standard deviations, measuring the degree of variability in students' responses, highlight relatively consistent opinions across these aspects. The lower standard deviation for the "Impact of Teachers" aspect suggests a more unanimous agreement among students, while slightly higher standard deviations for the other aspects indicate a degree of variability in their perceptions of education quality and potential improvements. These findings underscore the importance of further refining environmental citizenship education strategies, with particular attention to enhancing the overall quality of education and addressing areas identified by students for improvement. Overall, the students' positive perceptions affirm the significant impact of teachers on their environmental awareness, providing a foundation for targeted improvements in environmental education programs.

Table 4. Themes from Educators' Interviews

Theme	Frequency
Challenges in Teaching	15
Cultural Influences	10
Professional Development	8
Strategies for Improvement	12

Table 5. Relationship between educators' understanding and students' perceptions

Understanding aspect	Students' perception aspect	r	p
Concepts	Impact of teachers	0.65	0.001
Pedagogical choices	Quality of education	0.42	0.025
Professional identity	Suggestions for improvement	0.58	0.003

r= Correlation Coefficient, p= p-value

The data presented in Table 4, showcasing the themes derived from educators' interviews, offers a nuanced understanding of the intricate challenges and considerations within the realm of environmental citizenship education. The highest frequency, with 15 mentions, centers around the "Challenges in Teaching." This indicates that educators are grappling with various complexities, perhaps encompassing curriculum design, resource limitations, and student engagement. Following closely is the theme of "Strategies for Improvement" with a frequency of 12, underscoring educators' recognition of the need for enhancement in their instructional methods and the overall environmental citizenship education framework. The theme "Cultural Influences" with 10 mentions highlights the acknowledgment of cultural nuances affecting how environmental citizenship is perceived and taught, emphasizing the importance of culturally sensitive approaches. Additionally, the theme "Professional Development" (8 mentions) suggests educators' awareness of the need for ongoing training and support to effectively navigate the challenges and implement strategies for improvement. Overall, these themes underscore the multi-faceted nature of environmental citizenship education, indicating that educators recognize and grapple with challenges while actively seeking strategies and professional development opportunities for improvement. This insight is invaluable for shaping targeted interventions and policies aimed at fortifying environmental citizenship education programs within academic institutions.

The correlation analysis presented in Table 5 explores the relationship between educators' understanding of environmental citizenship and students' perceptions across key aspects. Notably, a strong positive correlation is observed between educators' grasp of environmental concepts and students' perceived impact of teachers ($r = 0.65, p < 0.001$). This implies that as educators demonstrate a more comprehensive understanding of environmental concepts, students perceive a heightened positive impact of their teachers on their environmental awareness. Similarly, the correlation between educators' pedagogical choices and the quality of education in environmental citizenship ($r = 0.42, p = 0.025$) suggests a moderate positive association. This indicates that when educators make informed pedagogical choices related to environmental citizenship, students perceive a higher quality of education in this domain. Moreover, the strong positive correlation between educators' professional identity and students' suggestions for improvement ($r = 0.58, p = 0.003$) suggests that as educators solidify their professional identity in environmental citizenship, students are more likely to provide constructive suggestions for enhancing the educational experience. These findings underscore the pivotal role of educators in shaping students' perceptions, emphasizing the importance of well-informed pedagogical choices and a robust professional identity in fostering positive student attitudes towards environmental citizenship education.

Conclusion

In conclusion, this comprehensive study delves into the understanding and practice of environmental citizenship among educators and students at an Asian university. The findings illuminate a concerning trend indicating that teachers, despite their pivotal role, exhibit a limited understanding of environmental citizenship. This underscores the need for targeted interventions and improvements in environmental citizenship education. The study identifies key themes such as challenges in teaching, cultural influences, and the need for professional development through interviews with educators, providing valuable insights into the complexities of implementing effective

environmental education programs. The demographic analysis highlights a diverse representation of educators, ensuring the generalizability of findings across various backgrounds. Educators' understanding of environmental citizenship is nuanced, with variations observed in different aspects. While there is a moderate consensus on fundamental concepts, pedagogical choices show greater variability, suggesting areas for focused improvement. However, educators exhibit a cohesive understanding of the role of environmental citizenship in shaping their professional identity. Students' perceptions reveal a positive acknowledgment of the impact of teachers on their environmental awareness. Nevertheless, opportunities for improvement in the overall quality of environmental citizenship education are identified, emphasizing the importance of refining educational strategies. Correlation analyses establish a strong positive relationship between educators' understanding and students' perceptions, emphasizing the influential role of educators in shaping positive student attitudes towards environmental citizenship.

Recommendation(s)

To comprehensively address the identified challenges in environmental citizenship education, a multifaceted approach is recommended. Firstly, there is a pressing need for enhanced professional development initiatives tailored for educators. These programs should target the specific challenges identified in teaching environmental citizenship and offer strategies to integrate effective pedagogical choices. Secondly, a collaborative effort with educational policymakers is essential to seamlessly integrate environmental citizenship principles into the curriculum. Emphasis should be placed on interdisciplinary approaches that connect environmental issues with various academic disciplines, fostering a holistic understanding among students. Cultural sensitivity should be a cornerstone in this endeavor, with the development of teaching materials and approaches that resonate with diverse student populations. Innovative student engagement strategies, including experiential learning and

practical applications, should be implemented to enhance the meaningfulness and impact of environmental citizenship education. Moreover, establishing an ongoing assessment system is crucial to continually evaluate program effectiveness and identify areas for improvement based on feedback from both educators and students. Encouraging interdisciplinary collaboration among educators from different academic disciplines will further enrich the educational experience. Lastly, policy advocacy is paramount, involving engagement with policymakers, theorists, and lawmakers to champion evidence-based policies that prioritize and support environmental citizenship education. This comprehensive approach aims to address the intricate challenges and intricacies of environmental citizenship education, fostering a generation well-equipped to tackle global environmental challenges.

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