Teachers' Perceptions of the Integration of Environmental Education in Pre-Primary Classroom Teaching Practices

By

Mahmuda Sharmin
ID: 22255008

A thesis submitted to Brac Institute of Educational Development in partial fulfillment of the requirements for the degree of
Master of Science in Early Childhood Development

Brac Institute of Educational Development
Brac University
October 2024

Declaration

It is hereby declared that

The thesis submitted is my/our own original work while completing degree at Brac University.

The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.

The thesis does not contain material that has been accepted, or submitted, for any other degree or diploma at a university or other institution.

I have acknowledged all main sources of help.

Student's Full Name & Signature:

_____

Mahmuda Sharmin
ID: 22255008

Approval

The thesis/project titled “Teachers' Perceptions of the Integration of Environmental Education in Pre-Primary Classroom Teaching Practices” submitted by

1. Mahmuda Sharmin (ID: 22255008)

of “FALL 2022” has been accepted as satisfactory in partial fulfillment of the requirement for the degree of Master of Science in Early Childhood Development in October 2024.

Examining Committee:

Supervisor:
(Member)

_____
Syeda Fareha Shaheeda Islam
Senior Lecturer, Early Childhood Development
Brac Institute of Educational Development, Brac University

Program Coordinator:
(Member)

_____
Ferdousi Khanom
Senior Lecturer, ECD Academic Program
Brac Institute of Educational Development, Brac University

External Expert Examiner:
(Member)

_____
Nafisa Anwar
Senior Lecturer, M.Ed. Department
BRAC Institute of Educational Development

Departmental Head:
(Chair)

_____
Dr. Erum Mariam
Executive Director
Brac Institute of Educational Development
Brac University

Ethics Statement

Title of Thesis Topic: Teachers' Perceptions of the Integration of Environmental Education in Pre-Primary Classroom Teaching Practices
Student name: Mahmuda Sharmin
1. Source of population: Teachers working with children in pre-primary classes (3-5 years)
2. Does the study involve (yes, or no)
   a) Physical risk to the subjects - no
   b) Social risk- no
   c) Psychological risk to subjects - no
   d) discomfort to subjects- no
   e) Invasion of privacy- no

3. Will subjects be clearly informed about (yes or no)
   a) Nature and purpose of the study- yes
   b) Procedures to be followed- yes
   c) Physical risk- yes
   d) Sensitive questions- yes
   e) Benefits to be derived- yes
   f) Right to refuse to participate or to withdraw from the study- yes
   g) Confidential handling of data- yes
   h) Compensation and/or treatment where there are risks or privacy is involved- yes

4. Will Signed verbal consent be required (yes or no)
   a) from study participants -yes
   b) from parents or guardian – N/A
   c) Will precautions be taken to protect the anonymity of subjects? - yes

5. Check documents being submitted herewith to the Committee:
   a) Proposal- yes
   b) Consent Form- No
   c) Questionnaire or interview schedule- yes

Ethical Review Committee:

Authorized by:
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_____

Dr. Erum Mariam
Executive Director
Brac Institute of Educational Development
Brac University

Abstract

This study explores pre-primary teachers' perceptions regarding the integration of Environmental Education (EE) into classroom teaching practices in Dhaka, Bangladesh. Through qualitative research involving in-depth interviews and classroom observations, the study reveals that teachers recognize the importance of EE for fostering early environmental awareness and responsible behaviors in young learners. However, significant challenges, such as limited resources, insufficient training, and inadequate infrastructure, hinder the full integration of EE into pre-primary education. Teachers predominantly use storytelling and multimedia tools to convey environmental concepts but struggle to implement hands-on activities due to logistical constraints. The study recommends enhancing teacher training programs, improving school infrastructure, and promoting experiential learning to better integrate EE into pre-primary classrooms. These steps are crucial to cultivating a generation of environmentally conscious individuals capable of addressing future sustainability challenges.

Keywords: Environmental Education, Pre-primary Education, Teachers' Perceptions, Experiential Learning.

Dedication

To my beloved parents, whose boundless love, guidance, and encouragement have been my pillars of strength, and to my dearest husband, for your unwavering support and understanding throughout this journey.

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CHAPTER I: INTRODUCTION & BACKGROUND

Introduction

Integrating Environmental Education (EE) into pre-primary education is crucial for fostering sustainable attitudes and behaviors from an early age. This research aims to examine pre-primary teachers' perspectives on incorporating environmental issues into their classroom practices. Early childhood education significantly impacts children's environmental consciousness, making it essential to explore integrating environmental concepts at this foundational stage (Lamanauskas, 2023).

Research has identified early childhood as a critical period for fostering environmental stewardship and sustainability (Wilson, 1996). Systematic reviews in Early Childhood Environmental Education (ECEE) have highlighted the benefits of nature-rich, play-based educational approaches (Ardoin & Bowers, 2020). Despite extensive literature, there is a notable gap in understanding how educators integrate environmental themes in early childhood settings, particularly at the pre-primary level.

A study in Indonesia revealed that while most teachers support integrating environmental education into primary school curricula, challenges such as limited time hinder effective integration. Despite recognizing its importance, actual changes in school practices remain minimal, underscoring the need for more robust implementation strategies (Lamanauskas & Makarskaitė-Petkevičienė, 2023).

The understanding and awareness of teachers regarding environmental issues significantly influence children's environmental consciousness. The success of environmental education relies on the presence of highly qualified educators who

possess a robust understanding of environmental literacy. Examining teachers' perceptions and implementations of environmental education is crucial for improving educational practices (Türkoğlu, 2019).

Bangladesh places significant emphasis on Environmental Education (EE) due to its vulnerability to natural disasters and environmental crises. EE has been incorporated into integrated approaches across all levels of education in the country. The National Education Policy (2010) emphasizes the importance of EE in developing students capable of addressing climate change challenges and creating environmental awareness. It also advocates for fostering hygienic practices among students to promote overall environmental and health awareness (Sadek, 2024).

While previous research has explored EE within primary and higher educational contexts, studies specifically targeting pre-primary education are scarce. This study addresses this gap by focusing exclusively on pre-primary education and investigating pre-primary educators' perceptions.

This research will explore how educators integrate EE into their teaching practices and the distinct challenges they encounter. By focusing on pre-primary education and the practical application of EE in the classroom, the study aims to provide an understanding of the subject. Additionally, it seeks to capture the perspectives of government pre-primary teachers within Dhaka city.

The study's findings can significantly improve educational practices by identifying effective EE strategies and common challenges in pre-primary classrooms. These insights can guide teacher training programs and curriculum designers in creating

supportive resources and fostering environmentally conscious individuals from a young age. By providing essential knowledge and tools for nurturing environmental awareness and responsibility in young children, this research aims to enhance educational quality and contribute to sustainability efforts, benefiting both educators and students through a more sustainable and environmentally aware educational framework.

Statement of the Problem

Multiple studies have shown that teachers and students are crucial for effectively executing Environmental Education (EE). Despite EE's significant role in shaping individuals' futures, research indicates a lack of critical analysis and understanding of its integration into basic primary education. Although EE has been part of school curricula for over two decades, its implementation remains unsuccessful. Barriers such as inadequate teacher training, insufficient teaching and learning resources, and overloaded curricula hinder effective EE delivery (Kimaro, 2018).

The absence of EE in pre-primary education limits students' exposure to critical thinking, problem-solving, and experiential learning opportunities related to the environment. Environmental education fosters essential skills such as observation, analysis, and reflection, which are crucial for holistic cognitive development. Without these opportunities, young learners may not develop the necessary skills to understand and address environmental issues, impeding their overall academic growth and critical thinking abilities (Chawla & Cushing, 2007).

Integrating environmental education into various school subjects can be both creative and functional. Teachers must be well-informed about effective planning and implementation strategies (Türkoğlu, 2019).

Bangladesh has set a target to accomplish the Sustainable Development Goals (SDGs) by the year 2030, making EE essential for fostering pro-environmental behavior in youth. Despite policies like the National Environmental Policy (NEP) 2018 and the Bangladesh Environmental Protection Act 1995, challenges such as political instability and poor policy implementation hinder progress. EE struggles with lecture-heavy curricula, lack of hands-on learning, inadequate resources, exam-focused assessments, and insufficient teacher training, impeding effective environmental awareness and sustainable behavior development (Uddin, 2023).

Therefore, it is crucial to explore the perceptions and practices of teachers involved in teaching pre-primary students. Addressing these challenges can improve the integration and effectiveness of EE in early education, supporting students' holistic cognitive development and environmental awareness.

Purpose of the Study

The primary purpose of this research project is to explore and understand pre-primary teachers' perceptions of integrating environmental education into their classroom teaching practices. This study seeks to investigate teachers' awareness, comprehension, and approaches to incorporating environmental education themes into their daily lessons. By examining the educators' perspectives, this research seeks to identify effective methods and strategies currently being used and uncover gaps or areas needing improvement in the integration process.

Additionally, the study aims to identify the challenges and obstacles that pre-primary teachers encounter when incorporating environmental education into their teaching. Understanding these challenges is crucial for developing supportive measures and resources that can facilitate better integration of environmental issues in early childhood education.

Significance and Justification of the Study

The significance of environmental education (EE) in early childhood has been emphasized by many researchers. Recent research emphasizes the crucial significance of Early Childhood Environmental Education (ECEE) in promoting environmental literacy from a young age and improving cognitive, social, and emotional growth (Ardoin & Bowers, 2024). The objective of our study is to investigate the perceptions, adaptations, and implementations of environmental education by pre-primary teachers in their classrooms.

The outcomes of this study could influence policy decisions at both institutional and governmental levels. If the study reveals a need for better resources and training, it could lead to policy changes that prioritize funding for environmental education initiatives. According to Stevenson et al. (2017), educational policies mandating environmental education can lead to more consistent and widespread implementation, ensuring all children receive a basic understanding of environmental issues from a young age. This alignment with broader sustainability goals underscores the study's potential impact on policy-making (Stevenson et al., 2017).

Children at the preschool level are naturally curious and eager to explore. Teachers can leverage children's innate inquisitiveness to enhance their comprehension of

nature and ecological systems, fostering their environmental consciousness. Teachers can successfully accomplish this by actively demonstrating environmental leadership and stewardship. Pre-school instructors have a vital role in molding children's understanding of the environment and promoting favorable attitudes and actions toward it. (Yalcin et al., 2016).

Insights from a study conducted in Jamaica on teachers' perspectives towards sustainable development reveal significant dimensions including systems thinking, monolithic perspectives, and citizen participation (Ferguson et al., 2021). The degree to which educators apply systems thinking highlights how much they grasp how environmental, social, and economic issues interact to create sustainable development. These findings complement our research, indicating a basis for formulating pedagogical approaches that foster holistic environmental education from a young age.

Integrating environmental education into pre-primary teaching practices can foster critical thinking, empathy, and a sense of responsibility toward the environment among young learners (Cutter-Mackenzie & Edwards, 2018). These attributes are crucial for their overall development and for cultivating a generation capable of addressing environmental challenges, thus ensuring a sustainable future.

Teachers regard environmental education as a crucial aspect of general education, emphasizing both environmental knowledge and awareness. They use formal and informal methods to educate primary school students, incorporating practical activities, active participation, and experiential learning. The teacher's role, including their participation in environmental activities and their environmental values, is

pivotal in effectively conveying this education (Lamanauskas & Makarskaitė-Petkevičienė, 2023).

Ardoin and Bowers (2020) highlight the growing but inconsistent integration of Early Childhood Environmental Education (ECEE), driven by teachers. They explore educators' perspectives on barriers, motivations, and educational outcomes. Similarly, Otitoju et al. (2022) identify significant barriers like inadequate teacher training and insufficient government support, proposing a pro-environmental behavioral framework to enhance ECEE's effectiveness. This study aims to address these challenges by understanding teachers' perceptions of how to improve the integration of EE in pre-primary classrooms. Environmental education is essential for fostering human enlightenment and sustainable development; emphasizing the importance of understanding and mitigating the environmental impacts of our actions. While initiatives like awareness campaigns and seminars exist, there is a significant gap in involving preschool-aged children. This oversight emphasizes the importance of incorporating environmental education into university degrees and early childhood education programs. Through this approach, we can foster a sense of environmental awareness in young people, leading to positive societal change and empowering future generations to prioritize sustainability (Otitoju et al., 2022).

A survey on environmental education in Bangladesh's public schools and colleges reveals that textbooks are well-written and comprehensible, aiming to teach effective environmental use and preservation. However, the content is subjective and lacks interactivity, focusing more on knowledge than the man-environment relationship. Environmental education is not emphasized in the National Curriculum, leading to a fragmented and incomplete syllabus. Teachers struggle with outdated curricula,

inadequate infrastructure, lack of teaching aids, and insufficient training, resulting in theoretical education without critical thinking or problem-solving skills. An interdisciplinary, hands-on approach is urgently needed to enhance the quality of environmental education (Chowdhury, 2014).

Introducing environmental education to pre-primary students is vital for fostering early environmental literacy and sustainable habits. It is essential to understand teachers' perceptions and strategies at this educational stage. While most studies in Bangladesh focus on environmental education at primary, secondary, or higher education levels, research at the pre-primary level is scarce. This study seeks to address the current gap by presenting empirical data and a detailed analysis of teachers' perspectives and practices in pre-primary classrooms. The findings will add valuable knowledge to the field and serve as a foundation for future research and efforts to improve environmental literacy from an early age.

Research Questions

1. What is pre-primary' teachers' understanding of environmental education?
2. How do pre-primary teachers incorporate environmental education into their daily teaching practices?
3. What challenges do pre-primary teachers encounter in the integration of environmental education into their classroom practices and what support do they believe is necessary to overcome these challenges?

Operational Definition

Environmental Education: Environmental education is a systematic approach that aims to promote environmental literacy by enhancing understanding, beliefs, abilities,

and actions related to the environment. The focus is on comprehending the interconnectedness between human culture and the natural world, encouraging consciousness and accountability towards environmental concerns, ethics, and sustainable methods to produce knowledgeable, driven, and proactive individuals (Sukma et al., 2020).

Pre-Primary School: Pre-primary schools are educational institutions that provide children with early childhood education before they enrol in primary school. These establishments primarily serve children between the ages of 3 and 5, with a focus on developing fundamental abilities in cognitive, social, and motor areas through a combination of play-based learning and structured activities (Haque et al., 2013).

CHAPTER II: LITERATURE REVIEW

Integrating environmental education (EE) into pre-primary education is critical for fostering a fundamental understanding and admiration for the environment among young learners. This literature review explores various dimensions of this integration, focusing on teachers' perceptions, the benefits and challenges of integrating EE, curriculum development implications, and future directions. Insights are drawn from an array of sources, including the "Tbilisi Declaration," foundational papers, and current research from both Bangladeshi and international contexts.

2.1. Teachers' Perceptions and Attitudes Toward Environmental Education

The environment can be viewed in multiple ways: as a separate entity, as a space surrounding an individual, or as a socially and culturally constructed phenomenon in which humans are integral. Recognizing the environment's holistic nature, encompassing biophysical, social, economic, and political aspects influences teachers' attitudes toward environmental education. How teachers perceive and define the

environment directly impacts their teaching methods, the values they impart, and their ability to foster environmentally conscious behaviour in young learners (Kimaro, 2018). This comprehensive understanding is essential in fostering environmental awareness and practices among young learners.

Teachers' beliefs and perceptions play a crucial role in shaping the introduction and emphasis of environmental education in classrooms. Research reveals that teachers' thoughts and beliefs deeply influence their teaching practices, directly impacting their classroom methods. Their beliefs about the curriculum, students, pedagogy, and the learning process often shape their perceptions. Teachers must receive clear and consistent guidance to effectively integrate environmental education into pre-primary classrooms. However, simply delivering environmental content is not sufficient; it is crucial to understand how teachers interpret and internalize these principles to ensure their successful implementation in classroom activities (Ferguson et al., 2021).

While many teachers recognize their role in promoting environmental education, this awareness does not always translate into active, intentional practices. Teachers tend to teach environmental concepts based on their individual definitions and perspectives, leading to inconsistent knowledge among students. Therefore, to cultivate an environmentally conscious society, teachers must not only possess the necessary knowledge but also maintain positive attitudes toward environmental education. Ferguson et al. (2021) emphasize that fostering such attitudes is critical for teachers to actively incorporate environmental principles into their daily teaching practices.

Further research underscores the significance of teachers' perceptions in the effective integration of environmental education. In Bangladesh, studies conducted by Khan

(2014) and Chowdhury (2014) reveal that teachers acknowledge the importance of environmental education but often feel inadequately prepared to teach it due to a lack of proper training and limited resources. These studies suggest that enhancing teacher training programs with a focus on environmental education is necessary for the successful integration of these concepts into the pre-primary curriculum.

Internationally, similar findings have been reported, where teachers show a willingness to adopt environmental education but express a lack of confidence and support. For example, Güner et al. (2011) highlight that despite teachers' readiness to implement environmental education; they often encounter challenges due to inadequate resources and a lack of institutional support. This indicates a need for professional development opportunities, as well as the provision of sufficient materials and support systems to help teachers confidently incorporate environmental concepts into their teaching.

Overall, the literature suggests that teachers' perceptions and attitudes play a critical role in the integration of environmental education in pre-primary classrooms. By fostering positive attitudes and providing adequate training and resources, teachers can be better equipped to introduce young learners to vital environmental concepts, shaping future generations that are environmentally conscious and responsible.

2.2. Environmental Education Practice in Classroom

The integration of environmental education (EE) into classroom practices has become an essential, yet challenging, focus of contemporary educational systems. A range of studies has explored the integration of EE across different educational contexts, revealing both advancements and ongoing challenges in its effective implementation.

Güner et al. (2011) emphasize that pre-primary classrooms partially integrate environmental education into activities such as art, free play, and reading. However, science, nature, mathematics, and drama activities incorporate environmental education more comprehensively. This partial integration is primarily due to a lack of specific content and instructional materials tailored for EE. This finding indicates that while there is an interest in EE at the early childhood level, limitations in resources and curricular design impede its full inclusion in classroom activities.

The increasing awareness of environmental issues among young children further underscores the importance of environmental education in pre-primary classrooms. Sustainability and Environmental Education (SEEd) conducted a survey that revealed young people's eagerness to learn not only about climate change, but also to acquire life skills that promote sustainable living (Tomassi, 2023). Despite this interest, many teachers express a lack of preparedness to teach these subjects, with 70% reporting inadequate training. We recommend practical classroom activities like nature walks, gardening, composting, waste management, and eco-art projects to bridge this gap. These hands-on activities not only enhance students' awareness of environmental issues but also equip them with skills to practice sustainability in their everyday lives, thus facilitating the effective integration of EE into pre-primary teaching practices.

Environmental education aims to raise young children's awareness about the significance of caring for the planet, fostering a sense of responsibility and proactive engagement in environmental protection (Duran, 2023).Historically, the concept of EE began gaining international recognition in the 1940s, receiving formal acknowledgment in 1972. The First International Conference on Environmental

Education, organized by UNESCO and UNEP in 1975, marked a pivotal moment for EE's global significance. In 2017, UNESCO further emphasized the necessity of integrating EE into school curricula worldwide, setting goals such as enhancing children's understanding of ecological systems, promoting environmental awareness, and encouraging active learning through experiential activities like gardening and clean-up projects.

Bladow (2023) broadens the discussion by examining teacher preparation programs, revealing inconsistencies in the integration of EE strategies. The findings indicate that a more extensive and consistent inclusion of environmental strategies in teacher training programs could improve pre-service teachers' confidence and competence in incorporating EE into their future classrooms.

In Bangladesh, Chowdhury (2014) and Haque (2013) examine the formal education system's approach to integrating EE from primary to tertiary levels. Primary education introduces environmental topics, yet their coverage is often superficial and inadequate to tackle complex issues like climate change and biodiversity loss. Moreover, a notable gap exists between theoretical knowledge and the practical, community-based skills required for sustainable development. The researchers also emphasize the lack of integration of indigenous knowledge and local environmental management practices within the curriculum, which is vital for delivering culturally relevant and context-specific EE.

Furthermore, integrating EE into pre-primary classrooms in Bangladesh is crucial for fostering sustainable habits at an early age (Iqbal & Ahsan, 2024). Although some school programs address environmental topics, they often fail to provide

comprehensive lessons on critical aspects such as waste management, reuse, and recycling. Teachers emphasize the importance of interactive activities and creative projects to make environmental learning engaging and practical for young children. Cultural practices significantly influence attitudes toward waste and recycling, suggesting that education efforts must be culturally sensitive. Addressing negative behaviours, such as littering, through classroom discussions can help enhance environmental awareness. Moreover, incorporating traditional practices and recognizing the role of informal recycling sectors, like garbage collectors and "feriwalas," in classroom lessons can provide students with real-world context, encouraging them to adopt sustainable practices (Iqbal & Ahsan, 2024).

Collectively, these studies emphasize the necessity for a holistic integration of environmental education in pre-primary classrooms. Effective integration requires adequate resources, teacher training, and culturally relevant content to prepare students and future educators to address environmental challenges critically and practically. This highlights the on-going need for further research and policy efforts to support teachers' efforts in implementing environmental education in early childhood education settings.

2.3. Benefits of Integrating Environmental Education in Pre-Primary Teaching Practices

Integrating Environmental Education (EE) into early childhood teaching practices offers several substantial benefits. It helps to increase children's awareness of environmental challenges and fosters critical thinking and sustainable behaviours at a young age. According to Haque (2013), introducing environmental concepts early allows children to develop an understanding of the impact of human actions on the

environment. This early introduction is crucial in leveraging children's innate curiosity about their surroundings to build lifelong sustainable habits (NAAE, 2010).

The Tbilisi Declaration, a foundational framework for environmental education, emphasizes the importance of integrating EE across all educational levels. It advocates for a comprehensive approach that includes not only ecological aspects but also social, cultural, and economic perspectives (UNESCO, 1978). This comprehensive introduction to environmental concepts at the pre-primary level can significantly influence children's future attitudes and actions regarding environmental issues.

EE is essential for cultivating an understanding of our actions' impacts on the environment and identifying potential solutions. It aligns with the goal of sustainable development by promoting growth that meets current needs without compromising the ability of future generations to meet theirs. Research indicates that exposure to environmental education enhances cognitive, creative, and critical thinking skills in young children (Haque, 2013). Furthermore, it promotes positive attitudes toward environmental stewardship, contributing to the development of pro-environmental behaviours.

In early childhood, children begin to form foundational attitudes towards nature and the world around them. During this stage, the development of emotional connections with the environment and the acquisition of ecological knowledge are crucial (Lamanauskas, 2023). By incorporating environmental problem-solving activities, children can develop empathy for nature, laying the groundwork for adopting a sustainable lifestyle. This process supports the formation of values and norms related

to environmental interactions, fostering responsible behaviours and a positive worldview that can contribute to global well-being.

According to Petkou et al. (2021), the international scientific community recognizes EE as a vital tool for addressing environmental and social challenges. It plays an essential role in raising awareness among both educators and children, offering insights into environmental issues and their root causes. Environmental education not only fosters pro-environmental behaviours, which are foundational to environmental citizenship, but also equips students with key skills such as investigation, analysis, critical thinking, empathy, and cooperation. These skills are critical for addressing complex environmental and societal challenges, thus reflecting the holistic nature of environmental education.

Türkoglu (2019) emphasizes that embedding environmental education in early childhood curricula promotes a deeper understanding of the relationship between humans and nature. This understanding is key to driving meaningful social change and fostering lifelong habits of sustainability and respect for nature. Furthermore, integrating EE encourages problem-solving and informed decision-making, empowering children to develop a sense of responsibility for the environment.

In Bangladesh, early childhood is a pivotal period for instilling environmental values and knowledge, laying the groundwork for individuals to become proactive problem-solvers in environmental matters. Iqbal and Ahsan (2024) highlight that integrating EE at the pre-primary level can empower children, especially in underprivileged communities facing challenges such as pollution and inefficient waste management. By implementing action-based environmental learning programs, children connect

theoretical concepts to real-life practices, enabling them to drive sustainable change within their communities.

Otitoju et al. (2022) further support the idea that early environmental education can influence social behaviour. They propose that theoretical frameworks, such as transformative learning theories, can inspire young learners to proactively address environmental issues. This underscores the long-term benefits of introducing EE at an early age, as it shapes children's understanding and approach to environmental challenges.

The integration of environmental education in pre-primary education is vital for nurturing awareness, skills, and attitudes that encourage a sustainable lifestyle. It establishes a foundation for fostering environmental responsibility and equips future generations to tackle environmental challenges and support long-term sustainability.

2.4 Challenges and Barriers to Integrating Environmental Education

Despite the recognized benefits, integrating EE into pre-primary education faces persistent challenges, which can be categorized into conceptual, logistical, educational, and attitudinal barriers. In South Africa, for example, unclear policy guidelines, insufficient teacher training, and a lack of teaching resources are cited as significant obstacles to EE integration (Damoah & Adu, 2019). Teachers often struggle with large class sizes, limited instructional time, and inadequate support, making it difficult to incorporate EE into various subjects effectively. This situation is mirrored in many countries, where environmental literacy, although recognized as important, is often marginalized due to practical constraints.

In Bangladesh, the challenges of integrating EE are multifaceted. Teachers frequently encounter barriers such as inadequate training, limited resources, and a lack of

administrative support. Gugssa (2024) highlights that logistical issues—such as large class sizes, safety concerns, budgetary constraints, and shortages of materials—hinder outdoor experiential learning, which is critical for effective environmental education. Additionally, attitudinal barriers, including teachers' lack of confidence and students' disinterest, further restrict the integration of EE at the pre-primary level.

Cultural beliefs and socio-economic conditions in Bangladesh exacerbate these challenges. Uddin (2023) points out that traditional mind-sets that view natural resources primarily as tools for human use contribute to environmental neglect. Furthermore, the lack of specific EE policies and the absence of policy coordination between the environmental and educational sectors result in a fragmented approach to EE integration. Institutional weaknesses, such as a lack of teaching equipment, funding, and special training for teachers, along with the absence of environmentally friendly practices within educational institutions, pose significant barriers to achieving sustainable development goals in Bangladesh.

2.5. Curriculum Development and Policy Implications

The integration of Environmental Education (EE) into pre-primary curricula is widely acknowledged as a crucial step toward building environmental awareness and instilling pro-environmental attitudes in young learners. However, the implementation of EE varies significantly across different countries and educational systems, reflecting diverse curricular and policy approaches. For example, Derman and Gurbuz (2018) conducted a comparative study analyzing the curricula of countries like Turkey, Australia, Singapore, Ireland, and Canada, revealing notable differences in the focus and coverage of environmental topics. In Turkey, the curriculum in the fields of chemistry and biology strongly emphasizes biodiversity and the ozone layer.

However, primary education lacks comprehensive objectives across all environmental subcategories. Australia, on the other hand, includes unique objectives related to identifying environmental issues and research questions. Canada stands out for its systematic inclusion of environmental topics, covering all environmental issues comprehensively. Despite these efforts, practical environmental activities remain limited in all of these countries. This highlights the need for enhanced teacher qualifications and multidisciplinary teaching approaches to effectively deliver environmental education (Derman & Gurbuz, 2018).

In Bangladesh, the government has recognized the importance of environmental education, integrating it into its policies and curricular frameworks. The 15th Amendment (Article 18A) of the Bangladeshi constitution, enacted in 2011, explicitly addresses biodiversity, environmental development, and conservation. Similarly, the National Education Policy (EP) 2010 emphasizes EE's role in equipping students to address natural disasters and global warming, marking the integration of EE into the pre-primary school curriculum (Uddin, 2023). Policies like the National Environment Policy (NEP) 2018 and amendments to the Environmental Protection Act, which aim to promote environmental awareness and sustainable practices, further emphasize Bangladesh's focus on sustainable development.

The National Curriculum and Textbook Board (NCTB) in Bangladesh has developed a pre-primary curriculum that prioritizes environmental awareness from an early age. This curriculum includes a dedicated learning area on environmental education, teaching children to respect and responsibly interact with nature and wildlife. The curriculum incorporates topics like environmental elements, pollution, conservation, and climate change, emphasizing the significance of adaptive strategies to tackle

environmental challenges (NCTB, 2024). The National Curriculum 2012 further incorporates EE, reflecting its significance at various educational levels from pre-primary to higher education.

Despite these policy initiatives and curricular reforms, Bangladesh faces challenges in effectively integrating EE into classroom practices. There are gaps in policy implementation, limited awareness among the youth, and an inadequate inclusion of comprehensive environmental topics in school textbooks. Textbooks on environmental education in Bangladesh fall under the 'General Science' and 'Social Science' categories and primarily focus on physical geography, such as soil, air, and water, as well as issues like pollution and natural disasters. However, they inadequately address critical concerns like resource depletion, biodiversity loss, and climate change. Khan (2014) describes the curriculum as "highly centralized, non-participatory, non-transparent, and bureaucratic" in its planning and administration, making it challenging to reorient towards an Education for Sustainable Development (ESD) model.

To address these challenges, the curriculum was revised in 2013 to include ESD content in various subjects such as Primary Science, English, Bengali, Mathematics, Religion and Moral Studies, and Bangladesh and Global studies. Despite these efforts, the concept of sustainable development has yet to be fully integrated into the textbooks, indicating a need for curriculum review and restructuring. Researchers argue for expanding environmental content across educational levels and developing a standardized, adaptable EE curriculum. Additionally, Khan (2014) identifies teacher training as a critical factor in delivering effective EE. Chowdhury (2014) further suggests that revising the national curriculum to incorporate EE more

comprehensively, alongside better-organized textbooks covering a broader range of environmental topics, is necessary for advancing EE.

Incorporating EE into pre-primary education entails more than just curriculum content; it also necessitates adopting appropriate teaching methodologies to effectively address environmental issues. The current curriculum development process demonstrates a multidisciplinary approach to EE integration, but it remains constrained by traditional disciplinary boundaries and pedagogical techniques. Curriculum developers and textbook authors often adhere to a narrow conception of general education, overlooking the broader requirements of ESD. This limitation is particularly evident in the insufficient coverage of essential topics like climate change—a pressing concern for Bangladesh, given its susceptibility to natural disasters, such as floods, cyclones, and rising sea levels. This gap highlights a disconnect between policy initiatives, such as the National Adaptation Programme of Action (NAPA) and the Bangladesh Climate Change Strategy and Action Plan (BCCSAP), and their implementation in school curricula (Chowdhury, 2014).

Advancing EE in Bangladesh necessitates a comprehensive approach that includes enhancing teacher qualifications, adopting innovative teaching methods, and aligning classroom practices with national sustainability goals. It also entails re-evaluating curriculum content to ensure that educators are equipped to effectively address environmental challenges. A balanced approach that integrates theoretical knowledge with practical applications is crucial for developing students' understanding of sustainability and environmental stewardship. As Türkoğlu (2019) indicates, while interest and theoretical knowledge of EE among educators are growing, further

training and curriculum adjustments are essential to facilitate the integration of sustainability into teaching practices.

In summary, curriculum development and policy in Bangladesh demonstrate a recognition of the importance of EE, especially in pre-primary education. However, to achieve effective integration, there is a need for curriculum revisions, increased teacher training, and practical implementation strategies that bridge the gap between policy and classroom practices. This study on teachers' perceptions aims to identify the key factors that hinder effective EE integration in pre-primary classrooms and contribute to the formulation of more effective policies and curricular strategies that support sustainable development.

Integrating environmental education in pre-primary classrooms is crucial for cultivating environmentally conscious citizens. However, challenges like inadequate teacher training, logistical barriers, and limited curricula hinder its success. Addressing these through policy reforms, resource support, and tailored teacher education is essential for fostering sustainable development.

CHAPTER III: METHODOLOGY

3.1. Research Approach and Design

The research approach for this study was Qualitative. Qualitative research aims to explore the complexities of phenomena by focusing on their nature and characteristics from different perspectives. This approach was particularly effective in capturing complex human behaviours and patterns that were challenging to measure, such as emotions, perspectives, and actions. It allowed participants to express their thoughts and feelings directly, providing deep insights into complex issues (Tenny et al., 2022).

For this research, the qualitative approach was ideal for exploring the nuances of teachers' perceptions of integrating environmental education into pre-primary classroom practices. It enabled a comprehensive comprehension of teachers' attitudes, experiences, and the contextual circumstances that impacted their teaching practices.

3.2. Research Participants

The population of this research consisted of teachers who were currently teaching in pre-primary classes in government schools.

3.3. Research Site

The research site was two government pre-primary schools in Uttara, Dhaka city.

3.4. Participant Selection Procedure

This qualitative study involved four participants: two pre-primary class teachers (one from School 1 and one from School 2) and two head teachers from the same government schools. In-depth interviews (IDIs) were conducted with each of these participants. Additionally, two classrooms from these government pre-primary schools were observed over at least two days, resulting in a total of four observations. The observations focused on the same teachers to ensure consistent and comprehensive data collection.

For this research, purposive sampling was particularly suitable. Purposive sampling is a technique commonly employed in qualitative research, wherein participants are chosen based on specific attributes or experiences pertinent to the study inquiry (Abbas, 2023). The selection of experienced teachers in environmental education for pre-primary classrooms ensured relevant data collection, addressing research objectives and exploring teachers' perceptions and implementations at this learning stage.

3.5. Data Collection Method

The research utilized qualitative methods to collect data through In-depth Interviews (IDI) and semi-structured Classroom Observations. The methods included:

1. Tool Validation: Guidelines for IDI and observation checklists were developed and reviewed by experts in the ECD faculty and supervisors. These instruments were piloted in government schools to ensure validity.

2. Demographic Data Collection: A socio-demographic form was used to gather information about age, gender, education level, teaching experience, working conditions, and training of pre-primary teachers.

3. In-Depth Interviews (IDIs) for Assessing Teachers' Perceptions on Environmental Education: In-depth interviews (IDIs) were conducted to assess teachers' knowledge, practices, and challenges regarding environmental education (EE). Each interview lasted between 40 to 50 minutes, and all conversations were thoroughly recorded for accuracy.

4. Observational Data: A semi-structured classroom observation checklist was employed to record interactions related to environmental education (EE) in pre-primary classrooms. Each observation session lasted approximately 150 minutes, or two and a half hours.

5. Data Collection: With the necessary permissions and consent, in-depth interviews (IDIs) and classroom observations were scheduled and conducted at various schools. Field notes were recorded during the interviews and observations to capture both descriptive and reflective insights.

3.6. Data Analysis

Qualitative data analysis typically involved five crucial steps to ensure comprehensive and reliable research (Bingham, 2023). Step 1: The data that had been gathered was

converted into written form and organized based on the many techniques employed in the research, such as conducting detailed interviews (IDIs) and making observations. Step 2: The classified data and field notes were thoroughly examined on multiple occasions. Throughout this procedure, the researcher emphasized data that directly corresponded to the research questions. Step 3: The researcher analyzed the data to uncover various themes and issues that arose. Step 4: During the process of selecting themes and sub-themes, the researcher combined their own thoughts and ideas with the significance of the data to the study problem. These interpretations were then documented separately. Step 5: The researcher summarized the key findings for each theme and included direct citations from the data. Some descriptions were taken from the observation notes, as well as some quotes from the interview transcripts. Citations related to the discussed subjects supported additional material.

3.7. Validity & Reliability of the Research Tool

To ensure the validity and precision of the research, the IDI guideline and observation checklist underwent a thorough review by the thesis supervisor and members of the BRAC IED Academic Committee. The study utilized two different research methodologies: In-Depth Interviews (IDI) and classroom observations. These methods were specifically designed to gather comprehensive insights by actively involving respondents in different types of interactions. The research instruments were improved and completed using the feedback received from the pilot testing. To ensure the study's reliability, data were recorded with great attention to detail, and field notes were transcribed promptly, guaranteeing accurate and timely documentation of the research findings.

3.8. Ethical Issues

The research adhered to rigorous ethical standards, with approval from the BRAC Institute of Educational Development, BRAC University. Participation was entirely voluntary, ensuring no coercion. Participants' rights, dignity, and autonomy were fully respected and protected. Informed consent was obtained before data collection, guaranteeing participants were fully informed about the research procedures, purposes, and data storage. The study avoided any physical, psychological, legal, or social harm. Participants had the right to withdraw at any time, and their personal information was kept strictly confidential.

3.9 Limitations

1. Limited Scope: The study was conducted in two government pre-primary schools in Uttara, Dhaka city. This small and localized sample restricts the generalizability of the findings to other regions and school types in Bangladesh.

2. Short Observation Period: Classroom observations were conducted over a brief period, which may not provide a comprehensive picture of teachers' environmental education practices throughout the academic year.

3. Focus on Teachers Only: The research primarily explored teachers' perceptions without directly engaging parents or community members, limiting insights into external influences on environmental education in pre-primary settings.

4. Qualitative Approach: The use of a qualitative research design offers in-depth insights but may not capture the full range of factors affecting the integration of environmental education, which could vary in different contexts or with a larger sample size.

5. Lack of Longitudinal Data: The study did not track changes in teachers' perceptions and practices over time, missing potential developments resulting from ongoing training, policy changes, or curriculum updates.

Chapter IV: Results/Findings & Discussion

Results

This chapter is divided into two sections. The first section discusses the responses and findings from in-depth interviews (IDIs) and classroom observations conducted in two schools. The aim of this chapter is to provide an overview of teachers' perceptions regarding the integration of Environmental Education into Pre-Primary classroom teaching practices.

In the following section, the collected data will be thoroughly analyzed, considering the participants' responses, insights from classroom observations, and the researcher's reflections. The chapter will conclude with a summary of the findings, along with recommendations based on the data and insights gained from the study.

Demographic Information

Four respondents participated in the data collection, comprising two head teachers and two class teachers from pre-primary classrooms in Dhaka city. The class teachers, aged 30-35, and the head teachers, aged 50-55, are all women. Both head teachers hold Master's degrees and MEd qualifications. Among the class teachers, one has a Master's degree and BEd, while the other holds degree certificates. The teaching experience of these educators ranges from five to thirty years. Two classroom observations were conducted with students aged 4.5-5 years. The teacher-student ratios were 1:40 and 1:45, respectively.

Findings

This section delves into the primary findings of the study, with a particular focus on the insights gained from in-depth interviews (IDIs) and classroom observations. The data from the four IDIs and two classroom observations were synthesized and analyzed, emphasizing the main research questions. The research findings are presented in the following paragraphs, organized under various themes and subthemes.

Theme 1: Teachers' Knowledge/Understanding of the Integration of Environmental Education in Pre-Primary Classroom Teaching Practices

This theme explores the knowledge and understanding that teachers possess regarding the integration of environmental education in pre-primary classroom teaching practices. The study aims to uncover how teachers perceive environmental education, how they incorporate it into their daily classroom activities, and the role their knowledge plays in this integration. Through in-depth interviews and observations, this theme delves into various sub-themes, including teachers' understanding of environmental education, the challenges they face, and the impact of training on their teaching practices. It also discusses the influence of the National Curriculum and Textbook Board (NCTB) guidelines in shaping pre-primary environmental education. These findings offer insights into the practical and conceptual foundations of environmental education in pre-primary settings.

Sub Theme 1.1: Knowledge about environmental education

All participants recognized that environmental education is a comprehensive concept that extends beyond the traditional classroom setting, involving various environments in which students learn and grow. They emphasized that environmental education

plays a critical role in helping students understand the complex relationships between humans and their natural surroundings. One participant described it as:
"*Environmental education encompasses everything around us—whether it's inside the classroom, outside the classroom, or even at home. It includes all aspects of our surroundings. From birth, a child learns in the home environment, gaining knowledge from parents and relatives. As the child grows, they learn outside the home environment, and eventually, in school, they are introduced to a new environment where they interact with classmates, plants, animals, and the broader ecosystem, learning through reading and observation*." (IDI# School 1, Head Teacher, 15-07-2024).

Another participant highlighted the experiential nature of environmental education, focusing on outdoor activities that help students explore and understand natural elements, pollution, and the environment's role in their lives:"*Our environment includes plants, air, soil, people, and animals around us. It's crucial to make children aware of different types of pollution and natural elements like plants, the sun, and water. By taking them outdoors to learn about animals, plants, and pollution, and encouraging them to explore by observing insects and identifying them, we enhance their thinking skills and imagination*." (IDI# School 1, Teacher, 11-07-2024).

However, one participant pointed out the challenges faced in providing environmental education due to a lack of resources and adequate facilities. They expressed concerns about the difficulty of conducting outdoor activities and fully incorporating environmental education within the classroom setting:
"*Environmental education can take place both inside and outside the classroom, but we lack the necessary infrastructure. With 40 students in my class and no assistant,*

it's difficult to manage outdoor teaching. We don't have a field or playground, yet I believe outdoor education is crucial. Students enjoy outdoor activities more, but it's challenging to bring the environment into the classroom. Environmental education isn't just about plants—it's about everything around us." (IDI# School 2, Teacher, 10-07-2024).

Another participant focused on the importance of the school environment, extending environmental education to include the cleanliness and safety of the classroom, as well as the broader social and familial contexts that influence students' development: *"For me, environmental education is school-centric, including the classroom environment and even places like the washroom, which is particularly important in pre-primary education. It also involves how students maintain cleanliness; interact with classmates, and how teachers create a safe learning space. The environment also includes students' family backgrounds and what they learn at home. Our school has undergone changes, with trees and gardens replaced by high-rise buildings, altering the environment. Environmental education includes understanding our surroundings, and behaviours, and distinguishing between right and wrong."* (IDI# School 2, Head Teacher, 16-07-2024).

In both Classroom Observation revealed (School #1, 14/07/24, and School #2, 16/07/24), teachers demonstrated a basic understanding of environmental education, incorporating discussions on plants, water, and ecosystems through storytelling. Classrooms were adorned with posters promoting environmental awareness, reinforcing these topics during lessons. However, the practical application of this knowledge was limited, as no hands-on activities or outdoor play were observed. Although the use of recycled materials, such as plastic bottles for planting, was mentioned in both schools, these plans were not implemented during the observed

lessons. The teaching relied heavily on routine storytelling, lacking practical demonstrations of environmental concepts, with no outdoor activities to further engage students.

Sub theme: 1.2: Integration of environmental education in pre-primary classrooms

All participants emphasized the significant importance of introducing environmental education at the pre-primary level. They unanimously agreed that early childhood is a crucial period for instilling environmental awareness, as what is learned during this time tends to have a lasting impact. The integration of environmental education is seen as essential for fostering a deep connection with the environment and promoting responsible behavior from an early age. One participant emphasized:

"Pre-primary children usually come to us at the age of five. This age is most suitable for learning. What is learned during this period is permanent for them. Since we are inextricably linked with the environment, without environmental education the survival of the environment is not possible. So environmental education is most needed." (IDI# School 1, Head Teacher, 15-07-2024).

Another participant highlighted the importance of environmental education for developing good citizenship and environmental responsibility:

"If you want to be a good citizen, you need to know about the environment and environmental pollution; you need to be aware of it. If right from childhood is taught about the environment, good and bad for the country, for the planet, then this age is actually the right time to teach them. Children learn discipline from their surroundings. They learn which one is good for the environment, which one is good for us." (IDI# School 1, Teacher, 11-07-2024).

A third participant stressed the role of both schools and parents in providing environmental education, highlighting the importance of real-life experiences with the environment:

"Environmental awareness is very important from an early age. They stay at school for two and a half hours, but they spend much more time at home with their parents. Parents also have a great responsibility to give environmental education to their children. It is very necessary to take the children to the outside world and introduce the children to that environment. Environmental education is very important, it is important to give them environmental concepts." (IDI# School 2, Teacher, 10-07-2024).

Finally, another participant underscored the role of environmental education in teaching children how to interact with their surroundings responsibly:

"Children come to school not only to study, they are part of society, they learn about the environment around his society, understand the natural environment, learn how to behave in that environment, learn to protect the environment. Don't litter the classroom. Put waste in the designated place or bins, don't pick up dangerous things, and behave well with classmates." (IDI# School 2, Head Teacher, 16-07-2024).

Classroom Observation revealed that in School 1, environmental education was integrated into the classroom primarily through storytelling. Students learned about various animals, such as camels and sea divers, and their distinctive roles in different ecosystems. Multimedia tools, like videos displayed on mobile phones, were used to supplement the lessons, enhancing the students' understanding of the topics. However, the overall approach remained traditional, with students mostly copying lessons from the board, offering little opportunity for experiential or interactive learning (Classroom Observation: School#1, 14/07/24).

Similarly, in School 2, environmental education was conveyed through stories about plants, trees, and broader environmental concepts. Videos on mobile phones were used to illustrate natural phenomena, such as floods and earthquakes. Like School 1, the integration of environmental education remained limited to storytelling and routine class activities. The absence of hands-on learning, group activities, or outdoor exploration was evident, largely due to ongoing construction work at the school (Classroom Observation: School#2, 16/07/24).

Sub-theme: 1.3: Training in Environmental Education

Under the sub-theme "Training in Environmental Education," the responses from the participants varied in terms of their exposure to environmental education. While most participants indicated a lack of formal training, one participant did mention some relevant experience. The responses are summarized as follows:

Three participants explicitly stated that they had not received any formal training in environmental education. However, one participant provided a more detailed response, indicating some informal exposure to environmental education. This participant pointed out:

"I have not received formal training; however, I joined a workshop by an organization called Leads, from where I acquired some knowledge about the environment, such as how to recycle, reuse, and reduce. How to make something new by using a used item, or using a discarded item. I learned about how to make people aware of various elements of the environment and their protection. I have some training on how a student can learn about the environment, learn about harmful substances, know how to protect the soil, water, air, plants that are essential for us, and how to make others aware." (IDI# School 1, Head Teacher, 15-07-2)

Sub theme: 1.3.1 Implementation of Knowledge into Practice

These responses illustrate the variation in the implementation of Environmental Education practices, largely dependent on whether the educators had access to training or not.

Under the sub-theme "Implementation of Knowledge from Training into Practice," the responses from the four participants varied based on whether they had received environmental education training. One participant who had undergone training provided detailed examples of how they applied this knowledge in their teaching, while the other three, who had not received any training, reported that they could not apply such knowledge.

The participant who received training shared:

"I have applied the knowledge of that training in various ways, such as having students make doormats from old clothes, fans from chips packets, and secondary school students creating fans from discarded motors. Pre-primary school students draw pictures on large posters about various environmental hazards and protection, such as the problems of littering, the importance of not plucking branches, and the effects of cutting down trees. We also hold an art competition with these drawings. Additionally, to protect the environment, we show students various pictures, stories, and videos about stopping deforestation and ways to save trees. We teach them to use soil, water, and air properly; for example, turning off the faucet while soaping their hands and only turning it on again when necessary. We also emphasize the importance of turning off lights and fans when not needed and encourage them to remind others of this. The gas stove should not burn more than necessary, so they can warn their parents. In this way, we also educate the people around them"(IDI# School 1, Head Teacher, 15-07-2024).

The other three participants, lacking such training, indicated they could not implement any related practices:

"*As not received any training so no scope of applying that knowledge"* (IDI# School 1, Teacher, 11-07-2024).

"No training, so no knowledge from training" (IDI# School 2, Teacher, 10-07-2024).

"No training, so not applicable" (IDI# School 2, Head Teacher, 16-07-2024).

This contrast between the responses underscores the significant role that training plays in enabling teachers to put environmental education into practice. The trained participant described specific activities they had implemented, whereas the untrained participants indicated they had no opportunities to apply such knowledge.

Sub-theme: 1.4: Implementation of NCTB Pre-primary Curriculum in the Classroom

All the participants acknowledged the importance of adhering to the NCTB pre-primary curriculum, though their approaches to implementation varied. Most participants reported that they actively incorporate interactive and practical activities to engage children and enhance their learning experiences. For instance, one participant explained:

"Our school follows the NCTB pre-primary curriculum, with a routine that includes both indoor and outdoor play. Children engage in activities like reciting rhymes, exploring classroom corners (sand, water, clay), and collecting leaves and pebbles. We emphasize hygiene, such as washing hands before and after meals, and promote healthy eating by discussing nutritious foods. Additionally, we teach them about plants, animals, inanimate objects, and proper use of classroom resources like lights and fans." (IDI#School 1, Head Teacher, 15-07-2024).

Another participant shared a similar view, highlighting the use of interactive methods to implement the curriculum:

"At our school, we implement the NCTB pre-primary curriculum by using interactive methods like storytelling and creative activities. Students learn about plants, animals, and the environment by observing nature and making crafts from leaves and other materials. They explore concepts like day and night, seasons, and disaster safety through visual aids and books. We also emphasize the importance of respecting living things, teaching children that harming plants and trees causes them pain."

*(*IDI#School 1, Teacher, 11-07-2024).

However, some participants also mentioned challenges or variations in their approach. For example, one participant shared:

"In our school, we adhere to the NCTB pre-primary curriculum, which teaches students to recognize differences between living beings, understand right from wrong, and practice polite greetings. It also emphasizes cleanliness and environmental care by avoiding unnecessary tree cutting, planting trees, and keeping the surroundings tidy, along with the importance of not wasting water." (IDI#School 2, Head Teacher, 16-07-2024).

While another participant admitted to a less rigorous familiarity with the curriculum, indicating a more flexible approach:

"I mainly teach the syllabus content, though I'm not deeply familiar with the NCTB pre-primary curriculum. When teaching concepts like earthquakes, I often use stories to help students understand. I also incorporate visual aids, like showing images or videos on a mobile phone, to explain environmental phenomena. For example, I'll demonstrate sunshine, rain, or shadows practically to make the learning experience more relatable for the children." (IDI#School 2, Teacher, 10-07-2024).

During the observation in School 1, it was noted that the lesson plan closely adhered to the NCTB pre-primary curriculum, with environmental topics such as natural disasters and animal adaptations integrated into the teaching. Storytelling and mobile videos were utilized to convey these concepts effectively. However, the practical implementation of the curriculum was limited. There was a noticeable absence of outdoor activities or group work, which are key components emphasized by the curriculum for fostering a deeper understanding of environmental concepts. (Classroom Observation: School #1 Date: 14/07/2024).

Similarly in School 2, the NCTB pre-primary curriculum was followed in theory, with environmental education topics like the importance of plants and water being included in the lessons. However, similar to School 1, the execution remained confined largely to storytelling, with minimal interactive or hands-on approaches. Due to ongoing construction work, no outdoor activities were conducted, which significantly limited the scope of environmental education. As a result, experiential learning opportunities were reduced, restricting students' engagement with the natural world beyond the classroom setting. (Classroom Observation: School#2, Date: 16/07/24).

Sub-theme:1.5: Role of Environmental Education in Achieving the Learning Competencies

All participants expressed a consensus that integrating environmental education into pre-primary schooling significantly enhances various learning skills. They emphasized that early exposure to environmental concepts through practical, hands-on experiences fosters not only environmental stewardship but also critical thinking and problem-solving abilities.

One participant explained:

"True education is what students learn through hands-on activities and can apply in their lives later on. From pre-primary education, students are being taught how to protect the environment, care for trees, plant new ones, and safeguard natural elements like soil and water. They also learn about the sustainable use of resources such as electricity, water, and gas to minimize negative environmental impact. Through these lessons, students are not only acquiring knowledge but also developing lifelong habits that help sustain and protect the environment." (IDI#School 1, Head Teacher, 15-07-2024)

A similar view was shared by another participant, who stated:

"Environmental education positively impacts learning competencies in pre-primary education by enhancing understanding and observational skills. It helps students develop cause-and-effect reasoning, such as understanding that placing a hand on fire will result in a burn." (IDI#School 1, Teacher, 11-07-2024)

From another school, participants also acknowledged the importance of environmental education in shaping foundational learning experiences:

"Absolutely, it has a significant impact. Pre-primary education is the starting point for a child's learning experience. It's here that children first begin to understand their environment, gaining insights into what exists around them. They learn the importance of not wasting natural resources and the need for their conservation. This foundational understanding is nurtured from the very beginning in pre-primary education." (IDI#School 2, Head Teacher, 16-07-2024)

Reinforcing this perspective, another participant added:

"Definitely makes an impact. They gain a strong understanding of their surroundings and learn how to respond to various situations, such as rain, earthquakes, floods, and other natural disasters. By participating in activities like the earthquake simulation

game, they learn practical steps to take during a real earthquake. They also become familiar with the appropriate actions to take when facing a storm." (IDI#School 2, Teacher, 10-07-2024)

During classroom observations at both School 1 and School 2, students demonstrated a solid understanding of environmental issues through storytelling sessions, particularly when learning about animals, ecosystems, and the importance of plants. Teachers integrated moral lessons on environmental stewardship, such as conserving water and avoiding littering, which resonated with the students.

However, in both schools, the reliance on verbal learning and storytelling limited the development of critical thinking and problem-solving skills. There was little evidence of group projects or interactive activities that could have enhanced students' environmental competencies, as discussions remained largely verbal without hands-on or collaborative tasks.

Sub theme: 1.6: Environmental Education in the Teachers' Guide

Based on the responses provided by the participants regarding the inclusion of environmental education in the teacher's guide for pre-primary teachers, it is evident that the guide plays a significant role in their teaching practices. All participants were aware of the environmental education component in the guide, and their experiences indicate that it is both a resource for instructional planning and a tool for enhancing their own understanding.

One participant expressed that while they hadn't read the guide entirely, they found it useful as a framework to instruct pre-primary teachers to fully engage with the material to understand and apply it effectively:

"It would be inaccurate to say I have read the entire guide; I have only read parts of it. However, pre-primary teachers are directed to strictly follow the guidelines outlined

in the Teacher's Guide. They are encouraged to read it thoroughly to gain a full understanding and apply its instructions effectively in their teaching." (IDI#School 1, Head Teacher, 15-07-2024).

One participant from School 1 (IDI# 11-07-2024, Teacher) emphasized how the guide provided practical benefits, particularly in making teaching easier. They appreciated that the guide offered clear teaching steps, which not only allowed them to follow the process effortlessly but also helped them enhance their own knowledge while teaching the children.

In School 2, a Head Teacher (IDI# 16-07-2024) pointed out the dual impact of the guide. Besides assisting in teaching the children, the guide also helped the teachers become more environmentally aware, highlighting its role in improving both student education and teacher development.

Another teacher from School 2 (IDI# 10-07-2024) described how the guide was full of games and activities that made learning enjoyable for the children. They found that these resources not only kept the students engaged but also made the teaching process more manageable and enjoyable for the teachers.

In Classroom Observation at School #1 (11/07/24), the teacher partially followed the environmental education guidelines, primarily using storytelling to convey environmental topics. However, there was a lack of structured hands-on activities and outdoor lessons, which are recommended in the guide.

At School #2 (10/07/24), the teacher was aware of the guidelines but did not fully implement them, sticking mostly to traditional teaching methods. Innovative

strategies like outdoor activities and collaborative learning, suggested in the guide, were minimally incorporated.

The findings indicate that while teachers recognize the importance of environmental education, its integration into pre-primary classrooms is inconsistent, primarily due to a lack of resources, infrastructure, and formal training. Both schools had lesson plans that included environmental topics, but hands-on activities and outdoor learning were seldom observed. Teachers relied on traditional teaching methods and storytelling to convey environmental concepts, with some use of multimedia. The study underscores the need for formal training in environmental education and better infrastructure to facilitate outdoor learning experiences. Moreover, the role of the NCTB curriculum and teachers' guide was recognized but underutilized in daily classroom practices.

Theme 2: Teaching practice of Environmental Education in the pre-primary classroom

This research aimed to explore how environmental education is implemented in pre-primary classrooms, focusing on teachers' perceptions and their classroom practices. Through in-depth interviews (IDIs) with teachers and classroom observations, the study identified various methods, materials, and strategies employed by teachers to integrate environmental education into their lessons. The findings under this theme are divided into three sub-themes: the implementation of environmental education, the involvement of students in environmental activities, and parental involvement in environmental education. The observations provided a comprehensive view of how environmental education is practiced in two schools (School 1 and School 2), noting both the strengths and the challenges faced by teachers in delivering this crucial subject.

Sub Theme 2.1: Implementation of Environmental Education in Classroom Teaching

The participants shared various methods and activities they use to teach environmental education. These activities ranged from outdoor explorations to in-class projects, focusing on making students aware of environmental issues and instilling values of environmental protection.

One head teacher explained:

"At our school, teachers often take students outside to explore nature, teaching them about plants, birds, and weather patterns like rain and heat. They discuss the effects of extreme weather, such as storms and cyclones, and how to stay safe. Lessons on hygiene focus on proper hand washing before and after meals, keeping tiffin boxes clean, and wearing tidy clothes. Parents are advised to pack healthy food for tiffin time. In the classroom, students learn about their surroundings—both living and non-living—through stories, pictures, and role-play, while outside, they learn the importance of protecting trees and the environment." (IDI# School 1, Head Teacher, 15-07-2024)

Another participant highlighted the use of creative activities to engage students in environmental topics:

"In the 'Charu Karu' class, students draw flowers, fruits, animals, and birds. To make the class more engaging, encourage them to bring vegetables like potatoes and lady's fingers for vegetable stamping art. Through fun activities, teach them not to litter or spit and to keep the classroom and surroundings clean by throwing waste in bins. Emphasize avoiding packaged foods and encourage parents to provide healthy meals. Share stories about animals to foster kindness towards them and discuss the

importance of personal hygiene. Students also participate in projects like seed germination (IDI# School 1, Teacher, 11-07-2024)”

However, some participants also expressed challenges they face in maintaining environmental education, especially when external conditions contradict what is taught in the classroom:

"Every day, students recite a 'Nitibakko' about environmental protection during assembly, highlighting the global pollution issue. Despite teaching children about cleanliness and proper waste disposal, the city remains dirty due to poor garbage management, with no segregation of wet and dry waste. Filth is widespread, and students are influenced by seeing others, including their families, littering. This contradiction undermines the lessons they learn in school." (IDI# School 2, Head Teacher, 16-07-2024)

Finally, the use of recycled materials and hands-on activities was emphasized by another teacher:

"I work with students to create items from recycled products, like plastic bottles and packets, and do origami (flowers, frogs, etc.). I also teach them about environmental protection through storytelling, personal experiences, and multimedia presentations." (IDI# School 2, Teacher, 10-07-2024)

During the classroom observations, both schools demonstrated efforts to incorporate environmental education through visual displays such as posters, charts, and recycled materials. At School 1, environmentally-themed artwork and story-based lessons were prominent, though hands-on activities like planting seeds, which were highlighted in interviews, were not observed during the session (Classroom observation: School#1, 14-07-2024). Teachers relied mainly on traditional teaching methods, with limited use of interactive or innovative approaches.

Similarly, at School 2, the classroom included environmental posters, and students were engaged in storytelling sessions focused on environmental issues. However, practical activities such as using recycled materials and outdoor learning were not fully integrated due to construction on the school grounds (Classroom observation: School#2, 16-07-2024). Despite both schools' efforts to visually emphasize environmental education, innovative and practical activities were not fully realized.

Sub Theme 2.1.1: Activities or Lessons on Environmental Education

When asked about teaching practices of environmental education in pre-primary classrooms, participants provided various examples of activities and lessons aimed at instilling environmental awareness among students.

One head teacher shared, "*We discuss living things and inanimate objects with students, teaching them how to behave with animals and plants through stories. Teachers take students outside to observe nature, explaining environmental phenomena like rain and extreme heat. We also discuss the school closure due to extreme heat and a recent deadly storm, including safety during cyclones. During tiffin time, we monitor students' eating habits, hygiene, nutrition, and cleanliness, and convey lessons on these topics through storytelling* (IDI#School 1, Head Teacher, 15-07-2024)."

A teacher from the same school elaborated on morning sessions, saying, "*Students learn about different seasons, their features, and related activities. We also discuss natural disasters and safety measures, sometimes through student-performed dramas. Outdoor activities include identifying trees and teaching that trees and animals are our friends. Hygiene and cleanliness are emphasized, such as washing hands before and after meals. To make classroom cleanliness fun, we sing the song 'kagojer tukro,*

kagojer tukro, pore ase oi.' Additionally, students are taught to conserve water while washing hands and not to pluck flowers or leaves to protect the environment (IDI#School 1, Teacher, 11-07-2024)."

Another head teacher described activities that encourage cleanliness and learning about seasons. "*The teacher encourages classroom cleanliness by asking students to look around, pick up any dirt, and dispose of it in the bin. Flip charts are used to teach students about seasons and natural disasters* (IDI#School 2, Head Teacher, 16-07-2024)."

A teacher from School 2 added, "*We are exploring the concept of day and night through an engaging story or utilizing a candle and a ball. We also delve into various types of disasters and how to handle them, and understand the distinction between living and non-living things through the use of models and actual objects*."(IDI#School 2, Teacher, 10-07-2024)

In both School 1 and School 2, classroom observations revealed a gap between planned activities and those that were actually implemented. At School 1, teachers emphasized environmental topics through storytelling, such as using the story "Ajob Juto" to explain natural phenomena like deserts, storms, and polar regions. While teachers had mentioned incorporating hands-on activities like using recycled materials for seed planting, these were not observed during classroom visits. Instead, the focus remained on verbal instruction and multimedia tools to convey environmental concepts, without much practical engagement. This reliance on storytelling limited the experiential aspect of environmental education(Classroom observation #1, 14-07-24) .

Similarly, in School 2, lessons on environmental issues were mainly delivered through mobile videos and interactive discussions. Teachers had planned to engage students in more practical activities, such as seed planting, to deepen their understanding of plants, water, and oxygen. However, these hands-on activities were not executed as observed in the classroom sessions. The teaching in School 2, like in School 1, was largely centered on verbal communication and multimedia resources, which, while informative, fell short of providing the interactive experiences necessary for fostering deeper environmental awareness (Classroom observation#2, 16-07-24).

Sub Theme 2.1.2: Learning Materials Used in Implementing Environmental Education

When it comes to implementing environmental education in pre-primary classrooms, the teachers emphasized the use of both practical and easily accessible materials. For example, one head teacher highlighted the use of natural surroundings and role-playing for disaster preparedness:

"*Children play with toys like swings and slides while exploring nature in a field, learning about trees, leaves, and their surroundings. Environmental lessons can be taught using simple materials, with students role-playing to show what to do during natural disasters. Storytelling and multimedia help explain disaster preparedness and prevention*." (IDI#School 1, Head Teacher, 15-07-2024)

Another teacher mentioned the use of a wide variety of materials, both traditional and multimedia, for environmental education:

"*I utilize a variety of practical materials, including sheets, sticks, images, flip charts, storybooks, color pencils, multimedia resources, and PowerPoint presentations*." (IDI#School 1, Teacher, 11-07-2024)

Similarly, a head teacher from school 2 emphasized the importance of using waste management and germination activities as part of the environmental education practice:

"*A dustbin is provided in the classroom for the proper disposal of waste. Additionally, students can plant seeds in used bottles to observe the process of germination. We also utilize flip charts, models, and storybooks as part of our educational resources."* (IDI#School 2, Head Teacher, 16-07-2024)

One teacher emphasized the use of low-cost and readily available materials, including mobile technology, to support the teaching process:

"*I use educational materials such as calendars, flip charts, and images, as well as low-cost, readily available items like used bottles and boxes. I utilize my mobile device as a resource also.*" (IDI#School 2, Teacher, 10-07-2024)

Classroom observations revealed minimal use of physical learning materials, such as storybooks, flip charts, and models, in the implementation of environmental education. In School 1, while the teacher incorporated videos via a mobile device during storytelling sessions, there was no substantial engagement with physical materials or hands-on experiments. Furthermore, during the two-day observation period, students were not taken outside for any field-based learning activities (Classroom Observation #1, 11.07.24 & 14-07-24). Similarly, in School 2, although recycled materials and various models were present in the classroom, they were not actively utilized during lessons. Instead, mobile phones were used for storytelling, reflecting a reliance on digital media over tangible educational resources (Classroom Observation #2, 16-07-24).

Sub Theme 2.1.3: Suggestions about Materials Appropriate for Implementing Environmental Education

When asked about suggestions for materials appropriate for implementing environmental education, the participants shared a variety of ideas on how to enhance teaching practices in pre-primary classrooms using locally available resources and multimedia tools.

One of the head teachers mentioned that government grants allow schools to purchase local materials, which can be creatively used by teachers for environmental education. He emphasized the importance of using available resources effectively and highlighted the role of multimedia in enhancing learning:

"*We receive government grants to purchase local materials for primary classrooms. With creativity and sincere effort, teachers can provide effective environmental education using available resources. Additionally, proper use of multimedia through large projectors can enhance learning*." (IDI#School 1, Head Teacher, 15-07-2024)

A teacher from the same school discussed the use of specific materials such as flip charts, real objects, models, and multimedia. She also pointed out the need to avoid using chalk due to health concerns and suggested replacing it with whiteboards:

"*Using flip charts, real materials, models, multimedia, and suitable storybooks is beneficial. Chalk should be avoided due to health risks for children; whiteboards are a better alternative*." (IDI#School 1, Teacher, 11-07-2024)

Another head teacher suggested that the layout and space of the classroom could be optimized to allow for more environmental activities, such as incorporating areas for gravel, sand, and water play. She also emphasized the potential of indoor and outdoor games and the use of multimedia:

"*A separate, larger pre-primary classroom could allow for better use of space, with designated areas for activities like gravel, sand, and water play. Indoor and outdoor games could be expanded, and multimedia setups could be optimized*." (IDI#School 2, Head Teacher, 16-07-2024)

A teacher from School 2 shared her view on how multimedia projectors can make environmental lessons more engaging by incorporating videos, images, and models. However, she expressed concern that beneficial models, such as greenhouses or zoos, are rarely used due to the fear of potential damage by students:

"*Multimedia projectors make lessons more engaging by using videos, images, and models to enhance understanding. Although models like greenhouses or zoos are beneficial, they're rarely used in class due to fears of potential damage by students*." (IDI#School 2, Teacher, 10-07-2024)

During observation both school 1 & school 2 Teachers provided suggestions on improving environmental education with locally available materials. They highlighted the importance of using multimedia tools to engage students. Both schools used mobile phones to show videos on environmental topics, although more advanced multimedia setups were not available. Teachers also recommended incorporating more hands-on activities with recycled materials and ensuring parents encourage environmental lessons at home.

Sub Theme 2.2: Involvement of Students in Environmental Activities

All participants acknowledged that involving students in environmental activities, both inside and outside the classroom, is essential to developing their understanding of environmental education. Their responses highlighted different approaches, such as role-playing, exploration, and hands-on activities that foster an early sense of

environmental responsibility. Most of the teachers focused on practical ways to engage students with their immediate environment, even when outdoor access was limited due to school construction.

One head teacher emphasized the importance of simulating real-life environmental events and fostering awareness in the classroom by saying:"*In the classroom, we discuss natural disasters and guide students on how to respond, having them demonstrate through role-play. For example, we simulate a storm by using a fan. We also practice tasks like switching lights on and off or turning off faucets. Additionally, we take students outside to explore different types of plants*." (IDI#School 1, Head Teacher, 15-07-2024).

Another participant added, "*In class, we teach students to stay organized and responsible. They throw waste like leftover food, pencil shavings, and dirt into the bin, and tidy up toys after playtime. We encourage them not to waste water, turning off the faucet while soaping hands and after washing. They also turn off lights and fans when not in use. Occasionally, we take them to the open field to show and collect things like tree leaves, pebbles, etc*." (IDI# School 1, Teacher, 11-07-2024).

In schools where outdoor activities were restricted, educators adapted by creating indoor learning experiences related to environmental topics. As one head teacher pointed out:"*In the classroom, we engage in activities like hand washing, garbage disposal, and working with water, leaves, and sticks. Currently, there are no outdoor activities due to ongoing construction. When outside, apart from playing, we usually create things with leaves, collect and paint pebbles, and make various items."* (IDI#School 2, Head Teacher, 16-07-2024).

A teacher from the same school echoed the sentiment of improvisation due to construction limitations, stating:"*Our school is under construction, so we can't take students outside, and all activities are indoors. In our "charu Kala" class, we often work with clay, but it makes the classroom messy, so I asked the students to make things at home and bring them in. We also create projects by cutting paper in class. While teaching about safe water, I asked the students if they could drink water from a pond. We then did an activity to demonstrate polluted and clean water*." (IDI#School 2, Teacher, 10-07-2024).

Involving students in environmental activities was a key aspect observed in both schools. In School 1, students participated in projects such as storytelling and discussions on environmental concepts, such as the importance of proper waste disposal (Classroom observation #1, 14-07-24). Additionally, students were taught rhymes like "Kagojer Tukro," emphasizing cleanliness and the proper disposal of waste.

In School 2, storytelling sessions were interactive, with students discussing what plants need to grow and the benefits trees provide, such as oxygen and shade. However, due to ongoing construction, outdoor activities were not conducted during the observation period.

Sub Theme 2.3: Parental Involvement in Implementing Environmental Education

The participants unanimously emphasized the vital role that parents play in the successful implementation of environmental education in the pre-primary classroom. One head teacher stated, "*Environmental education is most effective when both schools and families collaborate. Since children spend much of their time at home,*

parents play a key role in supporting this learning. To ensure this, we hold monthly meetings with mothers to raise awareness, helping them teach their children about the environment. Their involvement is essential for the program's success (IDI#School 1, Head Teacher, 15-07-2024)."

Another teacher supported this view, explaining that during forums with mothers, key environmental and hygiene practices are discussed: "*A forum with mothers underscored the need to educate children about environmental and sanitary practices. Primary topics of conversation were hand hygiene practices before and after meals, as well as after using the restroom, water conservation, and plant protection. It was strongly recommended that parents adopt these habits in their households*" (IDI# School 1, Teacher, 11-07-2024).

A head teacher from school 2 highlighted the importance of regular communication with parents: "*Effective communication with parents is crucial. At parent meetings, we recommend that parents ensure their children are kept clean, give them nourishing meals, and educate them about environmental conservation*" (IDI#School 2, Head Teacher, 16-07-2024).

A teacher from the same school elaborated on the practical aspects discussed during parent meetings, stressing hygiene and nutrition: "*During monthly parent meetings, we communicate to parents the importance of keeping their children clean. This includes providing them with nutritious food, ensuring they wear clean clothes, and maintaining proper nail care. We aspire to ensure that their children arrive at class with a little sanitization, accompanied by a nourishing breakfast and a properly packed tiffin*" (IDI#School 2, Teacher, 10-07-2024).

The study's findings highlight the various methods teachers use to implement environmental education in pre-primary classrooms. While there is a consistent effort to teach students about the environment through storytelling, multimedia, and hands-on activities, some gaps remain, especially in the practical application of environmental projects such as seed planting. Both schools demonstrated creativity in using recycled materials and multimedia tools, though their potential was not fully realized in observed classes. Parental involvement also plays a significant role in reinforcing these lessons at home, making collaboration between schools and families essential for successful environmental education.

Theme 3: Challenges that the teachers face while implementing Environmental Education in the pre-primary classroom

This study focuses on identifying the challenges teachers face when integrating environmental education into their teaching practice in pre-primary classrooms, exploring how these challenges are addressed, and determining the support necessary to improve this integration. Data collection methods included interviews with teachers and classroom observations in two schools. The theme has been divided into three sub-themes to highlight the specific challenges and potential solutions.

Sub Theme 3.1: Challenges in Integrating Environmental Education

During the interviews, participants shared various challenges they face while incorporating environmental education in pre-primary classrooms. One major issue highlighted was inconsistent student attendance. The participants noted that many children do not attend school regularly, which creates gaps in their education, making it difficult to maintain continuity in environmental learning.

One head teacher explained:

"*Pre-primary children's attendance is inconsistent; some children do not attend school regularly, resulting in educational gaps. Additionally, the absence of multimedia resources and suitable materials poses challenges to effective teaching*." (IDI#School 1, Head Teacher, 15-07-2024).

Another participant emphasized the lack of engagement among children, often caused by a shortage of learning materials and multimedia resources. This issue, combined with irregular attendance, further hinders the smooth implementation of environmental education. A teacher stated:"*Children often face distractions and may show reluctance to engage in lessons, partly due to a shortage of suitable learning materials, models, and multimedia resources. Additionally, student attendance can be inconsistent*." (IDI#School 1, Teacher, 11-07-2024).

Classroom observations at School 1 and school 2 confirmed the lack of integration of multimedia and practical materials in the teaching process; teachers primarily used mobile phones to show videos and were following a traditional method of teaching (Classroom observation: School#1, 14-07-24, School#2, 10.07.24) .
Outdoor activities, an essential part of environmental education, are also disrupted by on-going construction work in some schools. This has made it increasingly difficult for teachers to organize outdoor learning activities, particularly in large classes. One teacher shared:"*The on-going construction work poses significant challenges for the execution of outdoor activities. With a class size of 40 students, the challenges associated with taking the children outside under the current conditions have significantly increased*." (IDI# School 2, Teacher, 10-07-2024).

Classroom observation also confirmed the infrastructural deficiencies, such as the lack of proper hygiene facilities. For instance, in some schools, there were no hand-washing systems and soap, which hindered efforts to teach hygiene-related environmental practices. This challenge was particularly noted at School 2, where construction work further restricted outdoor activities essential for environmental education (Classroom observation#2, 10.07.24 & 16-07-24).

These challenges highlight the complex issues teachers face while trying to integrate environmental education into the pre-primary curriculum, ranging from infrastructural limitations to inconsistent student participation.

Sub Theme 3.2: Overcoming the Challenges

To overcome these challenges, teachers expressed several strategies they implement in their classrooms. A recurring suggestion was the need for better provision of practical learning materials, models, and multimedia resources to enhance student engagement. One teacher mentioned that:"*When equipped with the necessary practical learning materials, models, and multimedia resources, children are more likely to engage attentively and grasp concepts more easily*." (IDI# School 1, Teacher, 11-07-2024)

The head teacher of School 1 highlighted the importance of fostering a welcoming and joyful environment to promote regular student attendance. She mentioned that: "*We are striving to foster a joyful and welcoming atmosphere at our school to encourage regular attendance among students. It would be beneficial if the government could provide materials aligned with the National Curriculum and Textbook Board (NCTB) standards to support our educational efforts*." (IDI#School 1, Head Teacher, 15-07-2024)

In another instance, a teacher from School 2 emphasized the need for a supportive assistant and a safe environment for outdoor learning activities:

"*If I have a supportive assistant and ensure the surrounding school environment is secure, with access to suitable learning materials, models, and multimedia, I can effectively overcome the challenges and take the children outside for activities*." (IDI#School 2, Teacher, 10-07-2024)

Lastly, ensuring the safety of the school environment and providing adequate supplies were also highlighted as vital for overcoming challenges:

"*Providing high-quality office supplies ensures a conducive learning environment. Ensuring the safety of the school and its students is paramount, alongside supplying suitable materials and multimedia resources for an enriching educational experience*." (IDI#School 2, Head Teacher, 16-07-2024)

Classroom observations in both School 1 and School 2 reinforced the need for better resources and infrastructural support. For example, although School 1 had storybooks related to environmental topics, teachers did not engage students with hands-on activities, such as planting seeds, despite the availability of recycled materials (Classroom observation#1, 14-07-24). Similarly, School 2 had prepared a plastic water bottle for planting but never followed through with the actual planting activity (Classroom observation#2, 16-07-24).

Sub Theme 3.3: Support Necessary in Integrating Environmental Education

To overcome the barriers to environmental education, comprehensive support systems are essential. Teachers highlighted the need for professional development and training tailored specifically to environmental education.

As one head teacher stated, "*Proper training in environmental education for all educators would yield significant advantages*" (IDI#School 1, Head Teacher, 15-07-2024).

Similarly, another teacher stressed the critical need for training programs tailored to teachers:"*Proper training in environmental education is essential for educators. With a clear understanding of the subject, teachers can deliver lessons clearly and engagingly. There is a significant need for comprehensive training programs for teachers to effectively educate students about environmental issues*." (IDI#School 1, Teacher, 11-07-2024).

The lack of training was evident in both schools, where teachers struggled to use innovative methods or incorporate critical thinking exercises in their lessons (Classroom observation#1, 14-07-24; Classroom observation#2, 16-07-24).

Besides training, support from the broader school community, including parents and school staff, was identified as another crucial factor. A head teacher from School 2 highlighted this need, explaining:"*We need comprehensive support from the school committee, parents, colleagues, and staff to effectively implement environmental education. Proper training in environmental education, preferably conducted in school, would allow everyone to participate and promote a unified approach*." (IDI#School 2, Head Teacher, 16-07-2024).

A teacher from School 2 raised concerns about classroom management, linking it to both teaching quality and class size:"*Managing a class of 40 students alone can be quite challenging. Having two teachers and one assistant in each class would significantly improve student teaching and management, creating a more conducive learning environment. Furthermore, all teachers and staff must receive environmental education training.*" (IDI#School 2, Teacher, 10-07-2024).

Lastly, ensuring proper infrastructure, such as safe outdoor spaces and basic facilities like hand-washing stations, was deemed essential. Without these, many of the hands-on, experiential learning activities that are key to environmental education could not be executed effectively (IDI#School 2, Head Teacher, 16-07-2024).

The study highlights several challenges teachers face when implementing environmental education in pre-primary classrooms, including inconsistent student attendance, a lack of resources and multimedia tools, and infrastructural deficiencies. However, by fostering a welcoming environment, improving access to practical materials, and providing comprehensive training and support, these challenges can be addressed. Observations across different schools corroborate the interview findings, emphasizing the need for better resources and infrastructural support to create a conducive environment for environmental education.

Discussion

This qualitative study explored pre-primary teachers' perceptions regarding integrating Environmental Education (EE) into their classroom teaching practices. The research aimed to understand how teachers incorporate environmental topics into their daily lessons and the challenges they encounter. Based on in-depth interviews with teachers and classroom observations in two government schools in Dhaka, the study identified themes related to teachers' knowledge, classroom practices, and barriers to EE implementation. This discussion expands on the key findings of each theme, linking them to existing literature and considering their implications for improving EE practices in early childhood education.

Theme 1: Teachers' Understanding of Environmental Education

This theme addresses teachers' understanding of environmental education, focusing on their knowledge, classroom application, and the impact of training. It also explores how the National Curriculum and Textbook Board (NCTB) guidelines shape environmental education at the pre-primary level. The findings suggest that while teachers have a basic understanding of EE, infrastructural and logistical challenges hinder its full integration.

Sub-Theme 1.1: Knowledge about Environmental Education

The teachers in the study demonstrated a fundamental understanding of environmental education, recognizing that it involves fostering students' awareness of their surroundings, including plants, animals, pollution, and other natural elements. As observed in both School 1 and School 2, this knowledge translated into the use of storytelling and multimedia tools to convey environmental concepts, such as the interdependence between humans and nature. However, the practical application of this knowledge, such as outdoor activities or experiential learning, was limited due to infrastructural and logistical constraints, which is consistent with findings from other studies in Bangladesh that highlight the challenges of fully implementing EE due to a lack of resources (Chowdhury, 2014).

These results align with Kimaro's (2018) thesis titled " Integrating Environmental Education (EE) for Sustainability into Primary School Curriculum in Tanzania: ", which asserts that teachers' understanding of the environment significantly impacts their teaching practices and the values they impart to students. However, the lack of formal training in EE observed among most participants restricted their ability to integrate EE effectively into daily classroom activities. The absence of outdoor

activities, as noted during the classroom observations, underscores the need for enhanced training and resources.

Sub-Theme 1.2: Integration of Environmental Education in Pre-Primary Classrooms

Teachers unanimously agreed on the importance of introducing EE at the pre-primary level, seeing it as a critical period for shaping environmental awareness. One participant from School 1 emphasized that early exposure to environmental concepts is essential for promoting responsible behavior. This view is consistent with the research, which identifies early childhood as a pivotal stage for instilling sustainable habits (Haque, 2013).

However, while teachers incorporated environmental concepts through storytelling, multimedia presentations, and discussions, there was a notable lack of practical, hands-on learning activities. Classroom observations revealed that experiential learning opportunities, such as outdoor activities and interactive sessions, were often omitted due to infrastructural challenges and large class sizes. This reflects the findings of Derman and Gurbuz (2018), who in their study "Environmental Education in the Science Curriculum in Turkey and Other Countries" also point out that logistical barriers, including limited outdoor space, impede the full inclusion of environmental education in classroom activities.

Furthermore, while storytelling and multimedia tools were commonly used to introduce topics like pollution and climate change, the absence of experiential activities limited students' deeper engagement and understanding. This issue aligns with Otitoju et al. (2022), who stress the importance of incorporating practical environmental activities into classroom teaching to foster pro-environmental behaviours. Thus, the findings indicate a need for more hands-on, interactive

approaches to reinforce environmental concepts and translate theoretical knowledge into real-world practice.

Sub-Theme 1.3: Training in Environmental Education

A recurring concern in the study was the lack of formal training in EE for teachers. Most participants indicated they had not received any specialized training in environmental education, which limited their ability to implement EE effectively. Only one participant mentioned having attended a workshop on environmental issues, which provided useful insights into recycling and sustainable practices.

This finding reflects broader concerns highlighted by Türkoğlu (2019) in the article " Opinions of Preschool Teachers and Pre-Service Teachers on Environmental Education and Environmental Awareness for Sustainable Development in the Preschool Period", where the inadequacy of teacher training in EE is emphasized. This inadequacy not only hampers the practical implementation of EE but also limits teachers' confidence in teaching environmental concepts.

Sub Theme 1.4: Implementation of NCTB Pre-Primary Curriculum in the Classroom

Although all participants followed the NCTB pre-primary curriculum, the implementation varied in terms of interactive and practical activities. Teachers adhered to the curriculum's recommendations for storytelling and discussions but struggled to engage students in hands-on experiences due to the absence of adequate infrastructure and materials. This finding aligns with Chowdhury’s (2014) study, "Nature of Environmental Education in Bangladesh", which suggests that while the curriculum emphasizes practical learning, its effective implementation requires sufficient resources and teacher training, which are often lacking.

Sub Theme 1.5: Role of Environmental Education in Achieving Learning Competencies

Participants noted that EE plays a vital role in developing various competencies, such as critical thinking, problem-solving, and environmental stewardship. The study found that while moral lessons on environmental topics were conveyed through storytelling, opportunities for enhancing competencies through hands-on projects were missed. Similar conclusions are drawn in their review by Ardoin & Bowers (2020) titled, "Early Childhood Environmental Education: A Systematic Review", where experiential learning is emphasized as crucial for fostering critical thinking and sustainable habits.

Sub Theme 1.6: Environmental Education in the Teachers' Guide

The Teachers' Guide provided some structure for implementing EE, yet its practical recommendations were not fully realized in classroom activities. Participants were aware of the guide's content but relied mainly on traditional teaching methods instead of adopting more innovative approaches such as outdoor play or collaborative learning. The literature supports the view that teachers need adequate training and resources to effectively use curriculum guides and integrate EE into everyday teaching practices (Türkoğlu, 2019).

Theme 2: Teaching Practices of Environmental Education in the Pre-Primary Classroom

This theme explores how teachers implement environmental education in pre-primary classrooms, focusing on the methods and materials they use. The sub-themes cover the implementation of EE in lessons, student involvement in environmental activities, and the role of parental engagement.

Sub-Theme 2.1: Implementation of Environmental Education in Classroom Teaching

Teachers in both schools employed various methods to teach EE, including storytelling, multimedia presentations, and creative activities like drawing and vegetable stamping. However, as observed in the classroom, practical activities such as seed planting or outdoor exploration were not implemented, despite being mentioned in interviews. This reliance on traditional teaching methods with limited hands-on learning points to the need for more innovative and interactive approaches to EE. The use of recycled materials, while highlighted as an important aspect of EE, was not fully realized in the observed classrooms. Teachers spoke of using items like plastic bottles and packets for projects but did not implement these activities during the observation period. This gap between lesson plans and actual practices suggests that infrastructural challenges and resource limitations significantly constrain the full integration of EE in pre-primary classrooms.

Sub Theme 2.1.1: Activities or Lessons on Environmental Education

Teachers described various planned activities, such as nature observations and waste management projects. However, these were rarely executed during the observed sessions, limiting students' experiential learning opportunities. This discrepancy between the lesson plan and actual activities suggests a need for more consistent implementation of practical lessons, a recommendation echoed in the findings in Ardoin & Bowers' (2020) review of "Early Childhood Environmental Education".

Sub Theme 2.1.2: Learning Materials Used in Implementing Environmental Education

While teachers reported using storybooks, multimedia tools, and recycled materials, the study found limited active engagement with physical resources during lessons.

Classroom observations confirmed that materials like flip charts and models were present but not effectively utilized, leading to a reliance on verbal explanations. This finding supports prior research indicating the need for better use of educational materials in EE (Chowdhury, 2014).

Sub Theme 2.1.3: Suggestions about Appropriate Materials for Implementing Environmental Education

Participants suggested using locally available materials and multimedia tools to enhance the teaching of EE. They recommended incorporating hands-on activities with recycled items and outdoor learning experiences where feasible. These suggestions align with Tomassi's (2023) recommendations in "Ten Ways to Incorporate Environmental Education in the Classroom," where practical, low-cost resources are highlighted as key to making EE more accessible and engaging.

Sub-Theme 2.2: Involvement of Students in Environmental Activities

Involving students in environmental activities is critical for fostering environmental responsibility. Teachers emphasized the importance of engaging students in hands-on activities like waste disposal, hygiene practices, and observing plants. However, the classroom observations revealed that these activities were largely limited to verbal instruction, with few practical or outdoor engagements due to ongoing construction at both schools.The lack of outdoor activities, despite their acknowledged importance, reflects a broader challenge in implementing EE in resource-constrained environments. Bladow (2023), in her thesis titled "Integrating Environmental Education Into Teacher Preparation Programs," has emphasized the need for outdoor learning to enhance students' environmental awareness, but infrastructural barriers often impede such initiatives.

Sub-Theme 2.3: Parental Involvement in Implementing Environmental Education

The study underscored the critical role of parental involvement in reinforcing environmental education (EE) beyond the classroom. Teachers highlighted that since children spend a significant amount of time at home, the support and active participation of parents are essential for successfully instilling environmental values and practices. Monthly parent-teacher meetings were identified as a key strategy to encourage environmental practices, such as proper hygiene and waste disposal, within students' households.

This is supported by Iqbal and Ahsan (2024) in their article "Environmental Education and Recycling Practices among Underprivileged Children in Bangladesh", where they emphasize the positive impact of parental involvement in enhancing the effectiveness of EE among young learners. Yalcin et al. (2016) similarly stress the importance of family engagement in early childhood environmental education. However, the study also revealed gaps in parental involvement, as some parents were less engaged in these initiatives. This suggests a need for stronger collaboration between schools and families to ensure the consistent reinforcement of environmental education at home.

Theme 3: Challenges in Implementing Environmental Education

This theme addresses the challenges teachers face in integrating environmental education into their classroom practices. It covers issues such as inconsistent student attendance, limited resources, and the infrastructural barriers that prevent the full implementation of environmental education**.**

Sub-Theme 3.1: Challenges in Integrating Environmental Education

The teachers faced several challenges in integrating EE into their classroom practices. Inconsistent student attendance, lack of multimedia resources, and limited

infrastructural support were among the most commonly cited barriers. Additionally, the large class sizes made it difficult for teachers to manage outdoor activities, which are essential for experiential learning in EE.

These findings are consistent with previous studies that have identified similar challenges in implementing EE in resource-poor settings (Chowdhury, 2014). The ongoing construction work at both schools further limited the possibility of outdoor activities, reinforcing the need for better infrastructural support to facilitate environmental learning.

Sub-Theme 3.2: Overcoming the Challenges

To overcome these challenges, teachers suggested several strategies, including the provision of practical learning materials, the use of multimedia tools, and the creation of a supportive school environment. They emphasized the importance of fostering a welcoming atmosphere to encourage regular student attendance and called for government support in providing materials aligned with the NCTB standards.

These strategies align with Uddin's (2023) article, "Environmental education for sustainable development in Bangladesh and its challenges" which emphasizes the need for both material and infrastructural support to ensure successful EE integration. Additionally, teachers highlighted the importance of having classroom assistants to manage large classes and facilitate outdoor activities, a suggestion supported by research on the benefits of small class sizes in early childhood education (Haque, 2013).

Sub-Theme 3.3: Support Necessary in Integrating Environmental Education

The need for comprehensive support systems, including teacher training, parental involvement, and infrastructural improvements, was a key finding of the study. Teachers called for formal training programs tailored to environmental education,

which would equip them with the necessary skills and knowledge to deliver EE effectively.

The need for professional development is supported by findings from "Opinions of Preschool Teachers and Pre-Service Teachers on Environmental Education and Environmental Awareness for Sustainable Development in the Preschool Period"(Türkoğlu, 2019), which emphasizes the importance of equipping teachers with the skills to nurture environmental awareness in young children. Moreover, providing essential facilities like hand-washing stations and safe outdoor spaces is crucial for encouraging hands-on learning and fostering environmental responsibility in students.

Integrating environmental education in pre-primary classrooms is essential for fostering environmentally conscious children, but challenges such as limited resources, inadequate training, and infrastructural constraints hinder its effective implementation. Addressing these barriers through targeted teacher training, the provision of learning materials, and improved infrastructure is crucial. Involving parents and the community in reinforcing environmental values can further enhance the learning experience. The findings highlight the need for continued efforts to overcome these challenges, ensuring that environmental education can play a significant role in shaping sustainable behaviors from an early age.

Conclusion

To conclude, understanding teachers' perceptions of integrating environmental education (EE) into pre-primary classroom practices is crucial in the context of Bangladesh, where environmental challenges, including climate change and pollution, have significant implications. Introducing EE at the pre-primary level plays a vital

role in fostering early environmental awareness and sustainable behaviour. This study found that while teachers recognize the importance of EE and express a willingness to incorporate it into their lessons, they face numerous challenges, including limited resources, inadequate training, and infrastructural deficiencies, which hinder its full implementation.

There is no substitute for hands-on, experiential learning when it comes to developing a deep connection with the environment. To enhance teachers' capacity to effectively integrate environmental concepts into their teaching practices, professional development programs tailored to environmental education are necessary. Such programs would not only improve teachers' understanding of EE but also equip them with the tools and methods needed to engage young learners in meaningful, practical environmental activities.

Thus, improving teachers' access to training, resources, and infrastructural support is essential to successfully implement EE in pre-primary classrooms. The recommendations of this study may inform policymakers and school administrators about the need to provide stronger institutional support for teachers, ensuring that environmental education becomes a key component of early childhood education. Both EE and its integration into pre-primary education are still developing concepts in the Bangladeshi educational system. Therefore, raising awareness among teachers, parents, and the community at large is crucial for fostering an environmentally conscious generation capable of addressing the environmental challenges of the future.

Recommendations

Integrating Environmental Education (EE) into pre-primary education is essential for fostering environmental awareness and sustainable behaviors from an early age.

Based on the findings of this study on teachers' perceptions of the integration of environmental education (EE) in pre-primary classroom teaching practices, the following recommendations are made to enhance the effectiveness of EE in early childhood education:

1. Enhancing Teacher Training Programs

Teachers should receive formal training in environmental education to equip them with the necessary skills and knowledge for effective integration of EE into pre-primary classrooms. This training should focus on using local resources, developing resource materials using recycled materials, practical teaching methods, and multimedia tools to make environmental lessons engaging.

2. Provision of Learning Materials

Schools should be provided with age-appropriate and cost-effective materials that align with the National Curriculum and Textbook Board (NCTB) guidelines. These materials should include hands-on tools such as recycled items, flip charts, and models to support interactive environmental learning.

3. Promoting Experiential Learning

Schools should create opportunities for outdoor learning, field trips, and hands-on activities, such as nature exploration, gardening, and waste management projects. These practical experiences can help deepen students' understanding of environmental concepts and foster sustainable behaviours.

4. Encouraging Parental Involvement

Schools should strengthen parental involvement in environmental education by organizing regular parent-teacher meetings to encourage environmental practices at home. Providing parents with guidelines on promoting sustainability outside the classroom will help reinforce environmental lessons.

5. Addressing Infrastructural Challenges

Government support is essential to improve school infrastructure, ensuring safe outdoor learning spaces, proper hygiene facilities, and access to multimedia tools. Schools should prioritize clean washrooms and hand-washing stations with soap and water, reinforcing hygiene lessons. Additionally, multi-functional spaces should be built for both outdoor and indoor environmental activities, offering flexibility during construction or bad weather.

6. Curriculum Development and Policy Support

National-level advocacy is needed to strengthen the integration of EE within the pre-primary curriculum. The National Curriculum and Textbook Board (NCTB) should revise the pre-primary curriculum to include more comprehensive and practical EE content. Policymakers must ensure that EE becomes an essential part of early childhood education, providing the necessary resources and support to schools for effective implementation, including recruiting classroom assistants to support teachers in managing large classes.

7. Collaboration between Schools and the Community

To improve environmental education in pre-primary classrooms, schools should engage in active collaboration with community-based organizations (CBOs). These collaborations furnish educators with essential materials, expertise, and practical examples that enhance the curriculum. Community-based organizations frequently provide experiential learning opportunities, including field trips and workshops conducted by experts, which cultivate environmental stewardship in young children. By involving community people such as gardeners, farmers, and cleaners as guest speakers, schools can connect classroom education with actual environmental issues,

fostering social justice and equity. These collaborations provide teachers with the necessary assistance to effectively include environmental education in early childhood teaching practices.

8. Further Research

Future research could explore the long-term impact of environmental education on students' environmental behaviours and attitudes. Additionally, studies could investigate the role of parents in supporting environmental education beyond the classroom.

Implementing these recommendations will strengthen pre-primary education in Bangladesh, equipping teachers with the training and resources needed to foster environmentally conscious young learners, ultimately shaping a generation committed to sustainability.

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Appendix 1

Research Tool:

1. In-Depth Interview (IDI) Guidelines

Section i: Understanding/Knowledge

1. What do you know about environmental education?
2. What do you think about the importance of integrating environmental education in pre-primary classrooms?
3. Have you received any training in environmental education?
4. (If yes) then please explain how have you been implementing your knowledge into practice
5. Do you follow the pre-primary curriculum published by NCTB in your school?
6. Do you think environmental education influences achieving the learning competencies of pre-primary education? How?
7. Are you aware of the inclusion of environmental education in the teachers' guide for pre-primary teachers? If yes, have you read through it and did it benefit you?

Section ii: Practice

8. How do you integrate/ implement environmental education into your classroom teaching?
9. Can you provide examples of activities or lessons that include environmental education?
10. What kind of learning materials do you use to implement environmental education in your classes?
11. What materials or resources do you find most useful for teaching environmental education?

12. How do you involve students in environmental activities inside and outside the classroom?
13. Do you have any suggestions about the kind of materials appropriate for implementing environmental education?
14. Is there any parental involvement required for implementing environmental education? If yes, how do you expect parents to be part of this?

Section iii: Challenges

15. What challenges do you face when integrating environmental education into your teaching?
16. How do you overcome these challenges?
17. What support or resources are necessary to integrate environmental education into your teaching better?

2. Classroom Observation Checklist

Classroom set up & Environment

- Classroom decorated with environmentally-themed artwork, posters, charts, or learning materials.
- Availability of resources related to environmental education (books, materials, etc.).
- Availability of recycled materials and usage by students**.**

Lesson Planning and Delivery

- Lesson plans include environmental education topics.
- Integration of hands-on activities related to environmental education (e.g., planting, and recycling projects).
- Use of interactive methods (e.g., games, songs) to teach environmental concepts.
- Integration of technology (e.g., videos, apps)/ multimedia resources to enhance environmental learning.

Student Engagement and Interaction

- Students actively participate in discussions about the environment.
- Students are involved in projects or activities that promote environmental awareness.
- Collaboration and group work focused on environmental issues.
- Students display understanding and interest in environmental issues through their questions and activities.

Teacher's Role

- Teacher actively incorporates environmental education in daily lessons.
- Teacher uses innovative methods to teach environmental topics (e.g., storytelling, experiments).
- Teacher encourages critical thinking and problem-solving about environmental issues.
- Teacher facilitates experiential learning through outdoor activities or experiments.

Assessment and Feedback

- Regular assessment of students' knowledge and understanding of environmental concepts.
- Use of creative assessment methods (e.g., portfolios, project presentations) to evaluate environmental learning.
- Constructive feedback provided to students to encourage improvement and deeper understanding.

গবেষণা টুল:

1. (IDI) নির্দেশিকা

বিভাগ i: বোঝা

1. আপনি পরিবেশগত শিক্ষা সম্পর্কে কি জানেন?

2. প্রাক-প্রাথমিক শ্রেণীকক্ষে পরিবেশগত শিক্ষাকে একীভূত করার গুরুত্ব কী বলে আপনি বিশ্বাস করেন?

3. আপনি কি পরিবেশগত শিক্ষার কোন প্রশিক্ষণ পেয়েছেন?

4. (যদি হ্যাঁ) তাহলে অনুগ্রহ করে ব্যাখ্যা করুন কিভাবে আপনি আপনার জ্ঞানকে বাস্তবে প্রয়োগ করছেন

5. আপনি কি আপনার স্কুলে NCTB দ্বারা প্রকাশিত প্রাক-প্রাথমিক পাঠ্যক্রম অনুসরণ করেন?

6. আপনি কি মনে করেন পরিবেশগত শিক্ষা প্রাক-প্রাথমিক শিক্ষার, শেখার দক্ষতা অর্জনে প্রভাব ফেলে? কিভাবে?

7. আপনি কি প্রাক-প্রাথমিক শিক্ষকদের জন্য শিক্ষক গাইডে পরিবেশগত শিক্ষার অন্তর্ভুক্তির বিষয়ে সচেতন? যদি হ্যাঁ, আপনি কি এটি পড়েছেন এবং এটি কি আপনার উপকারে এসেছে?

বিভাগ ii: অনুশীলন

8. আপনি কীভাবে আপনার শ্রেণীকক্ষে পাঠদানে পরিবেশগত শিক্ষাকে একীভূত/বাস্তবায়ন করবেন?

9. আপনি কি পরিবেশগত শিক্ষার অন্তর্ভুক্ত কার্যকলাপ বা পাঠের উদাহরণ দিতে পারেন?

10. আপনার ক্লাসে পরিবেশগত শিক্ষা বাস্তবায়নের জন্য আপনি কি ধরনের শিক্ষা উপকরণ ব্যবহার করেন?

11. পরিবেশগত শিক্ষা শেখানোর জন্য আপনি কোন উপকরণ বা সংস্থানগুলি সবচেয়ে উপযোগী বলে মনে করেন?

12. শ্রেণীকক্ষের অভ্যন্তরে এবং বাইরে পরিবেশগত কার্যকলাপে আপনি কীভাবে শিক্ষার্থীদের জড়িত করবেন?

13. পরিবেশগত শিক্ষা বাস্তবায়নের জন্য উপযুক্ত উপকরণ সম্পর্কে আপনার কোন পরামর্শ আছে?

14. পরিবেশগত শিক্ষা বাস্তবায়নের জন্য কি অভিভাবকদের কোনো সম্পৃক্ততা প্রয়োজন? যদি হ্যাঁ, আপনি কিভাবে পিতামাতারা এর অংশ হবেন বলে আশা করেন?

বিভাগ iii: চ্যালেঞ্জ

15. আপনার শিক্ষার সাথে পরিবেশগত শিক্ষাকে একীভূত করার সময় আপনি কোন চ্যালেঞ্জের মুখোমুখি হন?

16. আপনি কীভাবে এই চ্যালেঞ্জগুলি কাটিয়ে উঠবেন?

17. আপনার শিক্ষার সাথে পরিবেশগত শিক্ষাকে আরও ভালোভাবে সংহত করার জন্য কোন ধরনের সহায়তা বা সংস্থান প্রয়োজন?

Appendix:2

Consent Letter Form:

July 2, 2024

xxxx

Academic Supervisor

xxxxx

Dhaka

Subject: Permission for a non-participatory classroom observation and interview of teachers and Head teachers

Dear Ms xxx,

Hope this email finds you well. I am Mahmuda Sharmim, a student of MSc in Early Childhood Development at BRAC IED, BRAC University.

As part of a Master's program at BRAC University, I am required to conduct a study and write a thesis based on the findings of the study. For my thesis, I aim to understand the perception and practices of Government school teachers, who teach 3-6-years old, in their classrooms. The findings of the research will help understand the perception and practice of teachers about Environmental Education in classrooms, and help improve and innovate new methods for future applications.

I am writing to you to request for an opportunity to observe one preprimary classroom of your school and conduct an interview of one preprimary class teacher and the head teacher. If granted the permission, I will conduct two (same class, two days) non-participatory classroom observations and two interviews one with the class teacher and another with the head teacher.

I assure you that, strict confidentiality will be maintained and the name of the school will not be revealed in the report.

I shall remain grateful if you could please grant me the permission to conduct the proposed observation and interview to support conducting my research.

Thank you.

Yours sincerely

Mahmuda Sharmin

Voluntary Consent Form

TITLE OF STUDY

Teachers' Perceptions of the Integration of Environmental Education in Pre-Primary Classroom Teaching Practices

PURPOSE OF STUDY

This study is being conducted as part of my master's degree requirements from the Institute of Educational Development- BRAC University. The study aims to investigate teachers' perception and practices regarding the Integration of Environmental Education in Pre-Primary Classroom.

RISKS

Participants will not face any threats for their involvement in the study, whether directly or indirectly. Teachers of children aged 3-6 will be participating in the study, with the results primarily serving as a requirement for their degree.

ADVANTAGE OF THE STUDY

Participating in this study does not offer any immediate advantages for you. However, your involvement will help enhance the understanding of Individualized teaching, among ECD educators, researchers, and other stakeholders.

CONFIDENTIALITY

All data collected from the participants during the research will be kept confidential.

ADDITIONAL UTILIZATION OF DATA

Information collected from this study may be preserved for further experiments. In these cases, data and information shared with other researchers will not compromise confidentiality.

VOLUNTARY PARTICIPATION

Participation in this study is optional. The decision to participate in the study rests with the individual. If the participant chooses to participate in this study, they will need to sign a consent form. Once the consent form is signed, participants have the freedom to withdraw at any time, without the need for an explanation. Opting out of this study will have no impact on the participant's relationship with the researcher, if there is one. If a participant decides to withdraw from the study prior to the completion of data collection, your data will either be returned to you or destroyed.

I sincerely appreciate your cooperation..

CONSENT

I have carefully reviewed the provided information and now have the chance to inquire further. I acknowledge that my involvement in this study is entirely optional and that I have the freedom to withdraw at any time, without the need for an explanation. I acknowledge that I will be provided with a copy of the consent form.

Participant's Name & signature _____ Date _____

Researcher's signature _____ Date ____

Appendix: 3

Sample Transcript of IDI

Name: Teacher 1 Position: Pre-primary Teacher

School: School 1 Educational qualification: Degree

Date: 11-07-2024

Note: The following interview was conducted with a pre-primary teacher at School 1 on July 11, 2024. The interview aimed to explore the teacher's perceptions, practices, and challenges regarding the integration of environmental education in pre-primary classrooms. Consent was obtained prior to the interview, ensuring a comfortable environment for open discussion.

Q1: What do you know about environmental education?

Ans: *Our environment consists of everything around us, like plants, air, soil, people, and animals. I think environmental education is about making children aware of different aspects of nature and pollution. For instance, I take children outdoors to learn about animals, plants, and pollution. This hands-on exploration helps them think more creatively and understand the natural world better. Sometimes, they even bring small insects and ask about them, which show their curiosity and imagination growing.*

Q2: What is the importance of integrating environmental education into the pre-primary classroom?

Ans: *Teaching children about the environment is crucial to raising good citizens. If they learn about the impact of pollution and responsible actions from a young age, it helps shape their behavior. For example, children learn that it's harmful to cut down trees but beneficial to plant them. They understand that wasting water or leaving lights on unnecessarily is not good for the environment. Through these lessons, they start to value and protect the environment.*

Q3: Have you received any training in environmental education?

Ans: *No, I haven't received specific training.*

Q4: Do you follow the pre-primary curriculum published by NCTB in your school?

Ans: *Yes, absolutely. We incorporate stories that teach children that plants and animals are our friends. For example, in arts and crafts, they draw what they see in their surroundings and even make items from discarded materials, like leaves or coconut shells. This creative approach helps them understand the value of reusing materials and respecting nature.*

Q5: Do you think environmental education in pre-primary education has an impact on learning skills? How?

Ans: *Yes, it has a positive impact. Observing things in nature helps children learn better and enhances their understanding of cause and effect. For instance, if they touch fire, they understand it burns, and this teaches them the concept of causality.*

Q6: How do you implement environmental education in your classroom?

Ans: *I use real materials, models, and multimedia to engage them. In arts class, we draw pictures of flowers, fruits, and animals. I emphasize keeping the classroom and surroundings clean, throwing trash in designated bins, and maintaining personal hygiene. For instance, I sing a song with them about not littering to make it more engaging. At the end of the year, we also do projects, like growing plants from seeds, which they enjoy.*

Q7: Can you provide examples of activities or lessons that include environmental education?

Ans: *We often talk about different seasons and natural disasters during our morning session. Sometimes, we portray these through role play or drama, where students act out scenarios about natural events. We also take them outside to explore nature, where they can identify different trees and understand that trees and animals are our friends. Hygiene and cleanliness are also emphasized through fun activities and songs.*

Q8: What kind of teaching materials do you use to implement environmental education in your class?

Ans: *I use practical materials like flip charts, multimedia, and real objects from nature. These resources make learning more tangible for the students.*

Q9: Does the implementation of environmental education require any parental involvement?

Ans: *Yes, definitely. We hold meetings with parents, especially mothers, to discuss the importance of cleanliness and environmental responsibility. I encourage parents to reinforce habits like washing hands, conserving water, and treating plants gently at home.*

Q10: What challenges do you face when integrating environmental education into your teaching?

Ans: *It can be challenging to keep the children engaged without enough materials like multimedia or models. Having these resources would make it easier for children to focus and understand.*

Q11: How do you overcome these challenges?

Ans: *If we had more practical resources, I could teach the children in a more interactive way. Also, additional training would help me improve my teaching methods for environmental topics.*

Q12: What kinds of support or resources are needed to better integrate environmental education into your teaching?

Ans: *More training for teachers is necessary. I feel that with better understanding and clear concepts, I can teach children effectively. I also think special training could be beneficial, especially for students with specific needs.*