A COMPILATION OF RESEARCH STUDIES ON FIVE DIFFERENT ISSUES OF PRIMARY EDUCATION, BANGLADESH

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National Academy for Primary Education

A Compilation of Research Studies Report
On
Five Different Issues of Primary Education, Bangladesh

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Acknowledgement

National Academy for Primary Education (NAPE) took an initiative to develop skills of field-level primary education personnel on research activities. For this purpose, in 2024–2025 fiscal year NAPE invited research proposals from the field level officers like PTI and URC personnel and finally five proposals were selected through a long process. The headlines and themes of five researches are as follows:

1. Play-based Pedagogy at Pre-primary Level explores teachers' understanding of play-based pedagogy in government pre-primary classrooms. It also identifies key challenges in applying play-based learning effectively.
2. The research Understanding Inclusive Education in Bangladesh examines how primary education practitioners understand inclusive education. It highlights the gap between policy goals and real classroom practices.
3. Teachers' Attitude Toward BTPT Implementation investigates teachers' motivation, confidence, and readiness to implement BTPT strategies. It also identifies practical barriers that affect implementation in schools.
4. Developing Science Process Skills in Grade 5 explores how science process skills are included in the Grade 5 science textbook and practiced in classrooms. It also identifies challenges teachers face in transforming textbook activities into effective learning.
5. Parental Preferences in Choosing Primary School explores the key factors that influence parents' school selection decisions. It highlights issues such as quality, cost, accessibility, and social preferences.

It was a challenge for NAPE to complete these researches successfully. Five faculty members of NAPE were engaged to guide the teams to complete these difficult tasks. Faculty of Research and Curriculum Development of NAPE were also provided necessary support. Finally, five researches were completed successfully. We got help and necessary support from different people.

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A Study Report
On

Exploring Teachers' Understanding of Play-based Pedagogy at the Pre-primary Level in Government Primary Schools in Dhaka City

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Abstract

Play-based pedagogy has been widely recognized in early childhood education research and practice as a developmentally appropriate, engaging, and effective approach to fostering children's holistic growth, encompassing physical, cognitive, language, social, and emotional domains. Rooted in the understanding that young children learn best through active exploration, interaction, and meaningful play, this pedagogical approach supports the development of foundational skills necessary for lifelong learning. In the context of Bangladesh, the National Curriculum 2022 marks a significant policy shift by advocating for child-centred, play-based learning in pre-primary education, particularly within government primary schools. This policy initiative reflects global commitments to ensure quality early childhood education aligned with children's rights and developmental needs.

Given the policy commitment to child-centred learning in Bangladesh's pre-primary curriculum and the ongoing challenges related to teacher capacity, classroom practice and systemic barriers, it is essential to explore how teachers themselves conceptualize and apply play-based pedagogy. This study aims to address this gap by examining teachers' perceptions, instructional practices, and the challenges they face in government primary schools in Dhaka city. Understanding these dynamics is crucial for informing targeted professional development, improving implementation strategies, and aligning classroom practices with national early childhood education goals.

The overall objective of this study is to explore teachers' understanding of play-based pedagogy at the pre-primary level in government primary schools in Dhaka city. To meet the overall objective, several research questions were considered during the data collection and interpretation. The specific research questions are: 1) What are the perceptions of the teachers on the play-based approaches to develop students' physical development?; 2) What are teachers' views of play-based approaches in fostering students' social and emotional development?; 3) What are the perceptions of the teachers on the play-based approaches to develop students' language and communication development?; 4) What are teachers' views of the play-based approaches in developing students' cognitive development?; 5) How are the activities being implemented using play-based pedagogy in the classrooms?; and 6) What are the challenges teachers face in implementing play-based pedagogy in the classrooms?

This study adopted a convergent parallel mixed-methods design, combining quantitative and qualitative research techniques. Quantitative data were collected through a cross-sectional

survey of teachers and classroom observations. Qualitative data were gathered through in-depth interviews, observations, and document analysis. This study was conducted across 12 thanas within the Dhaka City Corporation. Data were collected from 209 pre-primary teachers using a structured questionnaire administered through Google Forms. Additionally, 12 in-depth interviews were conducted with pre-primary teachers, and one classroom observation was carried out in each thana, a total of 12 classroom observations.

The **major findings** of the study are-

a) Teachers' understanding of play-based pedagogy:

- Most teachers (82.8%) demonstrated a solid theoretical understanding of play-based learning, particularly its emphasis on both guided and open-ended play.
- A large proportion of teachers (74.6%) reported high confidence in implementing play-based pedagogy. Nevertheless, this confidence coexists with significant gaps in professional preparation, as 59.3% of teachers had never received formal training on play-based approaches. This may affect their ability to design age-appropriate activities, align them with learning objectives, and assess outcomes effectively.
- While 66.5% of teachers reported embedding play-based approaches regularly into their lessons, nearly one-third (33.5%) admitted to using such strategies inconsistently. The absence of training for a majority (59.3%) likely contributes to this uneven implementation.
- Major barriers to effective implementation include a lack of learning materials (reported by 80.4% of teachers), insufficient training (72.2%), large class sizes (62.2%), limited time (50.2%), and pressure to complete the syllabus (39.7%).
- Most teachers (73.7%) reported referring to the curriculum during lesson planning, and 73.2% agreed that it provides clear instructional guidance.
- 79.4% of teachers cited a lack of parental awareness about the benefits of play-based approaches as a significant cultural barrier. About 43.5% of teachers encountered occasional resistance, while 11.5% faced frequent resistance from parents or community members.
- A significant majority of teachers (74.6%) identified outdoor play as the most effective approach for supporting children's physical growth. This preference reflects teachers' awareness of the importance of motor skill development in early childhood education.
- Most respondents (67%) identified storytelling and picture reading as the most effective strategies for enhancing children's language and communication skills. Surprisingly,

only 9.1% of teachers selected role-playing or pretend play, despite its strong recognition in early childhood pedagogy for supporting expressive language, turn-taking, and social communication.

- A significant majority of teachers (72.7%) identified cooperative games such as building blocks or puzzles completed in groups as the most effective strategy for supporting social and emotional development. This suggests a strong practical understanding among teachers that such activities promote critical interpersonal skills including teamwork, turn-taking, sharing, negotiation, and problem-solving, all of which are foundational to social competence and emotional self-regulation.
- A significant proportion of respondents (39.2%) selected building blocks and construction toys as the most effective resources for enhancing cognitive development in young children. These tools are widely recognised for promoting spatial reasoning, planning, sequencing, cause-and-effect understanding, and fine motor coordination. A close second (37.3%) was sorting and matching activities, which teachers identified as helpful for developing logical thinking, classification skills, attention to detail, and early math concepts such as grouping and pattern recognition.

b) Teaching-learning Scenario

- **Teacher Facilitation**: Teachers demonstrated activities, provided guidance, and encouraged peer interaction, but rarely adapted tasks to students' needs due to strict adherence to the teacher's guide and time constraints.
- **Classroom Environment and Resources**: Learning environments were often disrupted by noise pollution and overcrowding. While teachers attempted to organize classrooms effectively, there was a shortage of visual aids and adequate space.
- **Implementation Challenges**: Teachers faced limited time, inadequate materials, and large class sizes, which hindered equitable participation and effective management of play-based learning activities.

c) **Contextual Barriers**

- A substantial majority of teachers (90.9%) reported a shortage of essential resources such as play materials and sufficient space, while 65.5% identified a lack of teaching aids, such as storybooks, puzzles, and visual learning tools as a major obstacle.
- Over four-fifths of teachers (81.3%) cited difficulties in managing large class sizes, which limit their ability to supervise and facilitate meaningful play-based activities.

Additionally, 66.5% expressed that inadequate professional training limits their capacity to use play effectively for holistic child development. Time constraints were also noted, with 37.8% of teachers reporting that limited curriculum time prevents the regular integration of play into lessons.

- A considerable proportion of teachers (75.1%) felt that a lack of parental awareness about the benefits of play affects support for play-based learning. While fewer teachers (23.4%) reported insufficient administrative support, this still indicates a need for stronger institutional backing and alignment of leadership with child-centred educational practices.

The study suggested the following **recommendations**-

a) For pre-primary teachers

- **Strengthening Pedagogical Knowledge of Play-Based Learning:** Teachers should seek to understand how different types of play support various domains of child development—cognitive, language, physical, and socio-emotional. This requires proactive engagement in professional development opportunities such as workshops, in-service training, peer learning circles, and online courses that focus on child development theories and play pedagogy.
- **Integrating Play into Daily Classroom Practice:** Play-based activities should be systematically embedded in lesson plans to introduce, reinforce, and assess key concepts. For instance, construction play and puzzles can be used to build cognitive and motor skills, while group games and role-plays can enhance language use and collaboration.
- **Facilitating and Scaffolding Children's Learning Through Play:** It is essential for teachers to adopt a more active facilitative role, observing children's play, identifying learning opportunities, and extending children's thinking through open-ended questions, modelling, and guided interaction. Teachers should learn to scaffold play experiences in ways that are responsive to children's developmental levels and individual needs.
- **Creating and Adapting Play Materials and Environments:** Teachers should be encouraged and trained to use low-cost, locally available, and recycled materials to create play-based learning resources. Everyday items such as bottle caps, sticks, paper

scraps, or cloth pieces can be transformed into teaching aids, puzzles, or imaginative props.

b) For School and Educational Authorities

- **Ensuring Availability of Play Materials and Learning Resources:** School authorities must take steps to ensure that pre-primary classrooms are adequately equipped with age-appropriate, diverse, and developmentally suitable play materials such as building blocks, puzzles, storybooks, matching games, and sensory toys.
- **Creating a Supportive Physical Environment:** School management should explore ways to optimise existing space to create dedicated play zones that support different types of play- dramatic, constructive, sensory, and quiet. Even in limited settings, divide classes into sub-sections if needed. Additionally, authorities should advocate for infrastructural planning in new school construction that prioritises child-friendly, flexible, and safe play environments.
- **Building Positive School Leadership and Administrative Support:** Headteachers and other schoolteachers should be oriented to understand the developmental importance of play and how to support its implementation. Administrative encouragement, such as allowing flexible timetables, allocating space for play, or celebrating good practices, can significantly boost teacher motivation.
- **Promoting Community Awareness and Engagement:** Awareness campaigns through school meetings, posters, and collaboration with community leaders can help shift cultural attitudes that view play as unproductive. Schools can organise play events, open classroom sessions, or exhibitions of children's play-based work to showcase learning outcomes and build public trust. Engaging families in this way can reduce resistance and strengthen the partnership between home and school, making play-based learning more accepted and supported.

c) For Researchers

- **Expanding Contextual Understanding of Play-Based Pedagogy:** Researchers should prioritise ethnographic, longitudinal, or mixed-method studies that document teachers' day-to-day play-based pedagogy practices, challenges, and adaptive strategies within the settings.
- **Exploring Parental and Community Attitudes:** Since teachers reported sociocultural resistance and parental misconceptions as barriers, researchers should explore in greater

depth the beliefs, values, and expectations held by parents and community members regarding early childhood education and play.

- **Developing and Validating Assessment Tools for Play-Based Learning:** Researchers have an important role to play in developing, testing, and refining assessment instruments that are developmentally appropriate, culturally relevant, and feasible for use in Bangladeshi pre-primary classrooms.

This study was delimited to government-run pre-primary classrooms in Dhaka city and did not extend to private institutions or rural settings, nor did it evaluate child outcomes. Nevertheless, the insights generated offer valuable implications for policy and practice, particularly in low-resource urban environments. The successful adoption of play-based pedagogy in Bangladesh's government pre-primary classrooms requires more than conceptual endorsement. It demands a systemic reorientation, grounded in evidence, responsive to context, and inclusive of teachers' voices that can bridge the gap between early childhood education policy and practice.

Acronyms

APA	American Psychological Association
APSC	Annual Primary School Census
DPE	Directorate of Primary Education
ECCD	Early Childhood Care and Development
ECE	Early Childhood Education
ECEC	Early Childhood Education and Care
IDI	In-depth Interview
MoE	Ministry of Education
MoPME	Ministry of Primary and Mass Education
NAPE	National Academy for Primary Education
NCTB	National Curriculum and Textbook Board
NGO	Non-Government Organization
PPE	Pre-primary Education
PSU	Primary Sampling Unit
SDG	Sustainable Development Goals
SEL	Socio-emotional Learning
SPSS	Statistical Package for Social Science
UNCRC	The United Nations Convention on the Rights of the Child
UNICEF	United Nations Children's Fund

Chapter 01: Introduction

1.1 Context of the study

Play is important for early childhood development. Most theories related to this crucial period emphasize play-based learning, encompassing both free and teacher-supported play (Mellou, 1994). Through play, children engage in different activities: exploring, creating, following rules, collaborating, problem-solving, setting goals, and discovering their own capabilities. Research indicates that children can learn effectively in environments that foster exploration, discovery, and play. This holistic approach fosters the overall development of physical, cognitive and social-emotional (Bergen, 2014). To comprehend the impact of play in children's life, it is necessary to first understand play itself. Recognized for its value, play has been the subject of study by numerous scholars and researchers who have explored the fundamental human need for play. Classical theories of play have laid the groundwork for modern understandings.

This play-based approach fosters a safe and nurturing environment that caters to all developmental domains: physical, cognitive, social-emotional, and language. Essential elements include opportunities for movement, music, art, exploration with toys and materials, and activities that encourage physical play, play with objects, social interaction, and symbolic or pretend play (Storli, Sandseter, & Sando, 2020). By understanding these issues, ECE programs can create environments and activities that reflect best practices for fostering optimal growth in young children.

Through play, children encounter and solve problems, which helps develop their abilities and thinking skills. Play stimulates every area of development, including cognitive, social-emotional, physical, and language (Saracho, 2020). a) Cognitive Development: Through play, young children in early grades can explore their environment, discover new things, and understand cause-and-effect relationships. Simple activities like playing peekaboo or stacking blocks help develop cognitive abilities and critical thinking skills.; b) Social and Emotional Development: Play encourages children to interact with others, helping them learn essential social skills such as taking turns, sharing and cooperation. It offers a secure environment for children to express feelings, understand others, and develop empathy. Activities like playing with dolls or engaging in group games foster these skills.; c) Physical Development: Play activities like crawling, grasping toys, and building with blocks help develop fine and gross motor skills. Running, jumping, and other physical plays contribute to overall health, promoting physical fitness and well-being.; and d) Language Development: Through play,

children practice and enhance their language skills. Engaging in play that involves storytelling or role-playing helps children improve their listening skills and comprehension. This way, pre-primary school children improve their communication skills.

The pre-primary curriculum prioritizes play and exploration as core components, unlike primary school programs. This is because the care and stimulation needs of pre-primary-aged children differ from those of primary-aged children. For example, while both age groups benefit from stimulation, pre-primary-aged children require more attention and a playful environment (Weiser, 1991). In Bangladesh, ensuring a high-quality learning environment for pre-primary-aged children is particularly important.

There has been limited discussion and research on play and early years education in the context of Bangladesh. However, the Operational Framework for Pre-primary Education-2008 in Bangladesh explicitly mentions the importance of play. Learning through play is also emphasized in the government's pre-primary curriculum. The National Curriculum and Textbook Board has outlined nine principles in the pre-primary curriculum, with play-based learning being one of them (NCTB, 2022). This study aimed to explore class teachers' understanding of play-based pedagogy and the obstacles they encounter when implementing play-based approaches in the classrooms.

1.2 Statement of the Problem

Play-based pedagogy has long been recognised as a developmentally appropriate and child-centred approach in early childhood education, with growing global emphasis on its role in fostering holistic development across physical, cognitive, language, and socio-emotional domains (Ali, Constantino, Hussain, & Akhtar, 2018). In Bangladesh, the National Curriculum for Pre-Primary Education also encourages the use of play-based methods to make learning engaging, relevant, and developmentally aligned. However, despite this policy direction, there remains a significant gap between curricular expectations and classroom practices, particularly in government primary schools in urban areas like Dhaka. Limited empirical evidence is available on how teachers in these schools perceive, interpret, and implement play-based pedagogy within their classroom contexts. Moreover, systemic challenges such as large class sizes, lack of materials, inadequate teacher training, and sociocultural resistance often constrain effective implementation. This study was undertaken to address this critical gap by exploring how pre-primary teachers in government schools in Dhaka City understand and apply play-based approaches, and to examine the barriers they face in translating pedagogical ideals into classroom realities. Understanding teachers' perspectives and the contextual challenges they

navigate is essential to inform more effective professional development, resource planning, and policy support for early years education.

Over the past three decades, early childhood education in Bangladesh has witnessed significant growth and attention, influenced by global trends. The government has played a pivotal role in strengthening this sector through policies such as the Pre-primary Operational Framework 2008, National Education Policy 2010, National Children Policy 2011, and the Early Childhood Care and Development (ECCD) Policy 2013. Since the introduction of pre-primary education in 2013, Bangladesh has made notable progress in developing children's cognitive, physical, mental, and linguistic abilities, as outlined in the Early Childhood Development (ECD) vision (NCTB, 2023). The National Education Policy 2010 emphasized the gradual expansion of pre-primary education, starting with 5-year-olds and progressing to 4-year-olds, to provide a strong foundation for children before entering primary school (Ministry of Education, 2010).

The Ministry of Primary and Mass Education (MoPME) in Bangladesh has announced the implementation of a two-year pre-primary education program in primary schools. This strategic move is aligned with the Sustainable Development Goals (SDG) Target 4.2, which aims to ensure access to quality pre-primary education for all girls and boys by 2030. According to the APSC 2023 report, over 3.4 million students are enrolled in pre-primary schools nationwide (Directorate of Primary Education, 2023). The Directorate of Primary Education (DPE) provides pre-primary teachers with a seven-day induction training for newly enrolled 4+ children, which includes essential topics such as child development, creating conducive learning environments, communication skills, classroom management, and pedagogical strategies (NCTB, 2023).

In line with the New Curriculum Framework 2021, the government launched a two-year pilot program in 2023 to extend pre-primary education from one to two years. This pilot program has been implemented in 3,214 selected government primary schools nationwide, representing a significant milestone in the expansion of early childhood education in Bangladesh. Dhaka District has a total of 4,557 PPE schools, which include 946 government primary schools and 3,611 schools of other types. There are a total of 321682 students enrolled in different types of schools, out of which 43043 students are enrolled in government primary schools. Furthermore, there are a total of 7,836 teachers employed to conduct teaching and learning activities in government schools (Directorate of Primary Education, 2023).

Teachers are required to incorporate play materials in the classroom to inspire children's learning through play. Without a thorough understanding of the play-based teaching approach,

pre-primary teachers may hinder students' engagement in educational activities, thereby obstructing the learning process from reaching its intended objectives. (Rahman, Mohammed, Akter, & Chowdhury, 2020).

1.3 Rationale of the Study

Play-based learning has emerged as a relatively recent pedagogical approach in the context of early childhood education in Bangladesh. Although widely acknowledged in international literature for its effectiveness in promoting holistic development, including physical, cognitive, social, and emotional growth, its implementation in government primary schools remains limited and inconsistent. One of the primary barriers to effective adoption is the inadequacy of teacher preparation. Most pre-primary teachers are recruited without a background in early childhood pedagogy and receive only a short, 15-day training, which is insufficient to equip them with the theoretical knowledge and practical skills necessary for implementing developmentally appropriate, play-based teaching strategies (Jewel, Drew, Akter, & Chowdhury, 2020).

Extensive research underscores the critical role of play in supporting multiple dimensions of child development. For instance, Madray and Catalano emphasize that play contributes significantly to children's physical, social, moral, creative, and motor skill development (Madray & Catalano, 2010). Similarly, Mabry and Fucigna highlight that playful classroom environments foster autonomy, self-regulation, communication, and problem-solving abilities (Mabry & Fucigna, 2009). The integration of play into early learning has also been endorsed by scholars, who argue that play serves as a foundation for meaningful engagement and experiential learning during the early years (Howard, Jenvey, & Hill, 2006; Russ & Schafer, 2006).

Within the Bangladeshi context, Chowdhury and Rivalland have explored the relationship between play and pedagogy in pre-primary settings, revealing that children actively engage in educational processes when play-based methods, such as role-playing, physical movement, singing, and the use of educational tools, are incorporated into classroom activities (Chowdhury & Rivalland, 2011). Despite these promising findings, emerging evidence suggests that many teachers continue to undervalue the developmental significance of play, often favouring more traditional, academic approaches (Ahmed, 2024). This disconnects between pedagogical ideals and classroom realities necessitates further investigation.

While existing research has shed light on the benefits of play-based learning and its potential applications in Bangladesh, there is a significant gap in understanding teachers' perceptions and practices regarding this approach in government primary schools, particularly in Dhaka City. Despite the national pre-primary curriculum's emphasis on play-based activities, many teachers lack the necessary training and resources to effectively implement it.

This study aimed to address this research gap by exploring teachers' perceptions of play-based pedagogy and identifying the challenges they face in implementing it in pre-primary classrooms. By understanding teachers' perspectives, the study seeks to contribute to the development of training programs that can support their professional growth and enhance the quality of early childhood education in Bangladesh. Moreover, the findings of this study will provide valuable insights for policymakers, enabling them to formulate effective policies and programs to promote play-based learning at the pre-primary level.

1.4 Objective of the Study

The national pre-primary curriculum emphasizes the importance of preparing learners for formal schooling through play-based activities. This study aimed to understand teachers' perceptions of play-based teaching-learning approaches and to identify the challenges the teachers face in implementing it in government primary schools in Dhaka City. So, the overall objective of this study is to explore teachers' understanding of play-based pedagogy at the pre-primary level in government primary schools in Dhaka city.

Furthermore, to get more understanding of the overall objective regarding teachers' understanding of play-based pedagogy, several research questions were focused on during the investigation of data and interpretation of results. The specific research questions are-

1. What are the perceptions of the teachers on the play-based approaches to develop students' physical development?
2. What are teachers' views of play-based approaches in fostering students' social and emotional development?
3. What are the perceptions of the teachers on the play-based approaches to develop students' language and communication development?
4. What are teachers' views of the play-based approaches in developing students' cognitive development?
5. How are the activities being implemented using play-based pedagogy in the classrooms?

6. What are the challenges teachers face in implementing play-based pedagogy in the classrooms?

1.5 Operational Definitions

Teachers: For this study, teachers are defined as individuals who teach children aged 4-6 in government primary schools in Dhaka City.

Pre-primary Children: In this study, pre-primary children are children aged 5+ and enrolled in 5+ pre-primary classes in government primary schools.

Play-Based Learning: In this study, we refer to it as 'Play Pedagogy' or 'Play-Based Learning' (Rogers S. , 2010). The study aims to investigate how teachers use both teacher-supported and free play to create enjoyable, hands-on, and engaging learning experiences for children.

Teacher's perception: In this study, it denotes the cognitive and emotional insights, beliefs, perspectives, and attitudes that teachers have about play-based pedagogy. Cothran and Ennis assert that teachers' perceptions heavily influence their instructional methods (Cothran & Ennis, 1997).

1.6 Study Area

This study focuses on exploring teachers' understanding of play-based pedagogy at the pre-primary level in government primary schools in Dhaka City. The specific areas of investigation include:

- Teachers' perceptions: The study will examine teachers' beliefs and attitudes towards play-based approaches in developing students' physical, social, emotional, language, and cognitive skills.
- Implementation of play-based activities: The research will explore the specific types of play-based activities being implemented in classrooms, the frequency of their use, and the ways in which they are integrated into the curriculum.
- Challenges in implementation: The study will identify the primary challenges teachers face in implementing play-based pedagogy, such as lack of training, resources, or support from school administrators.

The scope of the study is limited to government primary schools in Dhaka City. The total number of schools is 488 and located in 12 thanas- Cantonment thana, Demra thana, Gulshan thana, Lalbagh thana, Mohammadpur thana, Mirpur thana, Ramna thana, Sutrapur thana,

Tejgaon thana, Dhanmondi thana, Kotwali thana and Motijheel thana in Dhaka city. In each school, one teacher is assigned to conduct pre-primary school activities. While the findings of this study may have broader implications for early childhood education in Bangladesh, the focus remained on the experiences of teachers in Dhaka City.

1.7 Delimitation of the Study

This study is delimited in several ways to maintain a focused and manageable scope. Geographically, the research is confined to 12 thanas within Dhaka City, thereby excluding perspectives from pre-primary teachers working in rural areas or other urban districts of Bangladesh. This geographic delimitation means the findings may not fully represent the experiences or perceptions of teachers in other regions, particularly where contextual and infrastructural conditions differ significantly.

In terms of participants, the study focuses exclusively on government primary school teachers teaching at the pre-primary level, thus excluding stakeholders such as parents, school administrators, or teachers from private or NGO-run institutions. As a result, the study does not account for potentially diverse understandings and practices of play-based pedagogy beyond government settings.

Additionally, while the research adopts a mixed-methods approach combining surveys, classroom observations, and interviews, its quantitative data were collected only through structured questions via Google Forms. This may limit the depth of understanding regarding complex teacher beliefs and contextual constraints, which could be better captured through more interactive tools such as focus group discussions or longitudinal tracking.

Finally, the study is delimited by its thematic focus, exploring only four key domains of child development, physical, social-emotional, language-communication, and cognitive within the context of play-based pedagogy. It does not explore other relevant dimensions such as inclusive education, gender responsiveness, or the impact of digital tools in early learning environments.

Chapter 02: Review of Literature

This chapter provides a comprehensive review of existing literature relevant to the study, which aims to explore teachers' understanding and implementation of play-based pedagogy in pre-primary classrooms within government primary schools in Dhaka City, Bangladesh. The review critically examines the broader context and impact of play-based approaches in early childhood education, identifies key challenges associated with their implementation, presents recent international and national studies in the field, and analyses the strengths and limitations of existing research. Finally, the chapter identifies specific research gaps that justify the need for this study.

2.1 Exploring Play-Based Pedagogy in Early Childhood Education

2.1.1 Holistic Development through Play

Play-based pedagogy is increasingly recognized as a cornerstone of early childhood education due to its multifaceted contributions to children's development. Engaging in play allows children to explore their environment, fostering cognitive, social, emotional, and physical growth (Piaget, 1951; Vygotsky, 1978). Through play, children cultivate essential problem-solving skills, creativity, and critical thinking abilities that support lifelong learning and development (Whitebread et al., 2017). Additionally, play facilitates the development of social skills such as cooperation, negotiation, and empathy, as children interact with peers in various play scenarios. Physically, play activities enhance both fine and gross motor skills, contributing to overall health and coordination. Emotionally, play offers a secure space for children to express their feelings, foster resilience, and enhance self-regulation skills. This holistic approach to development underscores the significance of incorporating play into early educational settings.

Play-based pedagogy is rooted in constructivist theories, where children actively construct knowledge through hands-on experiences (Dewey, 1986; Cohen, 1974). Unlike traditional teacher-centered instruction, play-based learning allows children to explore concepts at their own pace, enhancing intrinsic motivation and long-term knowledge retention (Hirsch-Pasek, Golinkoff, Berk, & Singer, 2009). Given these benefits, understanding teachers' perceptions and implementation strategies is crucial for optimizing educational outcomes.

2.1.2 Play as a Natural Learning Process

Children are inherently curious and learn best when they are actively engaged in meaningful activities. Play-based learning capitalizes on this natural inclination by providing opportunities

for exploration, experimentation, and discovery (Moyles, 1997). In play-based settings, children are encouraged to ask questions and engage in problem-solving, all within a context that is meaningful and relevant to them (Taylor & Boyer, 2020). This approach not only enhances cognitive development but also fosters a positive attitude towards learning, as children associate education with enjoyment and personal relevance (Ali, Constantino, Hussain, & Akhtar, 2018). By aligning educational practices with children's natural learning processes, play-based pedagogy supports deeper understanding and retention of knowledge (Hedges & Cooper, 2018).

2.1.3 Addressing Educational Equity and Inclusivity

Implementing play-based pedagogy also has implications for promoting educational equity and inclusivity. Play-based approaches can be adapted to accommodate diverse learning needs, cultural backgrounds, and individual interests, making education more accessible and engaging for all children (Danniels & Pyle, 2023). By valuing each child's unique experiences and perspectives, play-based learning fosters an inclusive environment where every child feels respected and supported. This inclusivity is particularly important in diverse educational settings, where traditional, one-size-fits-all teaching methods may not effectively address the varied needs of the student population (Saracho, 2020). Therefore, exploring and implementing play-based pedagogy is crucial for creating equitable and inclusive early childhood education systems.

2.1.4 The Role of Teachers in Facilitating Play-Based Learning

Teachers play a pivotal role in structuring and guiding play-based activities to maximize developmental benefits (Fisher, Hirsh-Pasek, Golinkoff, Singer, & Berk, 2012). Their beliefs about play influence how they design learning environments, select materials, and interact with students (Saracho, 2020). Some educators view play as merely recreational, while others recognize its potential for fostering critical thinking and collaboration (Samuelsson & Carlsson, 2008).

Understanding teachers' perceptions is essential because their instructional decisions directly impact the effectiveness of play-based pedagogy. If teachers lack confidence or training in implementing play-based strategies, they may revert to traditional didactic methods, limiting children’s developmental gains (Wu, Faas, & Geiger, 2020). Thus, exploring teachers' views on play-based learning across different developmental domains physical, social-emotional, cognitive, and language can inform professional development programs and policy reforms.

2.1.5 Global Recognition and Policy Support

Internationally, play-based pedagogy has been endorsed by leading educational frameworks. The United Nations Convention on the Rights of the Child (UNCRC, 1989) recognizes play as a fundamental right of every child. Similarly, the National Association for the Education of Young Children (NAEYC, 2020) in the United States advocates for play as an essential component of early learning. Countries such as Finland and New Zealand have successfully integrated play-based approaches into their national curricula, resulting in improved student engagement and academic performance (Sahlberg & Doyle, 2019).

Despite its recognized benefits, disparities exist in how play-based learning is perceived and implemented across different educational systems (Pyle & Bigelow, 2015). Some schools prioritize academic rigour over play, leading to reduced opportunities for child-initiated exploration (Bassok, Latham, & Rorem, 2016). Investigating teachers' perspectives can help bridge the gap between policy recommendations and classroom practices.

2.1.6 Research on Implementation and Challenges

While the benefits of play-based learning are well-documented, less attention has been given to the practical challenges teachers face in implementing it (Pyle & Danniels, 2017). Factors such as large class sizes, limited resources, curriculum pressures, and parental expectations can hinder effective play-based instruction (Martlew, Stephen, & Ellis, 2011). Additionally, cultural differences influence how play is valued and integrated into classrooms (Rao & Li, 2009).

2.2 Challenges in the Implementation of Play-Based Pedagogy

Despite the growing recognition of the value of play-based pedagogy in early childhood education, several challenges hinder its effective implementation in educational settings. These challenges stem from systemic, pedagogical, and socio-cultural factors that influence teachers' ability to integrate play into classrooms. This section explores the key research challenges in play-based pedagogy, categorized into structural barriers, teacher-related challenges, curriculum constraints, and societal perceptions.

2.2.1 Structural Constraints in Educational Settings

One of the most pressing challenges in studying and implementing play-based pedagogy is the presence of systemic and structural barriers within educational institutions. In many low- and middle-income countries, including Bangladesh, early childhood classrooms are often overcrowded and lack adequate physical infrastructure, play materials, and designated spaces for active or exploratory play (UNICEF, 2019; Ahmed & Douse, 2019). Again, some

researchers cited challenges in implementing play-based learning as the lack of adequate space and overly large class sizes (Martlew, Stephen, & Ellis, 2011). In many schools, especially in underfunded regions, classrooms are overcrowded, making it difficult for teachers to facilitate exploratory and movement-based play activities (Pyle & Danniels, 2017). Research indicates that teachers in such environments often resort to more controlled, teacher-directed activities to maintain order, thereby reducing opportunities for free play (Bassok, Latham, & Rorem, 2016).

Play-based learning requires a variety of manipulatives, sensory materials, and open-ended resources to stimulate creativity and problem-solving (Trawick-Smith, Russell, & Swaminathan, 2011). However, many schools, particularly in low-income areas, lack access to high-quality play materials (Wood, 2014). Financial constraints force educators to rely on limited or improvised resources, which may not fully support developmental play experiences (Pyle & Bigelow, 2015). Research also shows that limited access to teaching-learning materials such as puzzles, storybooks, or manipulatives restricts opportunities for experiential learning through play (Sikder & Banu, 2018). Moreover, rigid curricula with an overemphasis on academic performance and rote memorization leave little room for open-ended, play-based approaches, making it difficult for teachers to integrate such methods into their daily practices (Hirsh-Pasek, Hadani, Blinkoff, & Golinkoff, 2020).

2.2.2 Pedagogical Dilemmas and Teacher Preparedness

Another significant research challenge lies in the pedagogical readiness and confidence of teachers to apply play-based strategies effectively. Many early years educators lack opportunities for professional development that provide them with both theoretical understanding and practical skills necessary to facilitate child-led or inquiry-based learning through play (Walsh, McGuinness, Sproule, & Trew, 2010).

Teachers' personal beliefs about play significantly influence their classroom practices (Wood, 2014). Some educators view play as secondary to ‘real’ academic work, leading to a reluctance to adopt play-based approaches (Samuelsson & Carlsson, 2008). Others may incorporate play but focus too heavily on structured, adult-led activities rather than child-initiated exploration (Pyle & Danniels, 2017).

Many teachers report feeling unprepared to implement play-based pedagogy due to insufficient training (Wu, Faas, & Geiger, 2020). Traditional teacher education programs often emphasize

direct instruction over play-based methods, leaving educators uncertain about how to scaffold learning through play (Pyle & Danniels, 2017). Without proper professional development, teachers may struggle to balance play with academic expectations (Fisher, Hirsh-Pasek, Golinkoff, Singer, & Berk, 2012).

Studies from South Asia, including Bangladesh, indicate that teacher education programs often provide limited guidance on how to balance play and instruction, or how to use play intentionally to meet developmental and academic goals (Rashid & Akkari, 2020; Bassett et al., 2022). This pedagogical gap results in inconsistent implementation, where play is often undervalued or used as a reward rather than a learning tool.

2.2.3 Cultural Misconceptions and Parental Expectations

Cultural perceptions about education further complicate the integration of play into formal schooling. Attitudes toward play vary across cultures, influencing how it is implemented in classrooms (Rao & Li, 2009). For example, some societies prioritize group harmony and teacher-led instruction, while others encourage independent exploration (Trawick-Smith, Russell, & Swaminathan, 2011). These cultural differences present challenges in creating universally applicable play-based models.

Parents often associate effective learning with structured, academic tasks rather than play (Rao & Li, 2009). In cultures where academic success is highly valued, parents may resist play-based approaches, believing they do not adequately prepare children for future schooling (Wu, Faas, & Geiger, 2020). This societal pressure can discourage teachers from fully embracing play-based methods. In many communities, including those in Bangladesh, play is traditionally regarded as distinct from learning and is often considered inappropriate in structured classroom settings (UNICEF, 2018). Parents and school authorities may equate play with a lack of discipline or academic seriousness, leading to resistance against its use in educational contexts. This cultural dissonance creates pressure on teachers to prioritize didactic instruction over play-based learning, thus limiting its use and perceived legitimacy (Rogers & Evans, 2007). Research efforts in this area must therefore contend with socio-cultural narratives that influence both educational practices and policy design.

2.2.4 Curriculum and Assessment Pressures

The growing emphasis on standardized testing and early academic achievement has resulted in a decrease in playtime in favour of direct instruction (Bassok, Latham, & Rorem, 2016). In

many education systems, accountability measures prioritize literacy and numeracy outcomes over holistic development, pressuring teachers to minimize play (Hirsch-Pasek, Golinkoff, Berk, & Singer, 2009).

Even when play is encouraged, teachers often struggle to align play activities with mandated curriculum objectives (Pyle & Bigelow, 2015). In some cases, play is superficially integrated, such as using games to teach math without truly embracing open-ended, exploratory play (Danniels & Pyle, 2018). This misalignment creates tension between policy recommendations and classroom realities.

2.2.5 Policy-Practice Disconnect

Finally, a notable challenge lies in the gap between policy rhetoric and classroom realities. While national and international education policies may endorse play-based approaches in theory, their translation into classroom practice is often inconsistent or superficial. In Bangladesh, for example, the National Education Policy (2010) encourages interactive and participatory methods (MoE, 2010), yet implementation is hampered by a lack of resources, monitoring, and professional training (BANBEIS, 2021). This disconnect makes it difficult for researchers to evaluate the true extent of policy impact and to recommend scalable models of play-based learning.

2.3 Studies on Play-based Pedagogy

2.3.1 Global Evidence of the Impact of Play-Based Pedagogy

Internationally, numerous studies underscore the positive effects of play-based learning across multiple domains of early development. For instance, (Weisberg, Hirsh-Pasek, & Golinkoff, 2013) found that guided play significantly enhances children's problem-solving, language acquisition, and social skills more effectively than direct instruction. Similarly, (Whitebread, Coltman, Jameson, & Lander, 2009) argue that self-regulated learning, emotional control, and executive function are significantly improved through child-initiated and teacher-guided play. Another multi-country review by (Zosh, Hassinger-Das, & Laurie, 2022) emphasized that high-quality play promotes deeper learning and greater engagement, particularly when aligned with children's developmental stages and interests.

Studies in high-income contexts such as Canada, Finland, and Australia have shown how play-based learning models can be effectively integrated into national curricula. For example, the Finnish ECEC system combines free and structured play within a national framework that

views play as central to learning and development (Karila, 2012). Likewise, the Canadian Kindergarten Program (2016) incorporates play as a foundational component to promote inquiry-based learning and child agency.

Physical Development Through Play

Studies have demonstrated that play-based approaches significantly enhance children's motor skills and coordination of physical movements (Timmons et al., 2012). Active play, including climbing, running, and manipulative games, aids in muscle development and cardiovascular fitness (Pellegrini & Smith, 1998). A meta-analysis by Barnett et al. (2016) found that children engaged in unstructured play showed better physical growth compared to those in sedentary, structured learning environments.

Social-Emotional Development

Research highlights play as a critical medium for developing empathy, cooperation, and emotional regulation (Lillard et al., 2013). A study by (Elias & Berk, 2002) found that sociodramatic play enhances self-regulation and reduces behavioral issues. Similarly, collaborative play fosters conflict-resolution skills and peer bonding (Howes & Matheson, 1992).

Language and Cognitive Development

Play-based learning promotes vocabulary expansion, narrative skills, and problem-solving abilities (Weisberg, Hirsh-Pasek, & Golinkoff, 2013). A longitudinal study by Weisberg, Zosh, Hirsh-Pasek, & Golinkoff (2013) found that children in play-rich preschools outperformed peers in traditional settings on language and cognitive assessments. Constructive play (e.g., block-building) has been linked to spatial reasoning and mathematical thinking (Ness & Farenga, 2016).

Teacher Practices and Implementation Models

Recent studies emphasize the role of teacher scaffolding in play-based learning (Moore, Edwards, Cutter-Mackenzie, & Boyd, 2014). Research in Canada (Danniels & Pyle, 2018) and Australia (Edwards, 2021) identifies a continuum from child-directed to teacher-guided play, suggesting balanced approaches yield optimal outcomes. However, challenges such as curriculum rigidity and assessment pressures persist (Haile & Ghirmai, 2024).

2.3.2 South Asian and Regional Perspectives

In South Asia, research into play-based learning is comparatively limited but growing. In India, (Sriprakash, 2012) documented how early childhood educators attempt to integrate play-based approaches within a highly academic and competitive education culture. Similarly, a study by (Reetu, Renu, & Adarsh, 2017) highlighted the tensions Indian teachers face when balancing play with the pressure for school readiness. In Nepal, Dahal (2024) found that while teachers acknowledged the benefits of play, their actual classroom practices remained largely traditional due to a lack of professional training and learning resources.

These regional studies illustrate the need for culturally sensitive adaptations of play-based models and suggest that merely introducing play-based curriculum frameworks is insufficient without systemic support, training, and community engagement.

2.3.3 Research on Play-Based Learning in Bangladesh

In Bangladesh, empirical studies on play-based pedagogy are relatively recent but expanding, particularly with the government's integration of pre-primary education into the national system. One notable study by (Akther, 2024) investigated early years pedagogy and found that while teachers supported the idea of learning through play, their practices were often constrained by curriculum demands, lack of resources, and traditional views of teaching. The study concluded that professional development was key to translating theoretical support for play into effective practice.

Ayun (2024) in a study focusing on urban slum schools in Dhaka, reported that play-based methods were seldom used due to limited space, materials, and inadequate teacher preparation. However, teachers who received training under NGO-led programs demonstrated more confidence and creativity in incorporating play into lessons. Similarly, a BRAC Institute of Educational Development (2020) study found that in non-formal settings, play-based learning helped children improve their communication, critical thinking, and classroom engagement, although scaling such models remained a challenge.

Moreover, Alam (2022) and Rahman, Mohammed, Akter, & Chowdhury (2020) examined government primary schools and observed that the implementation of play-based learning often depended on individual teacher motivation rather than institutional policy or systemic support.

This research emphasized the need for sustained teacher mentoring and curriculum redesign to align play-based activities with learning outcomes.

More recently, UNICEF Bangladesh and the Directorate of Primary Education have collaborated to roll out play-based pre-primary programs in selected areas. Evaluation reports (UNICEF, 2023) suggest that children exposed to these programs showed greater enthusiasm, better school readiness, and stronger language and numeracy skills. However, issues like teacher workload, parent misconceptions, and classroom crowding continued to limit broader adoption,

2.4 Play-based Pedagogy: Strengths, Limitations and Insights

While there is substantial consensus on the developmental benefits of play, the global and local studies reviewed reveal varied implementation outcomes, contextual constraints, and conceptual ambiguities.

2.4.1 Strengths of Play-Based Pedagogy

A major strength consistently identified across the literature is that play-based pedagogy nurtures holistic development. International studies have affirmed that when play is integrated with learning objectives, especially through guided or structured play, it promotes higher-order thinking, creativity, collaboration, and self-regulation (Zosh et al., 2017; Weisberg et al., 2016). Similarly, in the Bangladeshi context, Kabir and Akhter (2014) found that play-based environments fostered student curiosity and participation, especially in early grades.

Moreover, pedagogical advantages include increased student engagement, differentiated learning opportunities, and an inclusive atmosphere where children with diverse needs can thrive. Whitebread et al. (2012) highlighted the alignment of play with brain development, emphasizing its role in strengthening attention, memory, and executive functioning—skills critical for academic learning.

Research in Bangladesh indicates that play-based interventions improve school readiness, particularly in rural areas where formal preschool access is limited (Aboud & Akhter, 2011). A study by Islam & Munni (2016) found that children in play-based kindergartens showed greater enthusiasm for learning compared to those in rote-memorization settings.

2.4.2 Conceptual Misunderstandings

Despite these benefits, a recurring criticism is that the concept of play is often misunderstood or undervalued, particularly in cultures where academic rigour is prioritized from early childhood. In Bangladesh, studies have reported that many teachers and parents equate learning with formal instruction and see play as time-wasting (Rahman et al., 2019; BRAC IED, 2020). This perception undermines the implementation of play-based approaches even when policies support them.

Globally, there is also ongoing debate regarding the balance between child-led free play and adult-guided learning. While guided play is shown to be more effective in achieving curricular goals (Weisberg et al., 2016), it demands careful teacher facilitation, which is often lacking due to limited training.

2.4.3 Structural Constraints and Implementation Gaps

Another critical issue is the gap between policy and practice. In Bangladesh, the National Education Policy (2010) emphasizes child-centred pedagogy, but implementation is hindered by classroom overcrowding, lack of play materials, and rigid timetables (Alam & Hoque, 2021). Teachers report pressure to cover textbook content, leaving little room for flexible or play-oriented instruction.

Similar trends are evident in other low- and middle-income countries. For example, Upadhyay and Mishra (2019) in India found that even when teachers were trained, inadequate infrastructure and high student–teacher ratios limited the use of play. These findings highlight the structural barriers that prevent effective delivery of play-based pedagogy.

In Bangladesh, where exam-oriented education dominates, parents and administrators often perceive play as ‘non-productive’ (Ahmed et al., 2019). Teachers report pressure to prioritize literacy and numeracy drills over play, fearing poor performance on standardized tests (Khanam et al., 2021).

2.4.4 Teacher Capacity and Stakeholder Engagement

One major lesson emerging from both global and Bangladeshi studies is the importance of sustained teacher training and mentoring. Studies indicate that one-off training is insufficient; rather, ongoing professional development that includes modelling and reflection is necessary for changing classroom practices (Kabir & Akhter, 2014; UNICEF, 2021). Again, many

teachers struggle to integrate play with curriculum goals. In Bangladesh, a study by (Akther, 2024) found that 60% of pre-primary teachers had no training in play-based methods, leading to superficial implementation (e.g., using games only for memorisation).

Additionally, contextual adaptation is crucial. Successful programs, like those implemented by NGOs in Bangladesh (e.g., Save the Children, BRAC), emphasize the use of low-cost local materials and culturally familiar play activities, making the approach more feasible and acceptable in under-resourced settings (BRAC IED, 2020).

Lastly, stakeholder engagement, especially parental awareness is critical. Without understanding the value of play, parents may resist non-academic classroom practices. Studies such as Rahman et al. (2019) and UNICEF (2021) underscore the role of community campaigns in shifting these mindsets and building support for play-based learning.

2.5 Research Gap: What Is Worth Investigating Further?

Despite growing global and national interest in play-based pedagogy, significant gaps remain in understanding its implementation, especially in the context of Bangladesh's government primary schools.

2.5.1 Limited Exploration of Teachers' Perceptions of Child Development

While international studies have extensively documented the benefits of play in fostering physical, cognitive, linguistic, and socio-emotional development (Zosh et al., 2017; Weisberg et al., 2016), there is limited research in Bangladesh that holistically examines how teachers perceive the role of play across all these developmental domains. Most available studies have explored play-based learning in fragmented ways, focusing on one or two domains, such as physical activity or cognitive skills (Kabir & Akhter, 2014; Rahman et al., 2019), but not examining the full spectrum of developmental benefits as perceived by teachers.

Given that teachers' beliefs significantly influence their pedagogical decisions (Pyle & Danniels, 2017), understanding their views across all aspects of development, like physical, social-emotional, language, and cognitive, is essential. This gap directly aligns with the first four research questions of the current study, which explore teachers' understanding of how play supports various dimensions of child development.

2.5.2 Under-Documented Realities of Classroom Implementation

There is also a paucity of evidence on how play-based pedagogy is actually implemented in Bangladeshi classrooms, particularly in government pre-primary settings. While the National

Education Policy (2010) promotes child-friendly and activity-based learning, practical implementation often diverges from policy due to systemic challenges such as time constraints, large class sizes, and lack of resources (UNICEF, 2021; World Bank, 2019).

Studies such as BRAC IED (2020) and (Save the Children, 2016) have documented some success stories in NGO-supported schools; however, these do not reflect the typical conditions of government primary schools. The current study's fifth research question, exploring how play-based activities are implemented, aims to generate evidence that is grounded in the realities of public education systems in urban Bangladesh. This contributes to the broader literature by shedding light on the gap between curriculum guidelines and actual classroom practices.

2.5.3 Insufficient Insight into Context-Specific Barriers

Another major research gap concerns the socio-cultural and institutional challenges that hinder the use of play in early years classrooms. While international literature has identified common challenges such as limited training and resource constraints (Whitebread et al., 2012; Upadhyay & Mishra, 2019), there is limited localized data on the unique barriers faced by Bangladeshi teachers, including low parental awareness, administrative pressure, and infrastructural limitations (Ayun, 2014; BRAC IED, 2020).

Similarly, while some studies advocate for increased teacher training and parental engagement, they often do not provide detailed data on what forms of support teachers themselves prioritize. This study addresses these gaps through its final two research questions, exploring the challenges faced and the support needed for implementing play-based pedagogy, based on teacher feedback, classroom observations, and interviews. The findings will help develop more grounded and actionable recommendations for stakeholders.

2.5.4 Need for Mixed-Methods Research to Capture Complex Realities

Most prior studies in the Bangladeshi context have relied on either quantitative surveys or qualitative interviews, rarely combining both to triangulate findings (Kabir & Akhter, 2014; UNICEF, 2021). This methodological gap limits the depth and reliability of current knowledge. The present study adopts a mixed-methods approach, integrating quantitative data from teacher surveys with qualitative insights from classroom observations and interviews. This approach allows for a nuanced understanding of both the prevailing attitudes and the lived realities of

classroom instruction, offering a more complete picture of the ecosystem surrounding play-based pedagogy.

The current study addresses several critical research gaps in the Bangladeshi context. It investigates how teachers perceive the role of play in supporting all domains of child development, how play-based activities are implemented in real classrooms, and what challenges and supports exist within the system. By mapping teachers' reported challenges against national policy goals, the study can: advocate for targeted investments (e.g., play material kits for rural schools), and recommend monitoring systems to ensure play-based mandates are implemented. Moreover, by generating context-specific, empirical insights, the study contributes to national policy on early childhood education. This evidence is vital for designing effective, inclusive, and sustainable play-based pedagogical interventions in Bangladesh's government primary schools.

2.6 Conceptual Framework of the Study

This study aims to explore teachers' understanding of play-based pedagogy, which encompasses their conceptual knowledge of what constitutes play and how it supports learning. This includes teachers' beliefs about the developmental benefits of different types of play, such as structured, unstructured, role-play, and free play, and their understanding of how play contributes to physical, cognitive, language, and socio-emotional development. It also reflects their awareness of curriculum guidelines and how they position play-based approaches in relation to more traditional teaching methods.

The other component focuses on classroom implementation practices, exploring how teachers translate their understanding of play-based learning into action. This includes the kinds of play activities they use, how they integrate play into daily routines and learning goals, and their level of active facilitation during play. This component captures the realities of pedagogical practice and the extent to which play-based methods are embedded in pre-primary teaching in government schools.

Another component addresses the contextual and institutional factors that shape teachers' ability to implement play-based pedagogy. These include the availability of appropriate play materials, space, and time; the flexibility of the curriculum; the teacher-student ratio; and the extent of administrative and peer support. It also encompasses broader sociocultural dynamics

such as parental expectations and community attitudes towards early childhood education and the role of play in learning.

This study also highlights teachers' perceived support needs and opportunities for improvement. Drawing from teachers' voices, this component captures their expressed need for capacity-building opportunities, improved access to culturally relevant play materials, administrative encouragement, and community awareness initiatives. These articulated needs inform actionable recommendations aimed at enhancing the sustainability and quality of play-based pedagogy in government pre-primary classrooms.

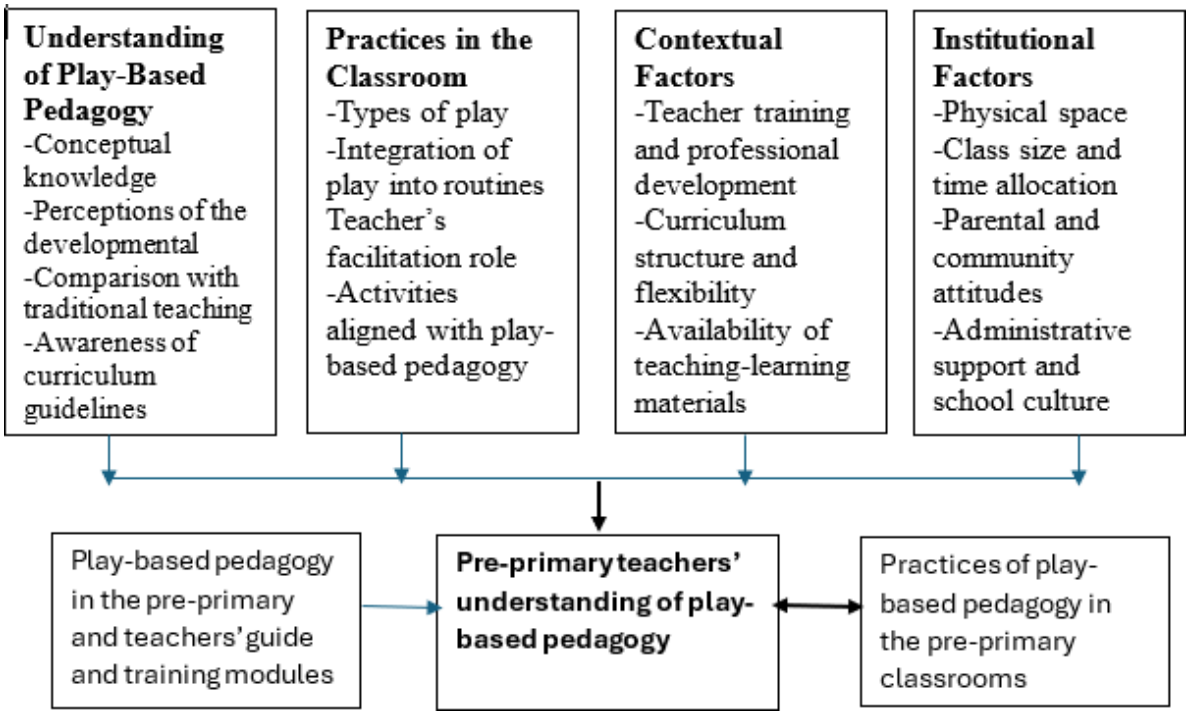


Figure 1: Conceptual framework of the study

By exploring the interconnectedness of these dimensions, the study generates a holistic picture of the current status, gaps, and potentials of play-based pedagogy in Dhaka's government pre-primary classrooms and identifies recommendations for different stakeholders to strengthen its practice and impact.

Chapter 03: Study Methodology

The Methodology chapter describes the research design, sampling techniques, data collection tools, and analytical framework used to investigate teachers' perceptions of play-based pedagogy. Additionally, this chapter elaborates on the data collection process and the strategies for triangulating and analyzing the data.

3.1 Research Design

This study adopted a convergent parallel mixed-methods design, combining quantitative and qualitative research techniques. Quantitative data were collected through a cross-sectional survey of teachers and classroom observations. Qualitative data were gathered through in-depth interviews, observations, and document analysis. This mixed-methods approach will allow for a comprehensive exploration of teachers' perceptions of play-based pedagogy, as suggested by Creswell (2012), who states 'the purpose of a convergent (or parallel or concurrent) mixed methods design is to simultaneously collect both quantitative and qualitative data, merge the data, and use the results to understand a research problem' (Creswell, 2012).

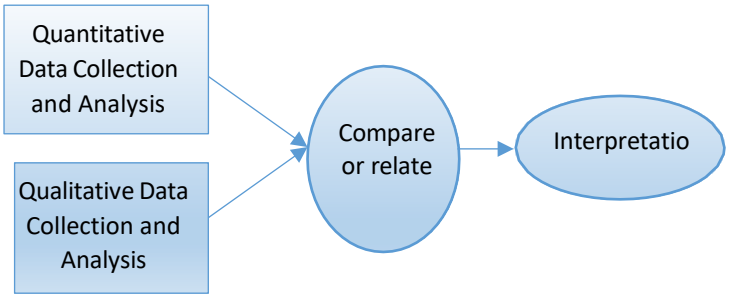


Figure 2: Research design of the study

3.2 Sampling

This study employed a mixed-methods approach, including surveys with pre-primary schoolteachers, classroom observations, and face-to-face interviews. The sampling technique varies based on the specific data collection methods and the need to represent the study locations. The following sections outline the sample and sampling techniques for this study.

3.2.1 Quantitative sample and sampling strategies

This study covers the 12 thanas in Dhaka City. A total of 342 government schools are implementing pre-primary activities across the 12 thanas in Dhaka city. In each school, one teacher is assigned to conduct the teaching-learning activities at the pre-primary level. So, considering the key respondents, the teachers who teaches at the pre-primary level are the

primary sampling unit (PSU) for this study. Taking the total population of 342 teachers into consideration, the following formula (Cochran, 1977) used to estimate the sample for the study.

$$n = \frac{\frac{z^2 \times p(1-p)}{e^2}}{1 + \frac{z^2 \times p(1-p)}{e^2 N}}$$

[n= required sample size; z= 1.96 (95% confidence level); p= 0.5 (estimated proportion); e= .05 (margin of error); N=342 (population size)]

Based on this calculation, the proposed teacher's sample size is 181 at 95% confidence level, and 5% margin of error. So, the required minimum sample size is **181.** The teacher's structured questionnaire was developed using Google Forms and sent to more than the sample size of teachers electronically to avoid data missing and obtain the minimum sample size. At last, a number of 209 pre-primary teachers from 12 thanas responded using Google Forms. So, the final sample size is **209**. The following table shows the quantitative sample-

Table 1: Distribution of teachers' samples for quantitative data by locations

Thana Name of Dhaka City Corporation	**Number of Respondents**
Cantonment	11
Demra	42
Gulshan	28
Lalbagh	19
Mohammadpur	8
Mirpur	20
Ramna	5
Sutrapur	16
Tejgaon	3
Dhanmondi	8
Kotwali	14
Motijheel	35
Total	**209**

3.2.2 Qualitative sample and sampling strategies

To obtain an in-depth understanding of the study objectives and research questions, the pre-primary teachers or the teacher who is assigned to teach at the pre-primary level were selected as qualitative data sources. The study team interviewed those teachers whose classes are being observed. The following table shows the qualitative respondents for in-depth interviews (IDIs).

Table 2: Distribution of teachers' samples for qualitative data by locations

SL	Location: Name of Thana	Number of teachers
1	Cantonment	1
2	Demra	1
3	Gulshan	1
4	Lalbagh	1
5	Mohammadpur	1
6	Mirpur	1
7	Ramna	1
8	Sutrapur	1
9	Tejgaon	1
10	Dhanmondi	1
11	Kotwali	1
12	Motijheel	1
	Total	**12**

3.4 Research Tools

Several data collection tools used to collect the primary and secondary data from the study locations as follows:

a) Formatted Survey Questionnaire

To gather quantitative data on teachers' perceptions and experiences with play-based pedagogy, a formatted survey questionnaire was administered to pre-primary teachers in Dhaka City. The questionnaire consists of closed-ended questions using Likert scales and multiple-choice options to measure teachers' beliefs about the benefits and challenges of play-based approaches, their frequency of use, and their satisfaction with the available resources and support. Moreover, questions were explored teachers' beliefs about the effectiveness of play-based approaches in promoting students' physical, social, emotional, language, and cognitive development. The survey also included demographic information to provide context for the findings.

b) Classroom Observation Checklist

To gather quantitative and qualitative data on the implementation of play-based pedagogy in classrooms, a classroom observation checklist was developed. The checklist focuses on observing teacher-student interactions, student engagement, the types of play-based activities being used, and the ways in which these activities contribute to students' development. Observers visited classrooms to systematically record their observations, providing a detailed picture of the classroom environment and the implementation of play-based approaches. The

study team spent the full schooling period observing teaching-learning activities of pre-primary classes.

c) In-depth Interview Guide (IDI)

To gain deeper insight into teachers' perspectives and experiences with play-based pedagogy, in-depth interviews were conducted with a selected group of pre-primary teachers. The interview guidelines focus on exploring teachers' beliefs about the benefits and challenges of play-based approaches, their strategies for implementing these approaches, and the support they receive from their school community. Semi-structured interviews allowed for flexibility in exploring emerging themes and gaining a rich understanding of teachers' perspectives.

d) Document Analysis

To provide a broader context for the study, document analysis was conducted to examine relevant documents such as the pre-primary curriculum, early childhood development policies, teacher training materials, and existing research on play-based pedagogy in Bangladesh. This secondary data analysis helped to identify any relevant guidelines, recommendations, or trends related to the implementation of play-based approaches in the study area.

3.5 Data Collection Process

To ensure the validity, reliability, and appropriateness of the research instruments, the draft tools were piloted with the non-sampled respondents. The pilot data was analyzed to evaluate each question, and necessary revisions were made based on the findings and feedback from NAPE personnel.

The study team collected teachers' perception-related data digitally due to the limitation of human resources. Prior to administering the formatted survey questionnaire, the research team sought consent from the respondent teachers to participate in the study. For formatted questionnaire surveys, Google Forms was developed on the digital platform. It is noted that the study team will take help from local Thana Resource Centres or Thana Education Offices to collect data from 209 pre-primary teachers.

Before administering the interview schedule, the research team visited schools to establish rapport with teachers and obtain their consent to participate in the study. After obtaining consent, interviews were conducted in-person using the prepared interview schedule, allowing for flexibility to explore emerging themes.

Classroom observations were conducted in-person using a structured observation checklist. Detailed notes were taken to capture the specific activities and interactions observed. It is important to note that the observations were conducted without disrupting the regular classroom routine.

3.6 Data analysis

Data were analyzed using a combination of both quantitative and qualitative methods where necessary. Quantitative data were analyzed through both descriptive statistics, like mean, percentage distribution etc., and analyzed using a Statistical Package for Social Science (SPSS) trial version.

The narrative data were analyzed following the data-driven thematic approach suggested by Braun and Clarke focusing on the objectives of the study (Braun & Clarke, 2006). According to Braun and Clarke (2006), a six-phase approach to thematic analysis includes-



Figure 3: Steps of thematic analysis

3.7 Triangulation of Data

Triangulation entails the deliberate integration of quantitative and qualitative methodologies as a robust approach to enhancing a research design, based on the premise that no single method can sufficiently address the issue of causal factors (Turner & Turner, 2009). Data collected from formatted questionnaires, interviews and observations were triangulated to have a more comprehensive understanding of teachers' perceptions of play-based pedagogy.

3.8 Referencing System

In this study, the American Psychological Association (APA), 7th edition was followed in doing in-text citations and referencing throughout the document.

3.9 Ethical consideration

This study team is highly concerned with early-grade children, child protection, teacher's and coping mechanisms, and the questions to be asked are private and sensitive. To mitigate the issues, the following strategies were taken-

- The information generated through interviews is also sensitive. They must not be divulged to others for the sake of ensuring the privacy and confidentiality of the respondent and family.
- The personal identity of the respondent, along with the data and information thus collected, will be completely restricted and will not be shared with anyone other than the study team (in a restricted way).
- The computer data file generated from the data/information recorded in the questionnaires for analysis will contain only the identity number of the respondents. Thus, the identity of any case or adolescent during data management, data analysis and interpretation will be restricted, and data will be anonymous.

Another important issue for all field personnel is understanding the code of conduct, child rights and child protection, human rights and their application during field operations. The study team maintained the above ethical issues throughout the study.

Chapter 04: Data Analysis

This chapter presents a comprehensive analysis of the data collected to explore teachers' understanding and implementation of play-based pedagogy in government pre-primary classrooms in Dhaka City. Drawing on both quantitative summaries and qualitative insights, the analysis focuses on how play-based learning is practised in the classroom, the nature of teacher-student interactions, and the challenges faced by educators. Class observations, alongside in-depth responses from teachers, provide a contextual understanding of instructional practices, student engagement, resource use, and environmental conditions. The chapter is organized into themes that emerged from the data, aligned with the study's research questions.

4.1 Demographics of the respondents

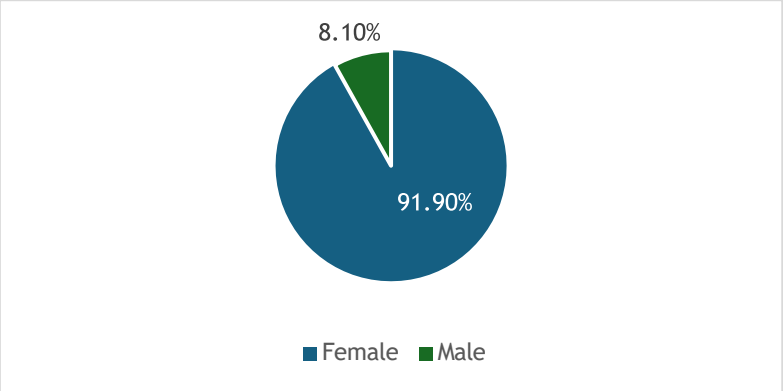


Figure 4: Gender of the respondents

Out of 209 pre-primary teachers, 91.9% are female and 8.1% are male. This could happen as most of the female teachers are recruited as pre-primary teachers.

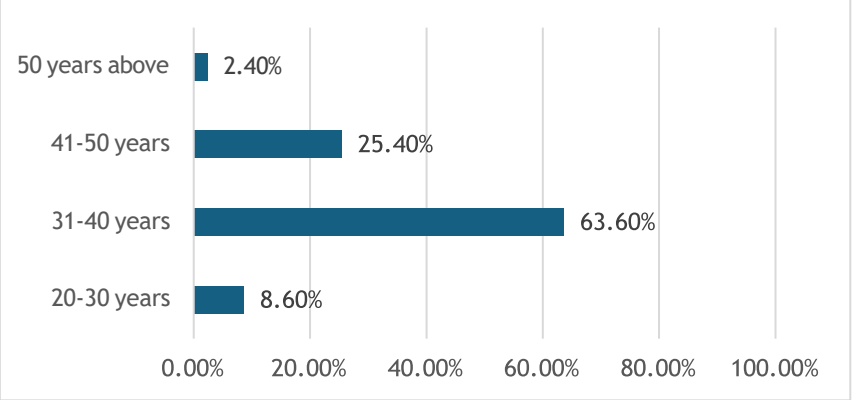


Figure 5: Age Distribution of Respondents

Figure 5 represents the age distribution of the 209 pre-primary teachers who participated in the study. The data reveals that the majority of the respondents fall within the 31–40 years age group, which accounts for 63.6% of the total participants. The 41–50 years age group represents the second-largest proportion, comprising 25.4% of the sample. The younger cohort, aged 20–30 years, makes up only 8.6% of the respondents. Only 2.4% of the teachers were aged above 50 years, suggesting that very few teachers in the late stages of their careers are currently working in pre-primary classrooms, possibly due to retirement or reassignment to other grades or roles.

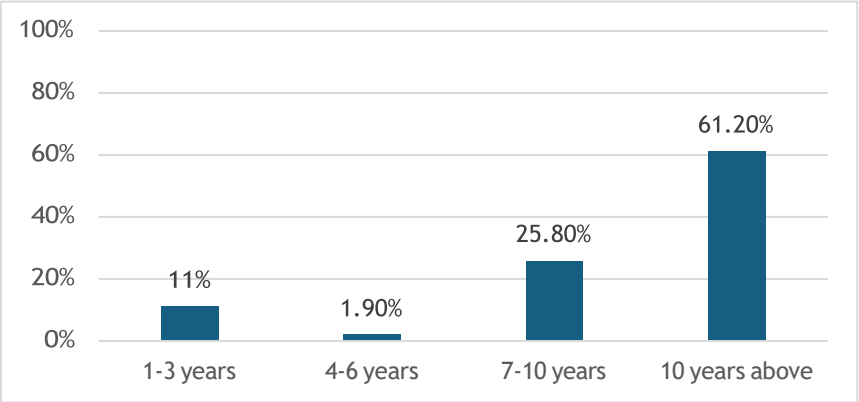


Figure 6: Teaching Experiences

The figure shows the distribution of teaching experience of pre-primary teachers surveyed. The data shows a significant concentration of highly experienced teachers, with 61.2% of respondents having more than 10 years of teaching experience. This indicates that a majority of the teachers have had a long tenure in the profession, potentially have practical classroom knowledge and a strong understanding of students. Teachers with 7 to 10 years of experience represent the second-largest group, comprising 25.8% of the respondents. In contrast, relatively few respondents are in the early stages of their careers. Only 11% of the teachers have 1 to 3 years of teaching experience, and 1.9% have 4 to 6 years of experience.

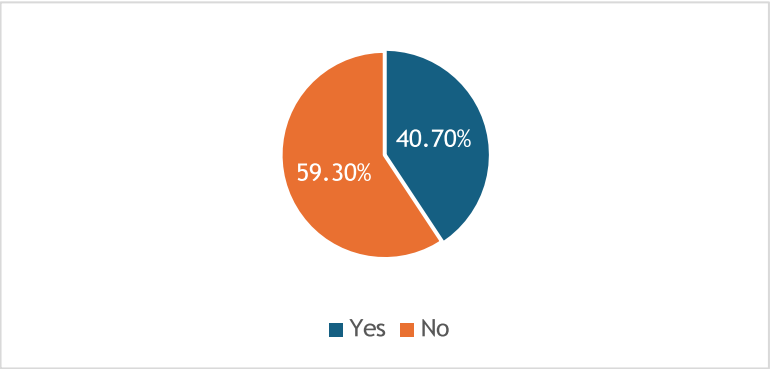


Figure 7: Teachers' training on play-based pedagogy

Figure 7 reveals a concerning gap in professional development related to play-based pedagogy among pre-primary teachers. Only 40.7% of the respondents reported having received training on play-based pedagogy, while a significant 59.3% stated that they had not received any such training.

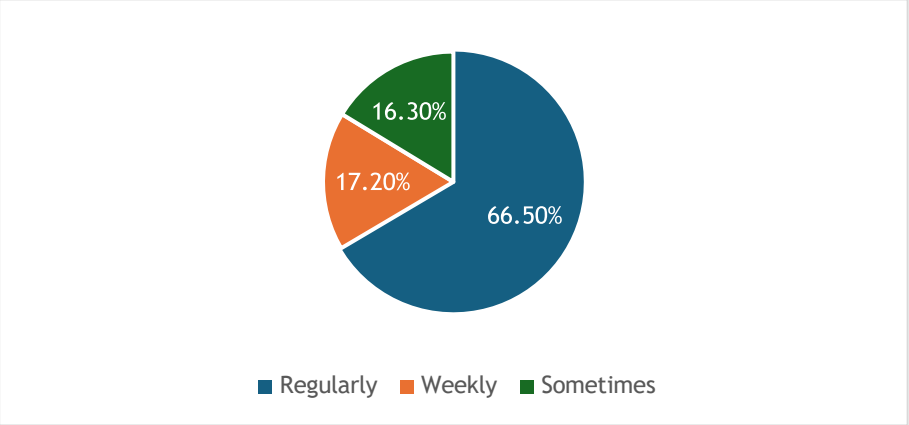


Figure 8: Integration of play-based activities in teaching practices

The data illustrate the extent to which play-based activities are being incorporated into teachers' regular classroom instruction. A majority of teachers (66.5%) reported that they integrate play-based activities regularly into their daily lessons, suggesting a high level of awareness and commitment to using play as a pedagogical tool in pre-primary education. Meanwhile, 17.2% of respondents reported incorporating play-based approaches on a weekly basis, and 16.3% said they use them only sometimes.

4.2 Teachers' Understanding of the Nature of Play-Based Learning

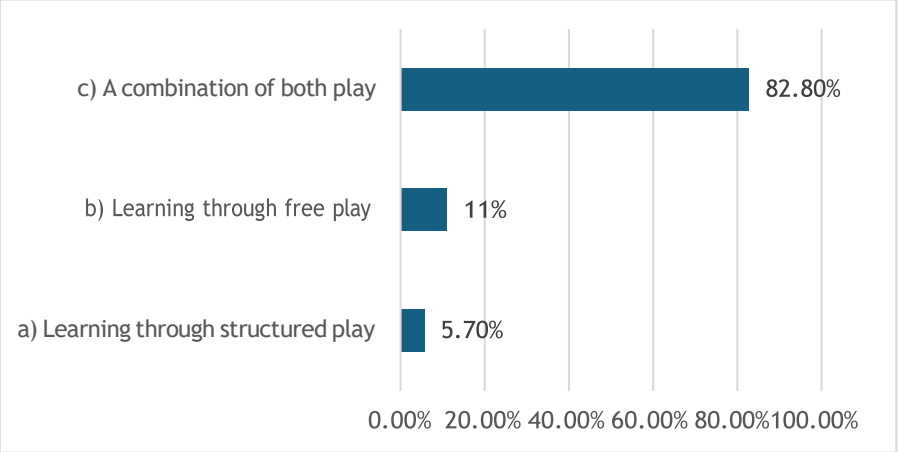


Figure 9: Teachers' conception of play-based learning

The figure provides insight into how teachers conceptualise play-based learning in the context of pre-primary education. The findings reveal that the majority of teachers (82.8%) define play-based learning as a combination of both structured and free play, reflecting a balanced understanding of the pedagogical value of both guided and spontaneous play experiences. A smaller proportion of teachers hold more limited views, with 11% identifying play-based learning solely as free play, and 5.7% defining it exclusively as structured play.

Table 3: Teachers' Perceptions of the Goals of Play-Based Learning

Statements	**Respondents**
a) Developing social skills	129 (61.7%)
b) Enhancing creativity and imagination	188 (90%)
c) Building physical coordination and motor skills	171 (81.8%)
d)Improving language and communication skills	150 (71.8%)
e) Fostering cognitive development	164 (78.5%)

Table 3 presents data on teachers' views regarding the primary developmental goals of play-based learning in pre-primary classrooms. A significant majority of teachers **(**90%**)** identified enhancing creativity and imagination as a key goal of play-based learning. In addition, a large proportion of respondents **(**81.8%**)** acknowledged the role of play in building physical coordination and motor skills, highlighting their awareness of how active, hands-on play activities support gross and fine motor development. Further, 78.5% of the teachers agreed that play-based learning fosters cognitive development, and 71.8% cited its role in improving language and communication skills. However, slightly fewer respondents **(**61.7%**)** selected developing social skills as a key objective of play-based learning. Apart from these, some

teachers also shared that the play-based pedagogy creates cordial relationships among learners. It also helps the learners to sustain their learning.

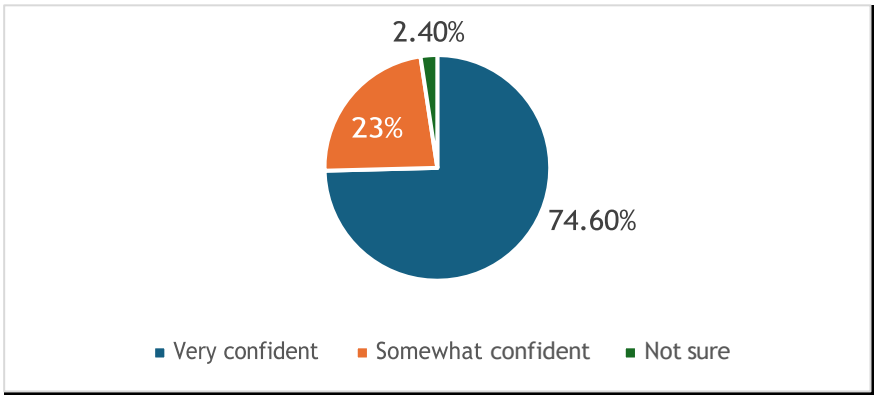


Figure 10: Teacher's confidence in the implementation of play-based pedagogy

Figure 10 depicts data on the self-reported confidence levels of teachers in implementing play-based pedagogy in pre-primary classrooms. The majority (74.6%) of teachers reported feeling very confident in implementing play-based approaches. Additionally, 23% of the teachers reported themselves as somewhat confident, indicating that while they may understand and accept the value of play-based learning, they could benefit from further support, training, or practical guidance to strengthen their implementation practices.

4.3 Reflection of the play-based pedagogy in the pre-primary curriculum:

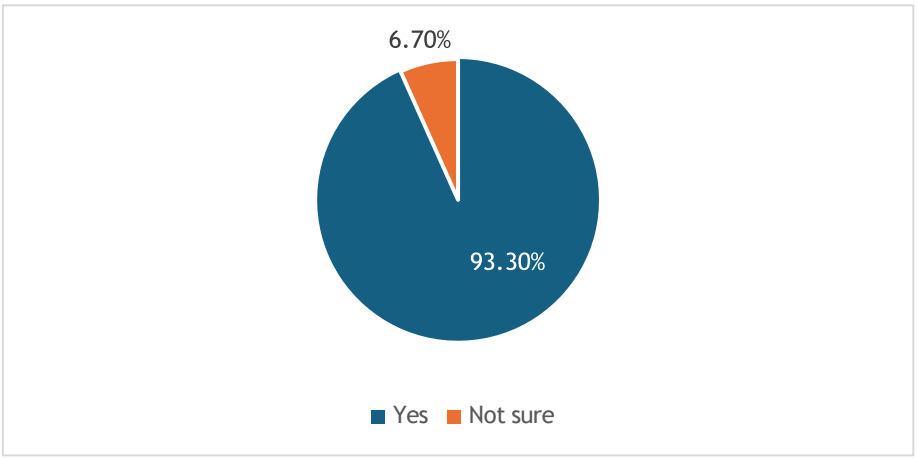


Figure 11: Play-based approach is emphasized in the pre-primary curriculum

Figure 11 shows that a significant majority of the respondents (93.3%) believe that the play-based approach is adequately emphasized in the pre-primary curriculum. Only a small proportion (6.7%) reported uncertainty regarding the curriculum's emphasis. This suggests that

the overarching intent of the national curriculum, to promote learning through play in early childhood education, is largely recognised and understood by the teachers.

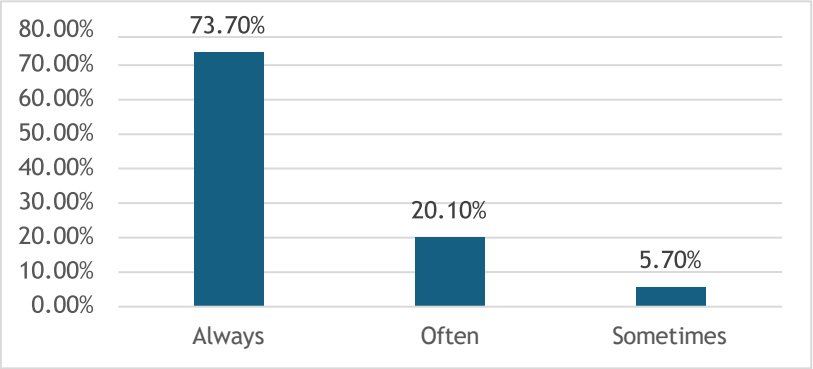


Figure 12: Referring pre-primary curriculum while planning play-based activities

This positive perception is reinforced by Figure 12, which indicates that 73.7% of teachers always refer to the curriculum when planning their play-based activities. An additional 20.1% refer to it often, while only 5.7% do so sometimes. This shows that the majority of teachers use the curriculum as a central guiding document when designing their classroom activities, thereby promoting alignment between policy and practice.

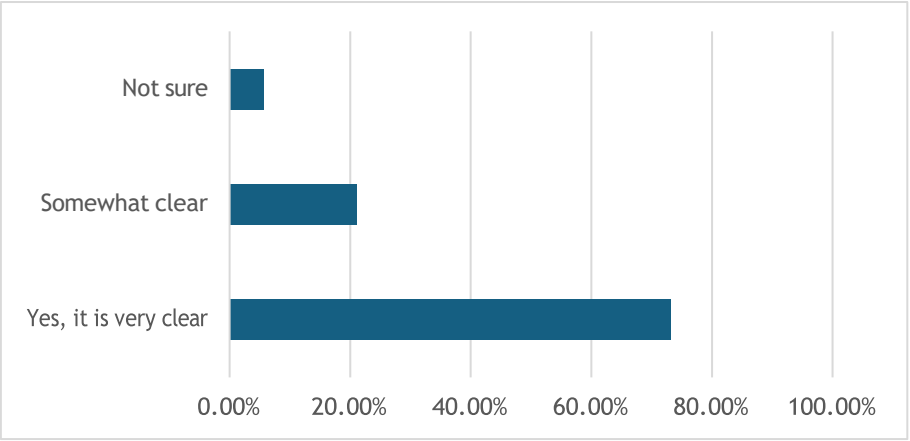


Figure 13: Guidance on integrating play activities given in the curriculum

Further clarification is provided by Figure 13, which reveals that 73.2% of teachers believe that the curriculum provides very clear guidance on integrating play into lessons, while 21.1% find the guidance somewhat clear. A small group (5.7%) remains unsure. These findings suggest that the curriculum is not only present in planning practices but is also understood in terms of instructional design and classroom implementation.

4.4 Comparison of play-based pedagogy to traditional methods

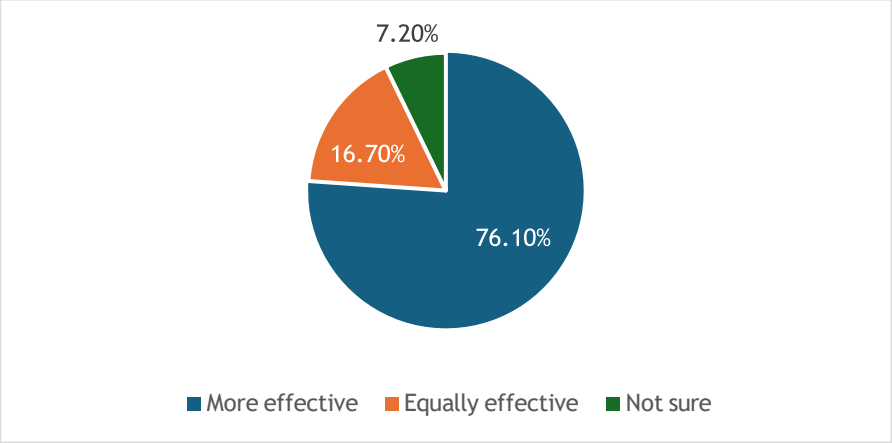


Figure 14: Effectiveness of play-based learning compared to traditional teaching

Teachers participating in the study expressed a strong preference for play-based learning over traditional teaching methods. According to Figure 14, a significant majority **(**76.1%**)** of respondents consider play-based learning more effective than traditional teaching methods, while 16.7% regard both methods as equally effective. Only 7.2% were uncertain. This suggests a widespread recognition among teachers that play-based approaches are effective, especially for fostering holistic early childhood development.

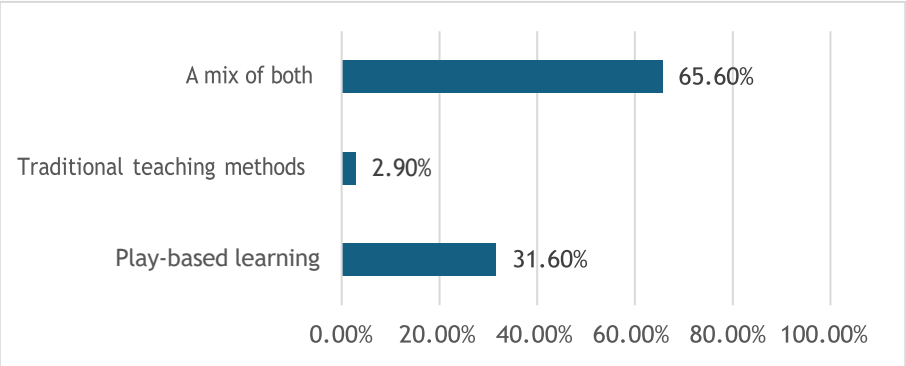


Figure 15: Easier implementation in classroom teaching

In terms of feasibility, Figure 15 reveals teacher perspectives. While only 31.6% find play-based learning easier to implement, the majority **(**65.6%**)** prefer a mix of both play-based and traditional methods. A negligible proportion **(**2.9%**)** finds traditional teaching alone easier to implement. This mixed preference suggests that while teachers recognize the value of play-based pedagogy, they also acknowledge the practical limitations and therefore see the need for a balanced, blended instructional approach.

Table 4: Advantages of play-based learning compared to traditional method

Statements	% of Respondents
Better student engagement	188 (88%)
Encourages creativity and imagination	191 (91.4%)
Builds social and emotional skills	157 (75.1%)
Enhances holistic development	14 (5.6%)

Table 4 highlights the perceived advantages of play-based learning in comparison to traditional methods. A large number of respondents identified several educational benefits: 91.4% believe it encourages creativity and imagination, 88% report better student engagement, 85.6% say it enhances holistic development, and 75.1% observe that it builds social and emotional skills.

Table 5: Challenges in implementing play-based learning compared to traditional method

Statements	% of Respondents
Lack of resources	168 (80.4%)
Limited training for teachers	151 (72.2%)
Time constraints	105 (50.2%)
Large class sizes	130 (62.2%)
Pressure to complete the syllabus	83 (39.7%)

However, Table 5 underscores the practical challenges that inhibit the implementation of play-based learning. The most frequently reported obstacle is the lack of resources (80.4%), followed by limited training for teachers (72.2%), large class sizes (62.2%), and time constraints (50.2%). Additionally, 39.7% mention the pressure to complete the syllabus as a limiting factor. These findings suggest that despite teachers' belief in the effectiveness of play-based pedagogy, structural and logistical barriers hinder its consistent use in classrooms.

4.5 Cultural Beliefs and Attitudes of Community People

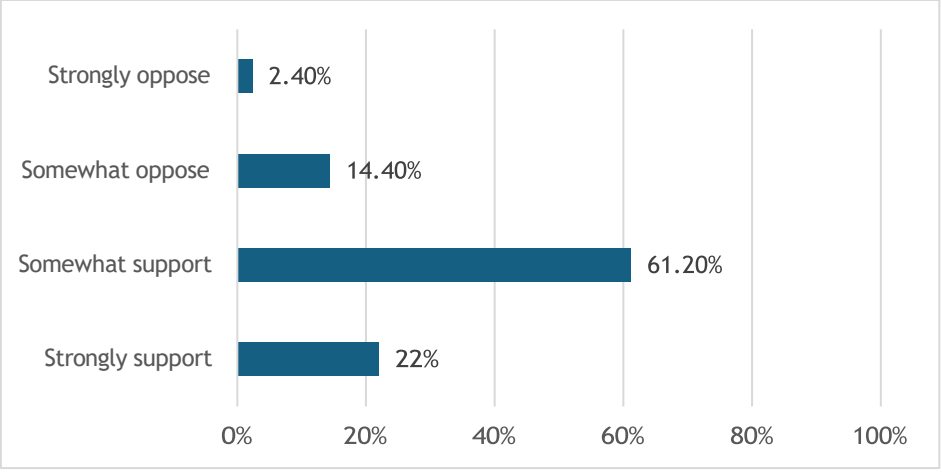


Figure 16: Support of the community for the idea of learning through play

Figure 16 shows that the majority of teachers (61.2%) perceive the community as somewhat supportive of play-based learning, with an additional 22% indicating strong support. However, 16.8% report some level of opposition (14.4% somewhat oppose, and 2.4% strongly oppose), suggesting that a notable portion of the community still holds reservations. These results reflect a transitional cultural environment, one where progressive educational views are emerging, but traditional attitudes remain influential, especially in urban low-income areas.

Table 6: Cultural factors that influence parents' perceptions of play-based learning

Statements	% of Respondents
Emphasis on academic achievements	112 (53.6%)
A belief that play is unproductive	93 (44.5%)
Traditional views on discipline and structure	114 (54.5%)
Lack of awareness about play-based benefits	166 (79.4%)

Table 6 identifies specific cultural factors that influence parental perceptions of play-based learning. The most commonly cited influences include: Traditional views on discipline and structure **(**54.5%**);** Emphasis on academic achievement **(**53.6%**);** and Belief that play is unproductive **(**44.5%). Moreover, a large proportion of teachers (79.4%) report that a lack of awareness about the benefits of play-based learning contributes significantly to parental hesitation.

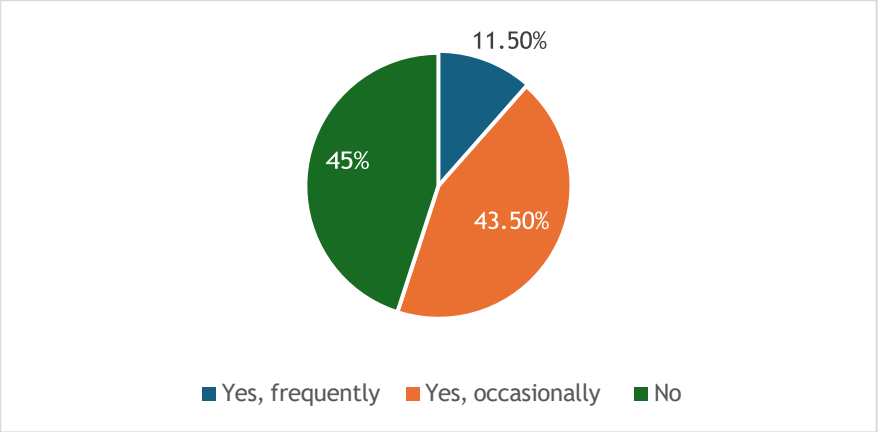


Figure 17: Resistance from parents or the community regarding play-based learning

Despite these challenges, Figure 17 shows that 45% of teachers have not experienced resistance from parents or the community, while 43.5% report occasional resistance and only 11.5% face frequent resistance. This trend suggests that while cultural hesitations persist, outright rejection

of play-based pedagogy is not widespread. Rather, the data imply that misunderstandings or misalignments may be more common than strong ideological opposition.

Table 7: Addressing cultural or parental concerns about play-based learning

Statements	% of Respondents
Communicating the benefits of play-based learning	126 (60.3%)
Providing examples of successful outcomes	83 (39.7%)
Aligning activities with academic goals	156 (74.6%)

In response to these community-level concerns, Table 7 reveals how teachers are actively addressing parental resistance. A substantial 74.6% of teachers align play-based activities with academic goals, thereby reassuring parents that such approaches are not in conflict with formal learning expectations. Furthermore, 60.3% engage in communication with parents to explain the benefits of play-based pedagogy, while 39.7% use examples of successful learning outcomes to reinforce its effectiveness.

4.6 Teachers' Perspective on Identifying Effective Play-based Activities

4.6.1 Students' physical development

Table 8: Effective activity for students' physical development

Statements	% of Respondents
Storytelling and picture reading	11%
Outdoor play activities	74.6%
Singing songs or rhymes	10%
Word games or puzzles	4.3%

This table illustrates teachers' understanding of the types of play-based activities that effectively contribute to children's physical development, a core domain in early childhood education. A majority of teachers (74.6%**)** identify outdoor play activities as the most effective for fostering physical growth. This strong preference reflects an appropriate understanding of the need for gross motor skill development in young children. In contrast, a small proportion of teachers believe storytelling and picture reading (11%)**,** singing songs or rhymes (10%)**,** or word games or puzzles (4.3%) contribute meaningfully to physical development. These activities may support the domains of language**,** cognitive, and social-emotional development. The lower selection of these items for physical development indicates that most teachers are able to appropriately differentiate between developmental domains and align specific play-based strategies accordingly.

Table 9: Teacher's perceptions of play in supporting physical development

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a) Play-based activities such as running, jumping help enhance students' motor skills.	3.83%	1.44%	19.14%	34.45%	41.15%
b) Structured play activities (mentioned in TG) are essential for physical development.	3.35%	1.91%	22.01%	44.50%	28.23%
c) Unstructured or free play does not contribute to students' physical fitness.	32.54%	34.45%	12.92%	14.35%	5.74%
d) Physical play improves students' hand-eye coordination (e.g., like catching a ball).	3.83%	4.31%	19.62%	39.23%	33.01%
e) Teachers do not need to actively participate activities for students' physical development.	34.93%	43.06%	13.88%	5.26%	2.87%
f) Incorporating play into lessons helps to stay focused and engaged in learning.	3.83%	5.26%	27.27%	33.49%	30.14%

Table 9 presents teachers' perceptions of the role of play in supporting students' physical development based on six key statements assessed using a five-point Likert scale. A significant majority of teachers recognize that play-based activities such as running, jumping, and climbing enhance students' motor skills. Specifically, 41.15% of respondents strongly agreed with this statement, while another 34.45% agreed, total of 75.6% who acknowledged the role of such activities in promoting motor development. Only a small proportion of teachers disagreed (3.83%) or strongly disagreed (1.44%). Similarly, when asked about the importance of structured play activities mentioned in the Teacher's Guide (TG) for physical development, 44.5% agreed and 28.23% strongly agreed, indicating that 72.73% of the respondents value structured play as essential for children's physical growth.

Interestingly, the majority of teachers rejected the idea that unstructured or free play lacks physical fitness benefits. Specifically, 34.45% disagreed and 32.54% strongly disagreed with this negative statement, suggesting that 66.99% of respondents believe free play does contribute to physical well-being. Only 14.35% agreed and 5.74% strongly agreed, indicating a minority still holds the view that free play is less beneficial. Teachers also showed a strong belief in the value of physical play for developing hand-eye coordination. A total of 72.24% either agreed (39.23%) or strongly agreed (33.01%) that activities such as ball games can improve coordination, while only 8.14% expressed disagreement. This reinforces the perception that play contributes to both gross and fine motor development.

On the topic of teacher involvement, the majority disagreed with the notion that educators do not need to actively participate in play-based activities. Specifically, 43.06% disagreed and 34.93% strongly disagreed, indicating that 77.99% of teachers believe in their active role in

guiding children's physical development through play. Only 5.26% agreed and 2.87% strongly agreed, reflecting a minimal endorsement of passive teaching approaches in play.

Finally, a majority of teachers (63.63%) agreed (33.49%) or strongly agreed (30.14%) that incorporating physical play into lessons helps students stay focused and engaged. However, a notable 27.27% of teachers remained neutral, suggesting that some educators may still be uncertain about the link between physical activity and classroom engagement.

4.6.2 Students' language and communication development

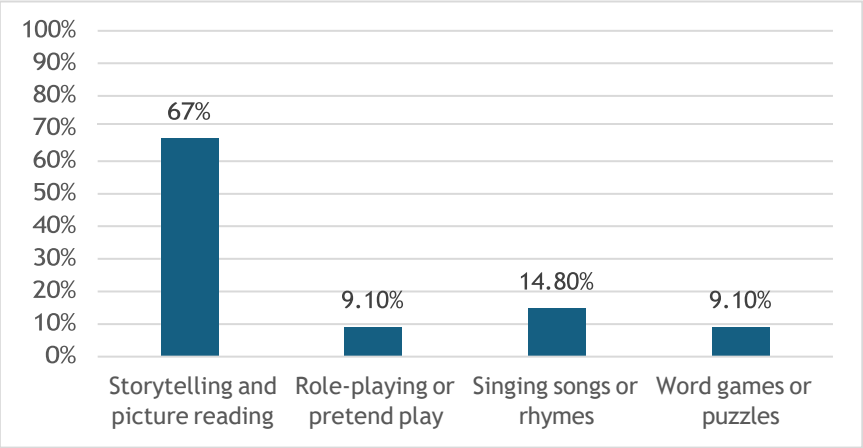


Figure 18: Effective activity for students' language and communication development

This figure presents teachers' perspectives on which play-based activities are most effective in supporting communication development among pre-primary students. The majority of respondents (67%) identified storytelling and picture reading as the most effective method for enhancing children's communication skills. Singing songs or rhymes was selected by 14.8% of the respondents. Interestingly, only 9.1% of teachers selected role-playing or pretend play, an activity widely recognized for fostering dialogic interaction**,** expressive language, and perspective-taking, which are essential of communication development. A similarly small percentage (9.1%**)** chose word games or puzzles, which, while less conversational.

Table 10: Teacher's perceptions of play in language and communication development

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a) Play-based activities (storytelling and singing) improve students' vocabulary.	2.39%	3.35%	16.75%	36.84%	40.67%
b) Role-play or pretend play (e.g., playing shopkeeper and customer) helps students practice communication skills.	2.39%	2.39%	17.70%	39.71%	37.80%
c) Group play activities enhance students' ability to listen and follow instructions.	2.39%	2.87%	16.75%	42.58%	35.41%
d) Unstructured play does not provide opportunities for students to initiate conversations and express their ideas.	27.75%	46.41%	13.88%	9.09%	2.87%
e) Teachers' facilitation during play-based activities enhances students' understanding of language concepts.	3.35%	3.83%	17.70%	48.33%	26.79%
f) Play-based approaches do not create a comfortable environment for shy students to participate in communication.	23.44%	42.11%	16.75%	13.88%	3.83%
g) Songs, rhymes, and rhythm-based games are effective tools for developing students' pronunciation and fluency.	2.87%	4.78%	15.31%	35.89%	41.15%

Table 10 presents teachers' perceptions regarding the role of play-based pedagogy in supporting students' language and communication development. A significant proportion of teachers (77.51%) either agreed or strongly agreed that activities like storytelling and singing help improve students' vocabulary. Similarly, 77.51% of respondents believed that role-play or pretend play, such as scenarios involving shopkeepers and customers, provides students with meaningful opportunities to practice communication skills. Teachers also showed strong agreement regarding the value of group-based play in enhancing students' ability to listen and follow instructions, with 78% expressing positive views on this aspect. Additionally, 75.12% of teachers either agreed or strongly agreed that teacher facilitation during play-based activities plays a critical role in enhancing students' understanding of language concepts. The responses also reflect an appreciation for rhythm-based play: 77.04% agreed that songs, rhymes, and rhythm games are useful tools for developing students' pronunciation and fluency.

At the same time, the data reveal a strong disagreement with the negative statements. For instance, 74.16% of teachers disagreed or strongly disagreed with the claim that unstructured play does not provide opportunities for students to initiate conversations or express their ideas. Likewise, 65.55% of teachers rejected the idea that play-based approaches do not support shy students in communication, suggesting that many educators view play as an inclusive strategy that encourages participation from all learners.

4.6.3 Students' social and emotional development

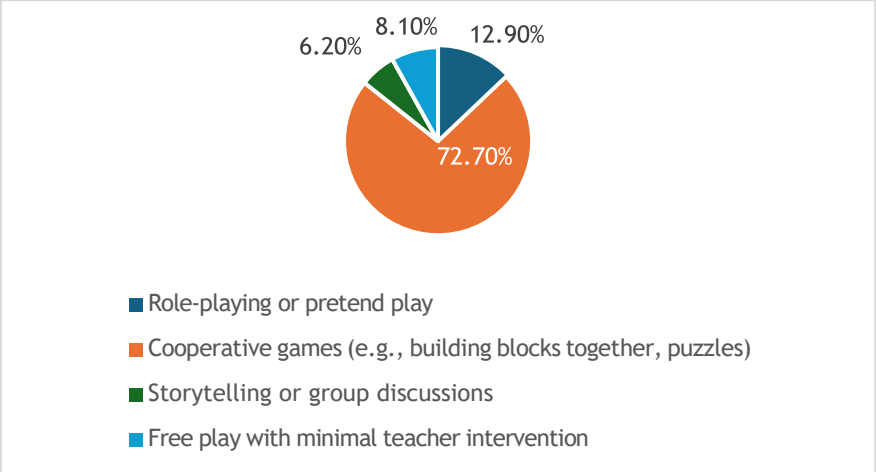


Figure 19: Effective activity for students' social and emotional development

This figure explores teachers' perceptions of which play-based activities are most effective in promoting social and emotional development among pre-primary students. A significant majority of teachers (72.7%) identified cooperative games, such as building blocks or puzzles done together, as the most effective strategy. Role-playing or pretend play, chosen by 12.9% of respondents, also plays a critical role in social-emotional development. Only 8.1% selected free play with minimal teacher intervention, and 6.2% chose storytelling or group discussions.

The data in Table 11 shows that most teachers strongly recognise the benefits of play-based activities in enhancing social and emotional development among pre-primary students. A significant percentage of teachers either agreed or strongly agreed that play promotes better social interaction skills, such as sharing and turn-taking (43.54% agree and 35.89% strongly agree, totalling 79.43%). Similarly, 78.94% of teachers either agreed or strongly agreed that collaborative play activities enhance teamwork and cooperation, reflecting a clear understanding of the social potential embedded in group-based play.

Table 11: Teacher's perceptions of play in fostering social and emotional development

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a) Play-based activities help students develop better social interaction skills	2.87%	1.44%	16.27%	43.54%	35.89%
b) Collaborative play activities (e.g., group games) enhance students' teamwork and cooperation abilities.	2.39%	1.91%	17.22%	39.23%	39.71%
c) Play-based activities do not promote empathy and understanding among students.	34.45%	37.32%	11.00%	12.44%	4.78%
d) Role-playing activities in the classroom foster students' emotional expression and self-awareness.	2.39%	2.39%	17.70%	44.98%	32.54%
e) Free play does not create opportunities to enable students to build stronger peer relationships.	36.84%	42.11%	12.92%	5.26%	2.87%
f) Play-based approaches create a positive and inclusive classroom environment for emotional well-being.	3.35%	1.91%	18.66%	40.19%	35.89%
g) Teachers' active participation in play-based activities helps in guiding students' emotional regulation skills.	3.35%	3.35%	19.62%	44.02%	29.67%

Role-playing was also widely viewed as a tool to foster emotional expression and self-awareness, with 77.52% of teachers agreeing or strongly agreeing. This suggests an appreciation of imaginative play in supporting internal emotional processes. Likewise, 76.08% believed that play contributes to a positive and inclusive classroom environment that supports emotional well-being, which underlines a general consensus about the affective benefits of playful learning environments.

Interestingly, negative statements received strong disagreement from most respondents. For example, 71.77% of teachers disagreed or strongly disagreed with the idea that play-based approaches do not promote empathy, and 78.95% rejected the notion that free play fails to support peer relationships. These responses reflect that teachers clearly see play as an important medium for building both empathy and peer bonding. Additionally, the role of teachers in facilitating emotional development through play is acknowledged by the majority: 73.69% of teachers agreed or strongly agreed that their active participation in play helps guide emotional regulation.

4.6.4 Students' cognitive development

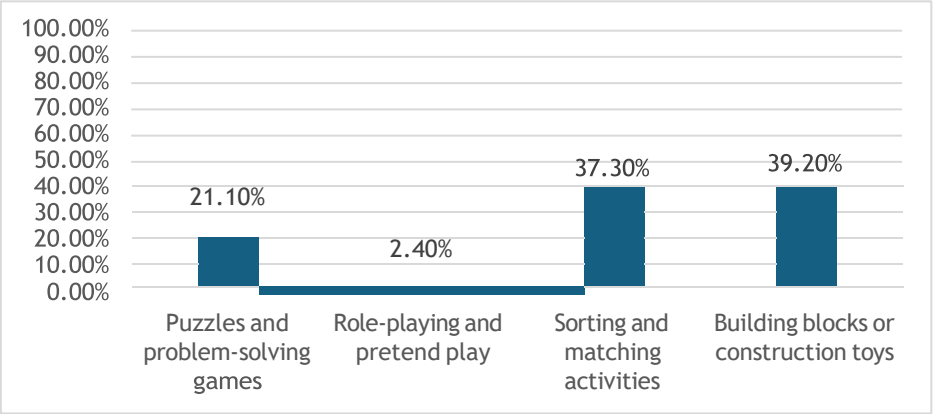


Figure 20: Effective activity for students' cognitive development

Figure 20 presents teachers' views on the most effective play-based activities to support cognitive development in young children. The highest percentage of respondents (39.2%**)** identified building blocks or toys as the most effective tool for promoting cognitive growth. Closely following, 37.3% of teachers selected sorting and matching activities, which help children develop classification skills, logical thinking, and early math concepts such as grouping and pattern recognition. Puzzles and problem-solving games were chosen by 21.1% of respondents, and only 2.4% of teachers selected role-playing and pretend play.

Table 12: Teachers' views on play in developing cognitive development

Statements	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
a) Play-based activities such as puzzles and block building do not improve students' problem-solving skills.	34.45%	42.11%	11.96%	8.13%	3.35%
b) Structured games (e.g., matching, sorting) support students' memory and attention span.	2.39%	1.91%	18.18%	45.45%	32.06%
c) Free play encourages students to explore and think critically about surroundings.	2.39%	2.39%	17.70%	49.76%	27.75%
d) Role-playing activities do not help students to practice decision-making skills.	26.32%	50.72%	13.88%	7.66%	1.44%
e) Teachers' facilitation during play-based activities enhances students' ability to ask questions and be curious.	2.39%	3.83%	18.66%	45.45%	29.67%
f) Play-based approaches improve students' ability to understand and follow multi-step instructions.	1.91%	3.35%	19.14%	45.93%	29.67%
g) Play-based activities provide opportunities for students to learn concepts like numbers, shapes, and patterns.	2.39%	2.87%	18.18%	44.98%	31.58%

The table presents teachers' perceptions regarding the role of play-based pedagogy in developing students' cognitive skills, revealing a generally positive and informed

understanding among respondents. A significant majority (76.41%) disagreed with the statement that puzzles and block building do not improve problem-solving skills, strongly affirming the cognitive value of such activities. Similarly, 77.51% of teachers agreed or strongly agreed that structured games like matching and sorting enhance memory and attention span, while 77.51% also endorsed the view that free play fosters critical thinking and exploration. A large proportion (77.04%) rejected the idea that role-play fails to develop decision-making and reasoning, highlighting their recognition of the cognitive benefits embedded in imaginative scenarios.

Moreover, the role of teacher facilitation was emphasized, with 75.12% agreeing that their involvement in play-based activities helps stimulate students' curiosity and question-asking abilities. Comparable support was noted for the belief that play supports multi-step instruction comprehension (75.6%) and concept learning (76.56%), such as numbers, shapes, and patterns. However, across all items, a notable minority, ranging from 17% to 19%, remained neutral, possibly reflecting some uncertainty or gaps in practical understanding.

4.7 Implementation of Play-Based Activities in the Classroom

To explore how play-based pedagogy is being implemented in the 5+ pre-primary classrooms, the teaching and learning activities in 12 pre-primary classes across Dhaka City were observed. These observations aimed to examine how teachers deliver instructions to young learners, the types of activities conducted in line with the Teacher's Guide (TG), strategies employed to engage students, and the use of materials and resources to create enjoyable learning experiences. The following key findings emerged from the analysis of classroom observation data:

a) Teacher's Role and Facilitation

Classroom observations revealed that teachers typically began activities by modelling or demonstrating the expected tasks to help children understand the process. Teachers actively used questioning techniques and provided verbal guidance to encourage student participation. Furthermore, they fostered collaboration and peer interaction and offered positive reinforcement throughout the sessions. However, a notable limitation was the lack of adaptation based on students' responses or individual learning needs. Teachers appeared to adhere strictly to the TG and maintained a rigid focus on completing tasks within the designated routine time, leaving little room for flexibility or child-led exploration.

b) Types of Play-Based Activities Observed

All observed teachers followed the instructional guidelines of the TG. Commonly used play-based strategies included role-play or pretend play (e.g., scenarios involving shopkeepers, teachers, or family members), group games, and collaborative activities such as puzzles, block building, and indoor play. Singing and rhyme-based activities were a highlight in every class, with students showing spontaneous participation and visible enjoyment. However, many teachers expressed a lack of confidence in managing young learners during storytelling or shared reading sessions, often resulting in reduced student engagement. Free play periods, as outlined in the routine, were also implemented, allowing children to engage independently in physical activities such as running, jumping, and ball games, as well as indoor play. In addition, art-based activities, such as drawing, colouring, and simple craft-making were introduced to encourage creativity.

c) Student Engagement and Participation

In most observed classrooms, students actively engaged in activities, often working collaboratively with peers during play. Although occasional conflicts among children were noted, students generally demonstrated an ability to express their ideas and communicate with both peers and teachers. The majority of children displayed enthusiasm and enjoyment during the sessions. While a few students appeared passive or slow to respond, most were able to follow teacher instructions effectively and participate meaningfully in classroom activities.

d) Classroom Environment and Resources

The classroom environment in many of the observed schools was not always conducive to effective learning. Several schools were situated along busy roads, resulting in significant noise pollution. To mitigate this, windows were often kept closed, which limited ventilation. Nonetheless, teachers made efforts to maintain a safe and welcoming indoor environment. In some schools, overcrowding was an issue, with two sections being merged due to a shortage of classrooms. In one case, students were observed sitting on benches rather than the floor as the pre-primary classroom had been repurposed for an SSC examination centre. Despite these challenges, teachers attempted to organise their classrooms to support play-based learning, for example, by creating open spaces and arranging group seating. Age-appropriate materials such as toys, puzzles, and blocks were used effectively. However, a shortage of visual aids (e.g., charts, posters) was noted. Given the number of students, there is a need for more visual resources to ensure each child has the opportunity to see, touch, and interact with them.

e) Challenges Observed During Implementation

Several implementation challenges were identified. Teachers frequently reported that the allocated routine time was insufficient for conducting meaningful play-based activities. There was also a notable scarcity of teaching-learning materials, which prevented equitable distribution among student groups. In many instances, students observed the teacher's demonstration but had limited opportunities to manipulate the materials themselves, reducing hands-on engagement. Furthermore, large class sizes negatively impacted the effectiveness of play-based activities and made behaviour management particularly challenging for teachers.

4.8 Challenges in the Implementation of Play-Based Pedagogy

Table 13: Challenges faced by teachers in using play-based activities

Statements	% of Respondents
Insufficient resources (e.g., play materials, space)	190 (90.9%)
Limited resources (storybooks, puzzles, blocks, or visual aids)	137 (65.5%)
Lack of time in the curriculum to focus on play	79 (37.8%)
Inadequate training on how to use play for holistic development	139 (66.5%)
Difficulty in managing large class sizes during play activities	170 (81.3%)
Lack of awareness among parents about the importance of play	157 (75.1%)
Lack of support from the school administration	49 (23.4%)

The data from Table 13 highlights several key challenges that teachers encounter when implementing play-based activities in pre-primary classrooms. The most commonly reported issue is insufficient resources, such as play materials and adequate space, identified by a striking 90.9% of respondents. This suggests that the physical environment and availability of tools crucial for effective play-based learning are often inadequate. Closely related, 65.5% of teachers also pointed to limited teaching resources like storybooks, puzzles, blocks, or visual aids, indicating a scarcity of pedagogical materials needed to support diverse play experiences.

Another significant barrier is classroom management, with 81.3% of teachers reporting difficulty in managing large class sizes during play-based activities. This reflects the structural limitations of the education system, where overcrowded classrooms can hinder interactive and child-centred approaches. Additionally, 66.5% of respondents cited inadequate teacher training on how to use play effectively for holistic development, highlighting a critical gap in professional development. Without adequate preparation, teachers may lack the confidence and skills needed to implement play-based pedagogy meaningfully.

Time constraints are another notable issue, with 37.8% of teachers expressing concern over the lack of time in the curriculum dedicated to play. This indicates that even teachers who value

play might struggle to prioritise it within a content-heavy schedule. Furthermore, 75.1% of teachers reported a lack of awareness among parents about the importance of play, suggesting that societal expectations around academic achievement may influence how play is perceived and supported outside the classroom. Finally, 23.4% of teachers felt a lack of support from school administration, which could affect motivation and limit institutional efforts to promote play-based learning.

In addition to the above challenges, the teachers also reported other challenges when implementing play-based pedagogy in pre-primary schools. These challenges range from parental expectations and student behaviour to resource limitations and teacher workload, and also reflect the multifaceted nature of implementing innovative pedagogies within existing educational frameworks.

a) Parental Perceptions and Pressure for Traditional Learning

A prominent challenge articulated by teachers revolves around parental expectations and their inclination towards traditional academic approaches, often at the expense of play-based learning. Teachers frequently reported that parents exhibit ‘excessive involvement with their children’ and actively demand a curriculum focused on reading, writing, and homework. This sentiment is encapsulated by one teacher who stated, *"Parents don't want play; they want more reading and writing. They ask for homework, just like kindergartens do. This leaves parents frustrated."* This highlights a significant disconnect between the pedagogical philosophy of play-based learning and the prevailing parental understanding of what constitutes effective early childhood education.

Furthermore, teachers emphasized the difficulty in communicating the value of play to parents. As one teacher explained, *"Parents don't understand play-based learning activities. They say that in pre-primary, children just play and don't study or get homework, which leads many students to enrol in kindergartens. It's impossible to make them understand that children learn everything in a stress-free environment through play."* This suggests a systemic challenge where parents, influenced by the visible academic outputs of private kindergartens, perceive play as a lack of serious instruction. This pressure often forces teachers to either compromise on the fidelity of play-based implementation or face parental dissatisfaction, thereby undermining the full potential of the pedagogy. The desire for conventional teaching methods is further evidenced by comments such as, *"Parents want us to teach like kindergarten schools.*

They don't want play-based education," underscoring the strong societal preference for a more structured, results-oriented curriculum even at the pre-primary level.

b) Constraints of Space and Material Resources

Another substantial barrier to effective play-based pedagogy is the inadequacy of physical space and a shortage of appropriate learning materials. Teachers consistently reported challenges stemming from cramped classrooms and a lack of dedicated areas for play. One teacher lamented, *"Due to the shortage of space, toys cannot be kept. It's not possible to create four corners* [for play activities]." This directly impedes the establishment of diverse learning centers or activity zones that are fundamental to a rich play-based environment. The absence of sufficient space restricts children's movement, exploration, and the ability to engage in varied play scenarios.

Beyond the physical dimensions of the classroom, the availability of resources emerged as a critical concern. As one educator noted, *"Learning is hindered due to limited materials. We would benefit if the allocation for fulfilling material shortages were increased."* This points to an insufficient provision of age-appropriate toys, manipulatives, and other play-based learning tools that are essential for facilitating hands-on, experiential learning. The lack of a separate play area further exacerbates this issue, with a teacher observing, *"The play room should have been separate. When toys are visible, all attention is drawn to them,"* indicating that the integration of play materials directly into the classroom can become a distraction rather than a dedicated learning opportunity in the absence of proper spatial design. The absence of these fundamental resources creates significant hurdles for teachers attempting to deliver a truly engaging and effective play-based curriculum.

c) Classroom Management in Overcrowded Environments

The high student-to-teacher ratio and the inherent energetic nature of young children present considerable classroom management challenges. Teachers frequently expressed that *"We face challenges because of the high number of students in the classroom"* and that *"It's quite challenging for a single teacher to manage too many students."* This numerical reality directly impacts a teacher's ability to provide individualized attention, facilitate small group activities, and effectively monitor a dynamic play-based environment.

Furthermore, teachers noted a natural inclination among pre-primary children towards unstructured play, stating, *"Students prefer playing according to their own wishes rather than systematic play. They don't like limited time for play."* While this aligns with the principles of

child-led play, it becomes a management challenge in large groups, leading to comments such as "Managing students is difficult." The enthusiasm for play can also spill over into academic time, as highlighted by the observation, *"Children love to play so much that they start playing even during lessons."* This indicates a struggle to balance structured learning moments with the children's natural desire for free play. The potential for a "chaotic environment" to be "created" and the need to "give the same instruction many times, and still, they don't listen" further illustrate the difficulties in maintaining order and productive engagement in large, active classrooms. The concern about safety is also paramount, with one teacher mentioning, "Students wanting to play all the time, and parents complaining if someone gets hurt," which adds another layer of pressure and vigilance for the teacher.

d) Teacher Workload and Curricular Pressures

The implementation of play-based pedagogy places a significant workload on individual teachers, especially given the extended class durations and the pressures of curriculum delivery. Teachers found it *"...very difficult for just one teacher to maintain focus for a continuous two and a half hours in class,"* highlighting the demanding nature of sustained engagement with young children in a play-based setting. This challenge is combined by the demographic realities within classrooms, as one teacher explained, *"In my school, there's a rule to admit students aged 5+, but the number of students aged 4+ is higher than 5+. This creates various problems in teaching in the classroom. Even though it's hard for me, I provide equal lessons to all students."* This indicates that teachers are often catering to a wider developmental range than officially stipulated, requiring differentiated instruction and increased effort.

Beyond managing diverse age groups, teachers also face external curricular pressures. A significant challenge is the *"extra pressure to teach content from Grade 1 books in advance, beyond the learning competencies and outcomes set for the pre-primary class."* This suggests a top-down pressure to prepare students for the next academic level, which often conflicts with the holistic, developmental approach of play-based learning. The demands of classroom management, coupled with the expectations of covering traditional academic content, further intensify the teacher's burden. As one teacher summarised, *"The task is challenging for one teacher,"* emphasizing the isolated nature of their effort in implementing a complex pedagogical approach. The difficulty in ensuring student safety during play activities also adds to this workload, with a teacher stating, *"Taking students to the washroom and keeping an eye on them outside is a big challenge for the teacher."*

e) Lack of Systemic Support and Inter-Colleague Cooperation

Finally, some teachers pointed to a lack of broader systemic support and, at times, inter-colleague cooperation, which can hinder effective play-based implementation. While not explicitly detailed as a major theme by many, one teacher noted, *"Excessive curiosity from students in other classes leads to uncooperative attitudes from colleagues."* This suggests that the novelty or perceived unstructured nature of play-based learning in pre-primary classrooms might lead to a lack of understanding or even resistance from teachers of older grades, impacting the overall school environment and support for the pre-primary teacher. The implication is that for play-based pedagogy to thrive, it requires not only dedicated teachers but also a supportive school culture and a shared understanding among all staff members regarding its value and implementation.

In conclusion, the challenges faced by teachers in implementing play-based pedagogy in Dhaka City's government primary schools are multifaceted and interconnected. They stem from a complex interplay of parental expectations rooted in traditional academic models, severe constraints in terms of physical space and learning resources, the inherent difficulties of managing large groups of energetic young children, and the considerable workload and external pressures placed upon individual teachers. Addressing these challenges effectively will require a comprehensive approach that includes parent education, improved resource allocation, professional development in classroom management for play-based settings, and a shift towards a more supportive and understanding school culture.

4.9 Additional Support Required in Implementation Play-Based Pedagogy

Table 14: Additional support for implementing play-based activities

Statements	% of Respondents
More training for teachers	164 (78.5%)
Increased availability of play-based resources	193 (92.3%)
Support from the school administration	103 (49.3%)
Awareness campaigns for parents and the community	163 (78%)

The table on teachers' perceptions of additional support needed for implementing play-based activities highlights several key areas where intervention is necessary to strengthen the effectiveness and sustainability of play-based pedagogy in classrooms. The most frequently cited need was the increased availability of play-based resources, reported by 92.3% of respondents. Closely following this, 78.5% of teachers expressed a strong need for more training. In addition, 78% of respondents pointed to the need for awareness campaigns targeting

parents and the broader community. Finally, 49.3% of teachers identified support from school administration as another important factor.

During the in-depth interviews, teachers articulated a variety of needs related to training, materials, classroom conditions, and institutional backing. Their responses, originally provided in Bangla, reflect the practical challenges and systemic limitations they encounter, as well as their aspirations for a more enabling environment. The teachers also shared the following support required for implementing play-based pedagogy.

a) Need for Capacity Building and Continuous Training

Many teachers emphasized the importance of training to enhance their confidence and competence in using play-based approaches. While some had attended short training sessions, these were often limited in scope or too theoretical. Teachers expressed a need for more practical, hands-on training sessions that demonstrate how to plan, conduct, and assess learning through play. One teacher stated, *"We have heard about play-based learning, but we need more detailed guidance. If someone shows us how to do it step-by-step in a real classroom, it would help us a lot."* This sentiment was echoed by others who called for follow-up training, refresher courses, and peer-learning opportunities to continuously build their skills and stay updated on innovative practices.

b) Availability of Age-Appropriate and Culturally Relevant Materials

Teachers repeatedly cited the lack of adequate play materials as a major barrier to implementation. Many classrooms lack basic resources such as toys, puzzles, storybooks, and visual aids. In addition, teachers noted that the few materials available are often not developmentally appropriate or contextually relevant. One teacher remarked, *"We have some plastic toys, but they are not enough, and some are broken. We need materials that match our children's age and our local culture."* This highlights a dual concern: the quantity and quality of materials, and their alignment with the children's developmental needs and cultural context.

c) Improvement of Physical Classroom Environment

The physical environment of the classrooms was another area where support was deemed necessary. Many teachers work in overcrowded classrooms with limited space for movement, which restricts the implementation of physical or group-based play activities. One teacher explained, *"We want to do more group games or storytelling sessions, but there is hardly any*

room to sit in a circle or move freely." In addition to space constraints, teachers also pointed out the absence of designated areas or corners within the classroom where specific types of play could take place.

d) Administrative and Policy-Level Support

Teachers highlighted the need for more active and structured support from school administration. Some felt that while they were interested in adopting play-based methods, they did not always receive encouragement or logistical support from the school leadership. One teacher commented, *"Sometimes the headteacher says there is no time for play, we must focus on the syllabus. If the administration does not support us, how can we implement this properly?"* This suggests that without alignment between pedagogical goals and institutional priorities, teachers may struggle to sustain play-based practices.

e) Parental and Community Awareness

Another theme that emerged was the lack of understanding among parents about the value of play in education. Several teachers reported that parents often view play as a waste of time and prefer traditional, instruction-heavy methods. *"Parents ask us why children are only playing and not doing 'real' learning,"* shared one teacher. To address this, teachers recommended awareness campaigns, orientation sessions, and regular communication with parents to help them see the learning embedded in play-based activities.

f) Locally Available or Improvised Materials

Despite these challenges, teachers showed considerable resourcefulness by using locally available or improvised materials. Some mentioned using old containers, sticks, or recycled materials to create learning tools. However, they said that such improvisation, while helpful, cannot substitute the need for professionally developed resources. *"We try to make things from what we have, but it is not always possible to make everything we need,"* one teacher shared. This underscores the importance of both teacher creativity and institutional support.

g) Time Allocation within the Curriculum

Lastly, several teachers mentioned the rigidity of the existing curriculum, which leaves limited time for unstructured or guided play. One teacher noted, *"We have to finish so many tasks in a short time. Play often gets neglected because of pressure to complete lessons."* Teachers suggested a revision of the pre-primary timetable to formally allocate time for play-based activities, making it a recognised and protected component of the daily routine.

Chapter 05: Major Findings

This chapter synthesises key findings from the study, based on quantitative and qualitative data analysis, and presents them under thematic areas aligned with the research questions. The findings highlight teachers' profiles, their understanding and application of play-based pedagogy, curriculum alignment, and challenges related to classroom implementation and community perception.

5.1 Teacher Professional Background

- A vast majority (about 90%) of the pre-primary teaching workforce in Dhaka City comprises female teachers.
- A significant proportion (63.6%) of these teachers fall within the 31–40 years age group, suggesting that many are in their early to mid-career phase. This demographic trend implies a balance of youthful energy and accumulated experience, which is critical for targeted professional development initiatives.

5.3 Teachers' Understanding and Confidence in Play-Based Pedagogy

- Most teachers (82.8%) demonstrated a solid theoretical understanding of play-based learning, particularly its emphasis on both guided and open-ended play.
- An overwhelming majority (90%) associated play with essential elements of child development such as self-expression, problem-solving, and imagination. However, only 61.7% explicitly linked play to children's social development, indicating an area where further professional development may be needed.
- A large proportion of teachers (74.6%) reported high confidence in implementing play-based pedagogy. Nevertheless, this confidence coexists with significant gaps in professional preparation, as 59.3% of teachers had never received formal training on play-based approaches. This may affect their ability to design age-appropriate activities, align them with learning objectives, and assess outcomes effectively.

5.4 Application of Play-Based Pedagogy in the Classroom

- While 66.5% of teachers reported embedding play-based approaches regularly into their lessons, nearly one-third (33.5%) admitted to using such strategies inconsistently.

The absence of training for a majority (59.3%) likely contributes to this uneven implementation.

- Teachers widely acknowledged the benefits of play-based learning in enhancing pedagogical effectiveness (76.1%), fostering creativity (91.4%), and promoting classroom engagement (88%). However, only 31.6% found it easy to implement in practice.
- Major barriers to effective implementation include a lack of learning materials (reported by 80.4% of teachers), insufficient training (72.2%), large class sizes (62.2%), limited time (50.2%), and pressure to complete the syllabus (39.7%).

5.5 Curriculum and Play-Based Pedagogy

- A strong majority of teachers (93.3%) perceived the national pre-primary curriculum as supportive of play-based learning.
- Most teachers (73.7%) reported referring to the curriculum during lesson planning, and 73.2% agreed that it provides clear instructional guidance. Still, a minority expressed uncertainty, indicating the need for additional resources or training to help them better operationalize curriculum goals in classroom settings.

5.6 Community and Parental Perception of Play-Based Learning

- A majority of teachers (61.2%) reported that the community is somewhat supportive of play-based learning, while 22% found strong community support.
- Nonetheless, 79.4% of teachers cited a lack of parental awareness about the benefits of play-based approaches as a significant cultural barrier. About 43.5% of teachers encountered occasional resistance, while 11.5% faced frequent resistance from parents or community members.
- In response, many teachers (74.6%) reported integrating academic goals into play-based activities to reassure parents and align with formal educational expectations.

5.7 Teachers' Perceptions of Play and Physical Development

- A significant majority of teachers (74.6%) identified outdoor play as the most effective approach for supporting children's physical growth. This preference reflects teachers' awareness of the importance of gross motor skill development in early childhood education.

- Analysis of Likert scale responses further indicates a strong consensus regarding the physical benefits of play-based learning:
- Over 75% of teachers acknowledged that activities such as running and climbing enhance motor skills.
- More than 72% recognized that structured play contributes to physical development.
- A notable 66.99% disagreed with the idea that unstructured or free play is ineffective for physical fitness, suggesting an appreciation for both structured and open-ended play.
- Most teachers (72.24%) affirmed that play enhances hand-eye coordination, highlighting their understanding of fine motor skill development.
- Additionally, 77.99% of respondents disagreed with the notion that teachers can remain passive during physical play, emphasizing the perceived importance of active teacher involvement.
- While 63.63% agreed that physical play improves classroom focus, a considerable proportion (27.27%) remained neutral, indicating an area where further guidance or evidence-based training may be beneficial.

5.8 Teachers' Perceptions of Play and Language Development

- Most respondents (67%) identified storytelling and picture reading as the most effective strategies for enhancing children's language and communication skills. Surprisingly, only 9.1% of teachers selected role-playing or pretend play, despite its strong recognition in early childhood pedagogy for supporting expressive language, turn-taking, and social communication.
- Findings from the Likert scale data suggest that teachers hold strong positive beliefs about the role of play in promoting language development:

- 77.51% of teachers agreed or strongly agreed that storytelling and singing help expand children's vocabulary.
- An equal proportion (77.51%) acknowledged the value of role-play activities (e.g., pretending to be shopkeepers or customers) for practicing communication skills.
- 78% believed that group-based play enhances listening skills and the ability to follow verbal instructions.
- A significant number (75.12%) emphasized the importance of teacher facilitation in play to deepen children's understanding of language.

- 77.04% affirmed that songs, rhymes, and rhythm-based games support the development of pronunciation and fluency.
- Teachers widely rejected misconceptions that play-based methods are ineffective for shy children or that unstructured play limits language use, 74.16% and 65.55% disagreed or strongly disagreed with these negative views, respectively.

5.9 Teachers' Perceptions of Play and Social-Emotional Development

- A significant majority of teachers (72.7%) identified cooperative games, such as building blocks or puzzles completed in groups, as the most effective strategy for supporting social and emotional development. This suggests a strong practical understanding among teachers that such activities promote critical interpersonal skills, including teamwork, turn-taking, sharing, negotiation, and problem-solving, all of which are foundational to social competence and emotional self-regulation.
- Findings from Likert scale data further indicate that teachers generally perceive play-based pedagogy as highly supportive of social-emotional growth:

- 79.43% agreed or strongly agreed that play supports the development of social interaction skills, such as sharing and taking turns.
- 78.94% recognized collaborative play as a tool for enhancing cooperation and teamwork.
- 77.52% highlighted the value of role-play for promoting emotional expression and self-awareness.
- 76.08% believed that play-based approaches contribute to an inclusive and emotionally supportive classroom environment.
- A notable 73.69% affirmed that active teacher participation in play fosters emotional regulation skills among students.

These findings demonstrate that most teachers in the study appreciate the value of play not only as a learning tool but also as a critical means for nurturing empathy, self-regulation, and positive peer relationships.

5.10 Teachers' Perceptions of Play and Cognitive Development

- A significant proportion of respondents (39.2%) selected building blocks and construction toys as the most effective resources for enhancing cognitive development

in young children. These tools are widely recognized for promoting spatial reasoning, planning, sequencing, cause-and-effect understanding, and fine motor coordination. A close second (37.3%) was sorting and matching activities, which teachers identified as helpful for developing logical thinking, classification skills, attention to detail, and early math concepts such as grouping and pattern recognition.

- Likert scale responses further reflect strong support among teachers for the cognitive benefits of play-based learning:

- 76.56% of teachers agreed or strongly agreed that play activities support the learning of foundational concepts like numbers, shapes, and patterns.
- 75.6% believed that play helps students follow multi-step instructions, an important cognitive skill in early learning.
- 75.12% emphasized the role of teacher facilitation in encouraging children's curiosity and questioning abilities during play.
- 77.51% recognized the value of structured games like matching and sorting for enhancing memory and attention.
- An equal proportion (77.51%) endorsed the idea that free play stimulates exploration and critical thinking.

These findings suggest that most teachers are aware of the diverse cognitive benefits of both structured and unstructured play and value their use in early years teaching.

5.11 Teaching-learning Scenario of the Pre-primary Classes

- **Teacher Facilitation**: Teachers demonstrated activities, provided guidance, and encouraged peer interaction, but rarely adapted tasks to students' needs due to strict adherence to the teacher's guide and time constraints.
- **Types of Activities**: A variety of play-based activities were implemented, including role-play, group games, rhymes, storytelling, free play, and art-based tasks. However, teachers struggled with managing storytelling sessions and ensuring active participation.
- **Student Engagement**: Most students were actively engaged, collaborated with peers, and enjoyed the activities, although a few remained passive or struggled to follow instructions.

- **Classroom Environment and Resources**: Learning environments were often disrupted by noise pollution and overcrowding. While teachers attempted to organize classrooms effectively, there was a shortage of visual aids and adequate space.
- **Implementation Challenges**: Teachers faced limited time, inadequate materials, and large class sizes, which hindered equitable participation and effective management of play-based learning activities.

5.12 Contextual Barriers to Implementing Play-Based Pedagogy

- The findings highlight a range of systemic and contextual barriers that hinder the effective implementation of play-based pedagogy in government primary schools. A substantial majority of teachers (90.9%) reported a shortage of essential resources such as play materials and sufficient space, while 65.5% identified a lack of teaching aids, such as storybooks, puzzles, and visual learning tools, as a major obstacle.
- Classroom-related challenges were also significant. Over four-fifths of teachers (81.3%) cited difficulties in managing large class sizes, which limit their ability to supervise and facilitate meaningful play-based activities. Additionally, 66.5% expressed that inadequate professional training limits their capacity to use play effectively for holistic child development. Time constraints were also noted, with 37.8% of teachers reporting that limited curriculum time prevents the regular integration of play into lessons.
- The findings also point to community-related challenges. A considerable proportion of teachers (75.1%) felt that a lack of parental awareness about the benefits of play affects support for play-based learning. While fewer teachers (23.4%) reported insufficient administrative support, this still indicates a need for stronger institutional backing and alignment of leadership with child-centred educational practices.

Qualitative responses further illuminate the nuanced and overlapping nature of these challenges:

- **Parental Pressure for Traditional Learning:** Many teachers face resistance from parents who expect more academic, textbook-oriented learning (e.g., reading, writing, homework), which limits the freedom to implement child-friendly, play-based approaches.

- **Inadequate Space and Materials:** Overcrowded classrooms and a lack of dedicated play areas or age-appropriate materials make it difficult to create effective learning environments based on play.
- **Classroom Management Issues:** Large class sizes, combined with children's natural preference for unstructured play, often result in difficulties maintaining engagement, safety, and classroom discipline during playful activities.
- **Heavy Teacher Workload:** Teachers reported being overburdened with long teaching hours, managing children of varying developmental stages, and dealing with pressure to prepare students for Grade 1 academic expectations.
- **Limited Systemic and Peer Support:** Many teachers felt isolated in their efforts to implement play-based methods, citing a lack of collaboration and understanding from peers, especially in schools where traditional, didactic teaching dominates.

5.13 Additional Support Required to Strengthen Play-Based Pedagogy

- The majority of teachers in this study identified a strong need for additional support to effectively implement play-based pedagogy in government pre-primary classrooms. Survey data show that the most urgent requirement is the availability of play-based resources, cited by 92.3% of respondents. This includes both the quantity and quality of materials needed for developmentally appropriate play.
- A significant proportion (78.5%) of teachers expressed the need for capacity building through training. Teachers emphasized that while some training had been provided, it was often too theoretical or brief. They called for more practical, hands-on training, ongoing professional development, refresher sessions, and peer learning opportunities to help them plan, conduct, and assess play-based learning more effectively.
- A similar percentage (78%) of teachers identified the need for awareness campaigns targeting parents and communities, to help them understand the developmental value of play. Teachers reported that parental misconceptions, such as viewing play as time-wasting, create pressure for more traditional instruction, which undermines the implementation of play-based approaches.
- Approximately half of the teachers (49.3%) reported the need for greater administrative support. Interviews further revealed that without consistent backing from school leadership, including flexibility in lesson planning and prioritization of play, teachers

struggle to implement play-based methods. Some noted that school heads prioritize syllabus completion over child-centred learning.

- Teachers also stressed the importance of improving the physical classroom environment. Many classrooms are overcrowded and lack space for group play or movement-based activities. Teachers expressed a need for designated learning corners and safe, open areas where various types of play could be conducted.
- There is a notable concern regarding the alignment and appropriateness of learning materials. Teachers highlighted the lack of culturally relevant, age-appropriate resources and emphasized the need for materials that reflect children's lived experiences and support local language and cultural practices.
- Despite constraints, some teachers demonstrated creativity in using locally available or improvised materials, such as old containers, sticks, or recycled items, to facilitate learning. While commendable, they cautioned that improvisation alone cannot replace the need for quality, professionally designed resources.
- Finally, teachers emphasized the need for increasing time allocation within the curriculum for play-based activities. Several expressed frustration at having to deprioritize play due to tight schedules and the pressure to cover academic content. They recommended curriculum reforms that protect time for play, thereby reinforcing its legitimacy and importance within early years pedagogy.

Chapter 06: Discussion

This chapter provides an interpretation and critical analysis of the key findings from the study regarding teachers' understanding and implementation of play-based pedagogy within pre-primary classrooms of government primary schools in Dhaka. Utilising both quantitative and qualitative data, the discussion delves into teachers' perceptions of the contributions of play to various domains of child development, specifically physical, social-emotional, cognitive, and language development, as well as the challenges they face and the support they require. By contextualising the findings within the broader framework of pertinent national and international literature, this chapter seeks to illuminate both the promising practices and the systemic gaps that impact the effective integration of play-based approaches in early childhood education. The implications of these insights are examined in relation to policy, teacher training, and institutional practices.

Teachers' Conceptualization of Play-Based Learning

The findings of this study indicate that a significant majority of teachers (82.8%) conceptualize play-based learning as a blend of structured and free play. This reflects a relatively balanced and developmentally informed understanding of the pedagogical value of both teacher-guided and child-initiated play. Such conceptualization aligns closely with contemporary early childhood education (ECE) theories, which underscore the importance of integrating both types of play to support children's holistic development (Wood, 2014; Brostrom, 2016). Guided play allows educators to scaffold learning within meaningful contexts, while free play offers opportunities for self-regulation, creativity, and social interaction (Zosh et al., 2022).

However, the presence of a small proportion of teachers who provided vague or narrow definitions points to gaps in conceptual clarity. This suggests the need for ongoing professional development, not only to reinforce the value of play as a pedagogical tool but also to help teachers differentiate between play for leisure and play for learning. Prior research has emphasized that without a clear theoretical foundation, the application of play-based methods risks becoming superficial or inconsistent (Walsh, McGuinness, Sproule, & Trew, 2010).

Furthermore, the study found that 90% of teachers view the enhancement of creativity and imagination as the primary developmental goal of play-based learning. This resonates with Vygotskian perspectives, which emphasize the role of imagination in the development of abstract thinking and symbolic representation during early childhood (Vygotsky, 1978).

Teachers' recognition of creativity and problem-solving as key outcomes also aligns with the literature that positions play as a central driver of cognitive, social, and emotional competencies (Whitebread, Basilio, Kuvalja, & Verma, 2012).

Perception of Play-Based Pedagogy within the Pre-Primary Curriculum

A notable 93.3% of teachers perceive the current national pre-primary curriculum as supportive of play-based pedagogy. Moreover, a substantial proportion (73.7%) regularly refers to the curriculum when planning lessons, and 73.2% believe that it offers clear guidance on integrating play-based methods. These findings suggest that the curriculum is widely regarded as a guiding framework that legitimizes the use of play as a key instructional approach.

This perception is consistent with national policy documents such as the *Operational Framework for Pre-Primary Education* (MoPME, 2008), which emphasizes activity-based and child-centred learning. It also aligns with broader international frameworks, such as the Cambridge framework, which sets out a holistic approach to educational success, advocating for play as an essential component of foundational learning experiences (Cambridge, 2023).

Nonetheless, a minority of teachers (21.1%) find the curriculum guidance only "somewhat clear," indicating that curriculum interpretation remains a challenge for some educators. This underscores the importance of professional support mechanisms, including orientation sessions, training workshops, and resource materials, to ensure that teachers can effectively translate curriculum goals into classroom practice (Siraj-Blatchford, Muttock, Sylva, Gilden, & Bell, 2002).

Comparing Play-Based and Traditional Teaching Methods

The study reveals that a significant proportion of teachers (76.1%) consider play-based learning more effective than traditional methods. Additionally, 65.6% prefer a combination of both approaches. These responses suggest that while teachers recognize the pedagogical benefits of play-based learning, such as increased engagement, improved creativity, and stronger social-emotional development, they also acknowledge the practical constraints that necessitate a blended model.

This pragmatic stance reflects findings from earlier research, which suggests that while play-based pedagogy offers substantial developmental benefits, its full implementation often requires adaptation to local classroom realities (Hegde & Cassidy, 2009; Fung & Cheng, 2011). Notably, the percentage of teachers (approximately 85%) citing advantages such as enhanced

student engagement and creativity supports child development theories that position play as essential for active, experiential learning (Hirsch-Pasek, Golinkoff, Berk, & Singer, 2009; Varman et al., 2023).

Despite this strong theoretical alignment, the implementation of play-based methods is hindered by several systemic barriers, such as a lack of resources (reported by 80.4% of teachers), insufficient training (72.2%), large class sizes (62.2%), and time constraints due to syllabus pressure (50.2%). These structural limitations are consistent with challenges reported in other low-resource contexts, where overcrowded classrooms, rigid curricula, and minimal institutional support constrain the use of innovative pedagogical approaches (UNESCO, 2024; Rashid & Akkari, 2020).

Overall, while teachers in Dhaka city's government pre-primary schools generally support and value play-based pedagogy, their ability to implement it effectively is significantly constrained by contextual and systemic issues. Addressing these barriers, through resource allocation, professional development, curriculum reform, and administrative support, is crucial for realizing the full potential of play-based learning in early childhood education.

Cultural Beliefs and Community Attitudes Towards Play-Based Pedagogy

The perception and acceptance of play-based pedagogy extend beyond the boundaries of educational institutions and are significantly shaped by the cultural norms, values, and expectations of parents and the broader community. Findings from this study reveal a mixed but gradually shifting community perspective, where supportive attitudes toward play-based learning are emerging alongside enduring cultural misconceptions that continue to challenge its effective implementation.

A majority of teachers (61.2%) perceive the community as "somewhat supportive" of play-based learning, with a further 22% indicating "strong support." These figures suggest that urban Bangladeshi communities, particularly in Dhaka, are in a transitional phase, beginning to embrace progressive educational ideas while still holding on to traditional views. These traditional views often prioritize academic achievement, discipline, and structured learning, leading to scepticism about the educational value of play (Alam, 2022; Broström, 2016).

A significant proportion of respondents (79.4%) identified a lack of awareness as a major factor contributing to parental hesitation. This suggests a persistent cultural mismatch between the holistic, child-centred philosophy of early childhood education and the community's

expectation that learning should be formal, discipline-driven, and primarily academic in nature. Similar tensions have been documented in other low- and middle-income contexts, where parents often equate effective teaching with visible academic outcomes, particularly literacy and numeracy skills, rather than developmental progress through play (Hegde & Cassidy, 2009; UNICEF, 2018).

While 43.5% of teachers reported occasional resistance from parents and only 11.5% faced frequent resistance, these numbers indicate that overt opposition to play-based approaches is relatively limited. Rather than ideological resistance, the prevailing challenge appears to be one of misunderstanding and misalignment between educational goals and cultural expectations. This mirrors findings from previous studies, which argue that in contexts where play is not traditionally associated with learning, its pedagogical purpose must be explicitly communicated to parents and guardians (Siraj-Blatchford, Muttock, Sylva, Gilden, & Bell, 2002; Wood, 2014).

In response to these challenges, many teachers adopt adaptive strategies to bridge the cultural divide. Notably, 74.6% of teachers report aligning play-based activities with academic learning goals as a way to reassure parents that such methods are not incompatible with formal education. Teachers also engage in direct communication with parents, highlighting the developmental benefits of play and sharing visible learning outcomes. These proactive strategies underscore the role of teachers as cultural mediators, negotiating between institutional pedagogy and community values (Walsh, McGuinness, Sproule, & Trew, 2010).

While the emerging cultural acceptance of play-based learning is encouraging, the persistence of traditional beliefs concerning academic rigour and discipline suggests the need for broader awareness-raising interventions. Orientation sessions, parent-teacher dialogues, and community outreach initiatives can play a vital role in reshaping perceptions about early learning. As studies have shown, when parents understand the role of play in promoting cognitive, social, and emotional development, they are more likely to support pedagogical approaches that incorporate play (Zosh, Hassinger-Das, & Laurie, 2022; OECD, 2020).

In summary, although play-based pedagogy is gradually gaining acceptance within urban Bangladeshi communities, cultural beliefs about the nature of learning and success continue to influence parental attitudes. Teachers are actively navigating these tensions by aligning their pedagogical practices with parental expectations and by acting as advocates for the value of

play in early childhood education. For more sustainable cultural change, however, systemic efforts to educate parents and community stakeholders will be essential.

Student's Physical Development

A substantial proportion of teachers (74.6%) identified outdoor play activities as most effective in promoting physical development. This strong preference reflects an informed understanding of the importance of gross motor skill development in early childhood, which is optimally supported through physically engaging activities such as running, jumping, climbing, and playing with balls. These forms of active play enable children to develop coordination, balance, spatial awareness, and overall physical fitness, key components of holistic early development (UNICEF, 2018; Zosh, Hassinger-Das, & Laurie, 2022). The data suggest that most pre-primary teachers in Dhaka city government schools are well aware of the types of play-based experiences that effectively support physical growth.

The emphasis on outdoor and movement-based learning is particularly encouraging given the increasing recognition of physical activity as an integral part of early childhood education. Research underscores the role of physically active play not only in motor development but also in supporting self-regulation, attention, and cognitive functioning (OECD, 2020; Wood, 2014). Nevertheless, a small subset of respondents who did not explicitly associate outdoor play with physical development may benefit from further professional development to strengthen their conceptual clarity across developmental domains.

Analysis of teacher responses to six Likert-scale items further reinforces a generally positive perception of play's role in fostering physical development. A majority of teachers acknowledged the importance of both structured (72.73%) and unstructured (66.99%) play in enhancing physical fitness and motor coordination. This dual emphasis indicates an appreciation of the complementary nature of teacher-guided and child-initiated activities in supporting motor development (Siraj-Blatchford, Muttock, Sylva, Gilden, & Bell, 2002; Bergen, 2014). However, the relatively greater reliance on structured formats may reflect an overdependence on curriculum-aligned approaches and the Teacher's Guide, potentially at the expense of providing spontaneous, child-directed movement experiences.

This pattern is significant as unstructured physical play has been shown to encourage autonomy, creativity, and intrinsic motivation in children—qualities that structured activities alone may not fully nurture (Zosh, Hassinger-Das, & Laurie, 2022; Walsh, McGuinness,

Sproule, & Trew, 2010). Additionally, while the majority of teachers (77.99%) disagreed with the notion that they can remain passive during physical play, classroom realities such as overcrowding, limited outdoor space, and inadequate materials may impede their ability to actively facilitate such activities.

Interestingly, a notable proportion of respondents (27.27%) remained neutral about the role of physical play in improving learning focus. This suggests a potential gap in understanding the broader developmental benefits of active play, including its positive influence on cognitive engagement, attention span, and classroom behaviour (Wood, 2014; OECD, 2020). Thus, while teachers appear generally aware of the physical benefits of play-based pedagogy, the findings also highlight the need for enhanced professional training to build a more integrated understanding of how physical activity intersects with cognitive, emotional, and social development.

Students' Language and Communication Development

The majority of respondents (67%) identified storytelling and picture reading as the most effective methods for enhancing children's communication skills. This preference reflects teachers' awareness that storytelling supports vocabulary acquisition, sentence formation, listening skills, and oral expression (Isbell, Sobol, Lindauer, & Lowrance, 2004; Zosh, Hassinger-Das, & Laurie, 2022). Picture reading, in particular, encourages descriptive language, inferencing, and narrative construction are core elements of early literacy and communicative competence (Neuman & Wright, 2014). These strategies are well-aligned with play-based learning approaches that emphasize language-rich interactions in meaningful contexts (UNICEF, 2018).

However, the relatively low recognition (only 9.1%) of role-playing and pretend play, despite their proven benefits for developing expressive language, turn-taking, and conversational skills (Bodrova & Leong, 2015; Weisberg, Zosh, Hirsh-Pasek, & Golinkoff, 2013), reveals a pedagogical gap. This finding suggests a need for targeted professional development to deepen teachers' understanding of how dramatic play fosters language through peer interaction, imagination, and socially embedded communication.

The analysis of the rating scale responses on language and communication development shows a strong alignment with child-centred, play-based educational theories. Over 75% of teachers agreed with statements endorsing the role of storytelling, role-play, group interaction, and rhythmic games in language development. This suggests a growing awareness of social and

interactive processes in language acquisition (Vygotsky, 1978; Wood, 2014). Teachers' recognition of group activities and guided play as essential tools reflects a positive shift away from rote memorization toward more dialogic, experiential practices.

However, some inconsistencies remain. While 75.12% of teachers agreed that teacher facilitation during play enhances language learning, 17.70% were neutral, indicating possible uncertainty about the teacher's active role in such contexts. Furthermore, although most rejected the notion that unstructured play is ineffective for shy or reserved children, approximately 16–17% were neutral on such statements. This uncertainty may reflect limited exposure to inclusive play strategies or challenges in classroom implementation, particularly in large or resource-constrained settings (Ravet & Mtika, 2024).

Lastly, teachers' strong conceptual support for play-based communication development may be influenced by policy discourse or training materials, rather than grounded in regular classroom experience. In contexts where class sizes are large and curricular demands rigid, aspirational beliefs may not always translate into effective implementation. Therefore, it is essential to provide continuous, practice-based training and classroom support to help teachers bridge the gap between theory and practice.

Students' Socio-emotional Development

A significant majority of teachers (72.7%) identified cooperative games, such as building blocks or puzzles done collaboratively, as the most effective strategy in promoting social and emotional development among pre-primary students. This preference reflects a sound understanding of the benefits of cooperative play, which supports skills such as teamwork, turn-taking, problem-solving, and conflict resolution, are core components of social competence and emotional regulation (Bodrova & Leong, 2015; Copple & Bredekamp, 2009). These forms of structured group play naturally foster peer interaction, allowing children to practice empathy and communication within meaningful, playful contexts.

However, the relatively lower prioritization of role-play and free play indicates a somewhat narrow perception of effective strategies for socio-emotional development. This limited recognition overlooks the proven value of imaginative and unstructured play in fostering emotional intelligence, self-expression, and interpersonal awareness (Anderson, 2005; Whitebread, Coltman, Jameson, & Lander, 2009). These findings suggest the need for expanded professional development to deepen teachers' understanding of a broader spectrum

of play types, particularly those that allow for child-led exploration of emotions and social dynamics.

The teachers' responses to rating-scale items generally affirm positive perceptions of play's role in nurturing socio-emotional growth. Nearly 80% of respondents acknowledged that play enhances social interaction, emotional expression, and peer bonding. These findings resonate with international literature emphasizing the role of play in promoting children's resilience, emotional self-regulation, and prosocial behaviours (UNICEF, 2018; Zins, Weissberg, Wang, & Walberg, 2004). Teachers also largely agreed that play contributes to creating an inclusive, supportive learning environment, an important foundation for equitable early childhood education.

However, the notable proportion of teachers selecting neutral responses on key indicators (e.g., 16.27% neutral on play improving social interaction; 17.70% on emotional value of role-play) highlights areas of concern. This neutrality may reflect limited pedagogical confidence, inconsistent training on socio-emotional learning (SEL), or a lack of practical examples to link theory to classroom experience (Ljubetic, Maglica, & Vukadin, 2020). In contexts like Dhaka's government schools, where class sizes are large and play is often undervalued, such ambiguity may stem from systemic limitations rather than philosophical disagreement.

Furthermore, while the majority rejected negative beliefs (e.g., that play doesn't foster empathy or peer bonding), a small but meaningful minority either agreed or were unsure. This suggests that traditional norms emphasizing discipline and academic control may still shape some teachers' views on emotional development (Ahmed, 2024). It also raises the possibility that SEL is not yet clearly integrated within the national pre-primary curriculum or training standards.

Finally, although many teachers endorsed the importance of the teacher's role in guiding emotional learning during play, nearly 20% remained neutral, and a small group (6.7%) disagreed. These findings highlight structural and pedagogical barriers, such as overcrowded classrooms, limited planning time, and ambiguous curricular guidance, which may restrict teachers' engagement in children's socio-emotional learning during play. To overcome these barriers, robust, evidence-based teacher training programs are needed to emphasize the theory, practice, and contextual adaptation of SEL through play. Such initiatives would help move beyond surface-level awareness and support confident, intentional implementation of socio-emotional development strategies in early learning environments.

Students' Cognitive Development

The highest percentage of respondents (39.2%) identified building blocks or construction toys as the most effective tools for promoting cognitive growth. These activities foster essential cognitive processes, such as spatial reasoning, sequencing, planning, and cause-effect understanding, while simultaneously engaging fine motor skills (Bodrova & Leong, 2015; Whitebread, Basilio, Kuvalja, & Verma, 2012). The preference for construction-based activities suggests that many teachers recognize the cognitive demands of play scenarios that require logical thinking and problem-solving.

Closely following, 37.3% of teachers selected sorting and matching activities—tools that support classification, attention to detail, and early mathematical reasoning. These activities help children form mental categories, recognize patterns, and develop an understanding of number sense and quantitative relationships (Ginsburg, Lee, & Boyd, 2008; Clements & Sarama, 2020). The selection of these activity types demonstrates teachers' awareness of how structured cognitive play can foster foundational thinking skills critical for later academic success.

The teachers' responses to the rating scale further reflect a generally strong belief in the cognitive benefits of play-based pedagogy. More than 75% of teachers agreed that both structured and unstructured play enhances cognitive skills such as memory, attention, and conceptual understanding. This alignment with developmental science suggests that many teachers either have professional exposure to child development theory or have observed these effects through experience. It is promising to see this recognition in a context like Dhaka's government schools, where academic pressures often dominate early learning environments.

However, a significant proportion of neutral responses (around 18% across most items) indicates areas of conceptual ambiguity or limited confidence. This may be linked to insufficient pre-service or in-service training that clearly explains the cognitive mechanisms activated during different types of play (UNICEF, 2018; Zosh, Hassinger-Das, & Laurie, 2022). It may also reflect limited access to appropriate learning materials or constrained classroom environments where play-based methods are difficult to implement effectively.

Moreover, while most teachers rejected misconceptions that role-play or puzzles lack cognitive value, a small but meaningful minority (approximately 10–15%) expressed uncertainty or

agreement with such views. This suggests that traditional dichotomies, viewing play and learning as separate domains, still persist in some teachers' conceptual frameworks. These beliefs may be reinforced by policy emphasis on academic readiness, exam performance, and formal instruction, which can sideline play as a peripheral activity.

Even when teachers conceptually support play for cognitive development, practical constraints such as large class sizes, limited time, or lack of materials may hinder their ability to embed play meaningfully into the curriculum. Therefore, while the findings point to a promising awareness of the cognitive value of play, they also highlight the urgent need for targeted capacity-building and ongoing professional development. Training should bridge theory and practice, equip teachers with adaptable strategies for diverse classroom settings, and support a shift away from rote methods toward more child-centred cognitive stimulation through play.

Challenges Faced by the Teachers

The responses from teachers regarding the challenges in implementing play-based pedagogy reveal critical structural and systemic limitations that directly impact the feasibility and sustainability of such approaches in government primary schools in Dhaka. The overwhelmingly high percentage (90.9%) citing insufficient resources, such as play materials and physical space, indicates a stark misalignment between the aspirations of play-based pedagogy and the practical realities of under-resourced classrooms. This is consistent with global findings that resource constraints are among the most frequently reported barriers to quality early childhood education, especially in low- and middle-income countries (UNESCO, 2024; World Bank, 2019).

Equally concerning is the reported difficulty in managing large class sizes during play-based activities, noted by 81.3% of respondents. Large class sizes limit opportunities for individualized guidance, hinder effective facilitation of group dynamics, and challenge the management of active learning environments (Pyle & Danniels, 2017). These logistical challenges point to broader systemic issues such as inadequate infrastructure, poor student–teacher ratios, and overcrowded classrooms, which are especially prevalent in urban public schools in South Asia (Alam, 2022).

Another significant barrier is the lack of training, reported by 66.5% of the teachers. While the national curriculum and policy frameworks in Bangladesh increasingly advocate for play-based and child-centred pedagogy, implementation has been hampered by insufficient in-service training and limited pre-service exposure to developmentally appropriate practices (UNICEF,

2018; Islam, 2024). Teachers without adequate training may lack the pedagogical confidence or theoretical grounding necessary to integrate play meaningfully into structured learning.

Sociocultural beliefs also emerged as a notable constraint. Around 75.1% of teachers reported that parental misunderstanding or undervaluation of play impedes implementation. In many communities, academic achievement, especially in literacy and numeracy, is considered the hallmark of early education success, leading parents to pressure schools toward more didactic approaches (Wood, 2014; Fung & Cheng, 2011). This dissonance between home and school values creates added stress for teachers and may result in a lack of play within the classroom.

Additionally, 37.8% of teachers indicated that time constraints within the curriculum limit their ability to integrate play-based methods. This reflects the rigidity of national curriculum structures that often prioritize content coverage over experiential learning and may not allow sufficient flexibility for child-led exploration. Lastly, although fewer teachers (23.4%) reported a lack of administrative support, this still highlights a gap in leadership practices that are essential for fostering an enabling environment for pedagogical reform (Lillard et al., 2013).

Critically, these findings indicate that while teachers may recognize the value of play-based learning, they operate within a broader system that does not fully support its implementation. The combination of logistical, pedagogical, cultural, and institutional barriers underscores the need for a coordinated, multi-level strategy. Addressing these challenges requires improved resource allocation, strong parental and community engagement, and continuous professional development. Without tackling these foundational issues, efforts to mainstream play-based pedagogy in government schools will remain limited in scope and impact.

Additional Support Required by the Teachers

Teachers' perceptions of the additional support needed for implementing play-based activities highlight several key areas where targeted interventions are necessary to strengthen the effectiveness and sustainability of play-based pedagogy in classrooms. The most frequently cited need, reported by 92.3% of respondents, was the increased availability of play-based resources. This overwhelming response underscores the foundational role that adequate and age-appropriate materials (e.g., toys, puzzles, construction sets, manipulatives) play in enabling teachers to translate pedagogical principles into meaningful classroom experiences. It reinforces prior findings that identified resource scarcity as a major barrier to effective implementation (UNESCO, 2024; World Bank, 2019).

Closely following this, 78.5% of teachers expressed a strong need for more professional training. This reflects a crucial recognition among teachers that pedagogical knowledge and practical strategies for managing, designing, and assessing play-based learning are essential for successful integration. While many teachers may be conceptually aligned with the philosophy of play-based learning, they often lack the structured training necessary to operationalize it in diverse and often challenging classroom settings (UNICEF, 2018; Pyle & Danniels, 2017). Professional development should therefore move beyond one-off workshops and provide continuous, hands-on opportunities for teachers to deepen their understanding, experiment with classroom practices, and reflect on their pedagogical choices.

Additionally, 78% of respondents highlighted the need for parental and community awareness-raising. This reflects an insightful awareness among teachers that pedagogical change within schools must be supported by shifts in cultural and parental attitudes. In many contexts, especially in South Asia, academic success is often narrowly defined in terms of rote learning and exam performance, leading parents to undervalue play as a vehicle for learning (Fisher, Hirsh-Pasek, Golinkoff, Singer, & Berk, 2012; Moore, Edwards, Cutter-Mackenzie, & Boyd, 2014). Awareness campaigns and parent-teacher engagement strategies can help reshape community perceptions, validating play as a legitimate, evidence-based approach to early learning and development.

Lastly, while it was the least frequently cited among the listed areas of support, nearly half of the teachers (49.3%) emphasized the need for stronger administrative support. This includes not only material backing (e.g., allocating space or resources) but also the creation of a school culture where play-based learning is promoted, monitored, and rewarded. Leadership support is often a key factor in whether new pedagogical approaches are normalized or marginalized within school systems (Fisher, Hirsh-Pasek, Golinkoff, Singer, & Berk, 2012). Principals and school leaders need to be engaged as active allies in the pedagogical shift, ensuring that timetables, resource allocation, and teacher evaluations are aligned with the goals of play-based education.

While this study provides valuable insights into teachers' perceptions and experiences of implementing play-based pedagogy in government pre-primary classrooms in Dhaka city, it is important to acknowledge several limitations that may affect the scope and generalizability of the findings. This study employed a convergent parallel mixed-methods design, which allowed for a comprehensive analysis by integrating both quantitative and qualitative data. However,

the cross-sectional nature of the survey and classroom observations means that the data reflect a single point in time and may not capture changes in teacher perceptions or practices over time. Longitudinal research could provide deeper insights into how attitudes and practices evolve with ongoing training, curriculum changes, or policy shifts. Moreover, this study was delimited to government-run pre-primary classrooms in Dhaka city and did not extend to private institutions or rural settings, nor did it evaluate child outcomes. Nevertheless, the insights generated offer valuable implications for policy and practice, particularly in low-resource urban environments.

Taken together, considering the delimitations, these findings point to the need for a comprehensive, system-level response to ensure that teachers are not left alone to navigate the complexities of implementing play-based pedagogy. A supportive ecosystem, comprising adequate materials, ongoing professional development, community awareness, and institutional encouragement, is essential for scaling and sustaining quality play-based practices across government primary schools.

Chapter 07: Recommendations

This chapter presents a set of practical and evidence-informed recommendations derived from the study's findings and discussion on teachers' understanding and implementation of play-based pedagogy in government pre-primary schools in Dhaka. The recommendations are organised into three categories: (a) for pre-primary teachers, (b) for school and educational authorities, and (c) for researchers. Each category addresses the specific needs, gaps, and opportunities identified through both quantitative and qualitative data. The aim is to provide actionable guidance that supports the effective integration of play-based pedagogy within the existing educational practices.

7.1 Recommendations for Pre-primary Teachers

a) Strengthening Pedagogical Knowledge of Play-Based Learning

Pre-primary teachers should deepen their understanding of the principles and developmental benefits of play-based pedagogy. The study found that while most teachers are familiar with structured forms of play, such as storytelling and picture reading, there is less awareness of the educational value of unstructured and imaginative play, such as role-play or pretend play. Teachers should seek to understand how different types of play support various domains of child development: cognitive, language, physical, and socio-emotional. This requires proactive engagement in professional development opportunities such as workshops, in-service training, peer learning circles, and online courses that focus on child development theories and play pedagogy. Strengthening this foundation will help teachers move beyond a surface-level awareness toward a more intentional and effective integration of play into everyday teaching.

b) Integrating Play into Daily Classroom Practice

Teachers must view play not as an isolated or optional component, but as a central teaching strategy integrated across the curriculum. Play-based activities should be systematically embedded in lesson plans to introduce, reinforce, and assess key concepts. For instance, construction play and puzzles can be used to build cognitive and motor skills, while group games and role-plays can enhance language use and collaboration. Teachers should be trained and encouraged to design flexible learning environments where play and instruction are not in conflict but complement each other. Incorporating both structured and free play into the daily routine allows children to explore, experiment, and learn in developmentally appropriate ways.

c) Facilitating and Scaffolding Children's Learning Through Play

One of the recurring challenges identified was teachers' uncertainty about their role during play. Teachers need to adopt a more active facilitative role, observing children's play, identifying learning opportunities, and extending children's thinking through open-ended questions, modelling, and guided interaction. Teachers should learn to scaffold play experiences in ways that are responsive to children's developmental levels and individual needs. For example, helping a child navigate a disagreement during a group game or expanding vocabulary during pretend play are practical ways to promote learning through teacher facilitation. Teachers must also avoid overly directing or interrupting children's play, instead keeping a balance between child-led exploration and adult guidance.

d) Creating and Adapting Play Materials and Environments

Given the resource constraints commonly found in government schools, teachers should be encouraged and trained to use low-cost, locally available, and recycled materials to create play-based learning resources. Everyday items such as bottle caps, sticks, paper scraps, or cloth pieces can be transformed into teaching aids, puzzles, or imaginative props. Teachers should also consider arranging the classroom following the teacher's guide, such as a quiet corner for picture reading, an area for blocks, or a dramatic play zone, within the limits of available space. Engaging children in making their own play materials can also foster creativity, fine motor skills, and ownership of learning.

e) Engaging with Parents and Community to Promote Understanding of Play

The study highlighted that many teachers feel constrained by parents' limited understanding of the importance of play in early learning. Teachers should take on the role of parent educators and advocates, helping families understand the value of play-based pedagogy. This can be done through parent meetings or by inviting parents to observe play-based sessions. Teachers should communicate how play contributes to school readiness, emotional development, and foundational academic skills. Building trust and alignment with parents will reduce resistance to non-traditional methods and strengthen the home-school partnership essential for a holistic learning environment.

f) Reflective Practice and Peer Learning

Teachers should cultivate a habit of reflective practice, regularly evaluating the effectiveness of their play-based strategies and adapting their approaches based on observations of student

engagement and learning. Sharing experiences and insights with colleagues through peer discussion groups or community of practice networks can also be highly beneficial. This collaborative approach fosters innovation, mutual support, and a shared commitment to improving teaching practices in early years settings.

7.2 Recommendations for School and Educational Authorities

a) Ensuring Availability of Play Materials and Learning Resources

The most frequently cited barrier to implementing play-based pedagogy was the lack of appropriate learning materials and resources. School authorities must take steps to ensure that pre-primary classrooms are adequately equipped with age-appropriate, diverse, and developmentally suitable play materials such as building blocks, puzzles, storybooks, matching games, and sensory toys. In resource-constrained contexts, headteachers should promote the use of low-cost or recycled materials and provide guidance to teachers on how to develop such materials locally. Allocating budgetary provisions for play-based learning tools should be a standard component of school development plans to ensure long-term sustainability.

b) Creating a Supportive Physical Environment

Classroom space was identified as a major constraint, particularly in overcrowded government schools. School management should explore ways to optimise existing space to create dedicated play zones that support different types of play: dramatic, constructive, sensory, and quiet. Even in limited settings, divide classes into sub-sections if needed. Additionally, authorities should advocate for infrastructural planning in new school construction that prioritises child-friendly, flexible, and safe play environments. Ensuring access to outdoor space for gross motor play should also be a priority, where possible.

c) Strengthening and Institutionalising Teacher Training

The study findings underscore the urgent need for sustained professional development focused on the theory and practice of play-based pedagogy. Educational authorities must ensure that the in-service training programs provide comprehensive instruction on how to design, facilitate, and assess play-based learning. Such training should not be one-off but should be embedded in continuous professional development frameworks, utilising post-training follow-up activities. Collaboration with teacher training institutions, NGOs, and academic experts can help develop

contextualised training modules that are relevant to the realities of government school settings. Mentorship and peer-learning models can also enhance the impact of training efforts.

d) Building Positive School Leadership and Administrative Support

Although only a minority of teachers cited a lack of administrative support, the role of school leadership remains pivotal in creating a culture that values play-based learning. Headteachers and other school teachers should be oriented to understand the developmental importance of play and how to support its implementation. Administrative encouragement, such as allowing flexible timetables, allocating space for play, or celebrating good practices, can significantly boost teacher motivation. Leadership should also be involved in monitoring the quality of implementation through regular classroom observations, feedback sessions, and inclusion of play-based goals in teacher performance reviews.

e) Aligning Curriculum and Timetable with Play-Based Pedagogy

Many teachers indicated that a rigid curriculum and lack of time are barriers to engaging students in meaningful play. Curriculum planners and education boards should revise pre-primary timetables to ensure adequate daily time is allocated for both structured and free play. The curriculum should clearly articulate how key learning outcomes in language, math, social skills, and physical development can be achieved through play-based methods.

f) Promoting Community Awareness and Engagement

Educational authorities should lead efforts to raise awareness among parents and the wider community about the value of play in early childhood education. Awareness campaigns through school meetings, posters, and collaboration with community leaders can help shift cultural attitudes that view play as unproductive. Schools can organise play events, open classroom sessions, or exhibitions of children's play-based work to showcase learning outcomes and build public trust. Engaging families in this way can reduce resistance and strengthen the partnership between home and school, making play-based learning more accepted and supported.

g) Monitoring and Evaluation of Play-Based Implementation

Finally, to ensure that policy intentions translate into actual classroom practice, there should be regular monitoring and evaluation mechanisms in place. Educational authorities should develop tools to assess not only the presence of play-based activities but also the quality of

implementation and its impact on child development. Feedback from teachers, children, and parents should be incorporated into improvement plans. Integrating play-based learning indicators into the School Monitoring Form can also institutionalise accountability and improvement processes.

7.3 Recommendations for Researchers

a) Expanding Contextual Understanding of Play-Based Pedagogy

There is a pressing need for researchers to deepen the contextual understanding of how play-based pedagogy operates within government pre-primary classrooms in Bangladesh, particularly in urban, resource-constrained settings like Dhaka. While international literature offers rich insights, locally grounded research is necessary to explore how cultural beliefs, systemic constraints, and teacher preparedness influence the adaptation and effectiveness of play-based approaches. Researchers should prioritise ethnographic, longitudinal, or mixed-method studies that document teachers' day-to-day practices, challenges, and adaptive strategies within these settings.

b) Exploring Parental and Community Attitudes

Since teachers reported sociocultural resistance and parental misconceptions as barriers, researchers should explore in greater depth the beliefs, values, and expectations held by parents and community members regarding early childhood education and play. Studies that investigate how these beliefs are shaped and how they influence classroom practices and school–community relationships can offer critical insights into how awareness campaigns and community engagement strategies should be designed. Participatory research approaches involving parents, teachers, and children could be particularly valuable in this regard.

c) Developing and Validating Assessment Tools for Play-Based Learning

One significant gap in current practice is the lack of tools and strategies for assessing learning outcomes in play-based settings. Researchers have an important role to play in developing, testing, and refining assessment instruments that are developmentally appropriate, culturally relevant, and feasible for use in Bangladeshi pre-primary classrooms. These tools should not only assess cognitive skills but also capture children's socio-emotional, language, and physical

development in a holistic manner. Building evidence around the reliability and usability of such tools can significantly strengthen pedagogical practice and accountability.

In conclusion, the recommendations outlined in this chapter aim to address the multifaceted challenges and opportunities identified throughout the study to strengthen the implementation of play-based pedagogy in government pre-primary schools in Dhaka. By offering targeted suggestions for pre-primary teachers, educational authorities, and researchers, the chapter underscores the importance of a coordinated and systemic approach. Advancing play-based learning will require not only better training, resources, and community engagement but also an evidence base to inform policy and practice. If these recommendations are adopted and sustained, they hold the potential to create more developmentally appropriate, inclusive, and engaging learning environments for young children in Bangladesh.

Chapter 8: Conclusion

This study aimed to explore pre-primary teachers' understanding and implementation of play-based pedagogy within government primary schools in Dhaka city. The study focused on several key objectives: understanding teachers' conceptualisation of play-based learning; examining how it is reflected in their practices; identifying effective play-based activities that support various developmental domains; and uncovering the challenges and support needs experienced by teachers in this context.

By employing a mixed-methods approach, integrating data from surveys, classroom observations, interviews, and curriculum review, the study revealed the current status of play-based pedagogy in the sampled schools. The findings indicate that while many teachers demonstrate a basic theoretical awareness of play-based learning and its developmental benefits, significant gaps remain in their practical application and depth of pedagogical understanding. Teachers overwhelmingly acknowledged the value of play in promoting physical, cognitive, linguistic, and socio-emotional development. However, their preferences for structured or literacy-aligned activities (e.g., storytelling, matching games) over more open-ended forms (e.g., role-play, free play) suggest a limited grasp of the full spectrum of play-based approaches.

The study further revealed that teachers' ability to implement play-based pedagogy is significantly constrained by systemic and contextual factors. Insufficient resources, overcrowded classrooms, limited training, rigid curriculum structures, and a lack of parental awareness were consistently identified as major barriers. Despite policy-level advocacy for child-centred pedagogies, many teachers expressed uncertainty, particularly around their role in facilitating guided play and integrating developmental objectives into play-based activities. This highlights the disconnection between pedagogical theories and the realities of classroom implementation.

The discussion chapter critically engaged with these findings, relating them to national and international literature. It illustrated the complex interplay between policy intentions, institutional capacity, cultural beliefs, and teacher agency. While there is an encouraging shift in mindset among many teachers towards child-friendly teaching methods, the evidence suggests that these changes remain largely aspirational unless accompanied by sustained support mechanisms.

In response, the recommendation chapter outlined a series of targeted actions. For pre-primary teachers, it stressed the importance of ongoing professional learning, reflective practice, and intentional integration of diverse play types. For school and educational authorities, recommendations included the provision of adequate materials, routine flexibility, structured teacher training, and parental sensitisation initiatives. For researchers, the study calls for longitudinal and contextually grounded inquiries into classroom practices, play-based assessment strategies, and community perceptions of early learning.

This study was delimited to government-run pre-primary classrooms in Dhaka city and did not extend to private institutions or rural settings, nor did it evaluate child outcomes. Nevertheless, the insights generated offer valuable implications for policy and practice, particularly in low-resource urban environments.

In conclusion, the successful adoption of play-based pedagogy in Bangladesh's government pre-primary classrooms requires more than conceptual endorsement. It demands a systemic reorientation, grounded in evidence, responsive to context, and inclusive of teachers' voices, that can bridge the gap between early childhood education policy and practice. Only then can the transformative potential of play-based learning be fully realised for the holistic development of every child.

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Research Report

on

Exploring Primary Education Practitioners' Understanding of Inclusive Education in Bangladesh

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Abstract

This qualitative study investigates the understanding of inclusive education among primary education practitioners in Bangladesh. Informed by Booth and Ainscow's (2011) "Index for Inclusion," the research explores practitioners' knowledge, beliefs, attitudes, and reported practices across three interconnected dimensions: creating inclusive cultures, producing inclusive policies, and evolving inclusive practices. Data have been collected through semi-structured interviews with primary school teachers and headteachers, classroom observations utilizing checklists, and potentially key informant interviews with relevant stakeholders.

Thematic analysis has been employed to identify recurring patterns and nuances in practitioners' conceptualizations of inclusion and the factors influencing its implementation within the primary education context of Bangladesh. The study aims to bridge the gap between policy and practice, identify facilitators and barriers to effective inclusion, and inform targeted professional development and policy recommendations to enhance the quality of education for all diverse learners in Bangladesh. The significance of this research lies in its potential to contribute context-specific insights into the understanding and implementation of inclusive education, ultimately fostering more equitable and participatory learning environments in primary schools.

Acronyms

Abbreviation	Full Form
IE	Inclusive Education
UN	United Nations
UN-CRPD	United Nations Convention on the Rights of Persons with Disabilities
UNESCO	United Nations Educational, Scientific and Cultural Organization
EFA	Education for All
MDGs	Millennium Development Goals
SDGs	Sustainable Development Goals
GC4	General Comment No. 4 (on Article 24 of the UN-CRPD)
NEP	National Education Policy
NCTB	National Curriculum and Textbook Board
MoPME	Ministry of Primary and Mass Education
DPE	Directorate of Primary Education
NGO	Non-Governmental Organization
PEDP	Primary Education Development Program
PTI	Primary Teachers' Training Institute
CWD	Children with Disabilities
INGO	International Non-Governmental Organization
UDL	Universal Design for Learning
ADB	Asian Development Bank

CRPD	Convention on the Rights of Persons with Disabilities
DFID	Department for International Development (UK)
GoB	Government of Bangladesh
ICE	International Conference on Education
JICA	Japan International Cooperation Agency
MoE	Ministry of Education
UDHR	Universal Declaration of Human Rights
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
PEDP III	Primary Education Development Program – Phase III
PEDP IV	Primary Education Development Program – Phase IV
ECD	Early Childhood Development
IEP	Individualized Education Plan
LDCs	Least Developed Countries
GIEP	General Inclusive Education Practice
CRC	Convention on the Rights of the Child
TLM	Teaching-Learning Materials
ICT	Information and Communication Technology
TPD	Teacher Professional Development
QIE	Quality Inclusive Education
TIE	Transformative Inclusive Education

MI Theory	Multiple Intelligences Theory
KII	Key Informant Interview
URC	Upazila Resource Center
DI	Differentiated Instruction
CBM	Community-Based Model
NAPE	National Academy for Primary Education
BEF	Bangladesh Education Forum
ICHD	Institute of Child and Human Development
B.Ed	Bachelor of Education
M.Ed	Master of Education
ATEO	Assistant Thana Education Officer
TEO	Thana Education Officer
UPE	Universal Primary Education
EMIS	Education Management Information System

Chapter 1: Introduction

1.1 Overview

Education is not only a person's right but also a catalyst for human development and growth (Sen, 2003). The drive for inclusive education is rooted in fundamental human rights principles, enshrined in international declarations such as the Universal Declaration of Human Rights (1948) and the Convention on the Rights of the Child (1989). These documents emphasize the right of every child to education without discrimination. However, despite these declarations, millions of children worldwide continue to be excluded from meaningful educational opportunities.

Education unfolds in several situations, including formal and non-formal settings, as well as within families and the broader society. Inclusion transcends merely providing access to schools and ensuring children's attendance. The focus is on creating interactive, proactive, and learner-centered teaching and learning procedures that yield anticipated learning results and their effective application in real life. Thus, inclusive education is not a peripheral concern but is fundamental to attaining high-quality education for all students and establishing a more inclusive society as a whole. Therefore, inclusive education is necessary to achieve social fairness and is a constituent aspect of lifelong learning.

The idea and practice of inclusion have generated more discussion and influence than few other educational phenomena. Inclusion has also received a lot of scientific interest. When it comes to defining inclusion, the majority of commentators concur on two points. First off, physical positioning is not the only factor in inclusion (e.g. Mitchell 2008; Slee 2008; Thomazet 2009). Second, the majority of critics concur that the term "inclusion" is difficult to define and is interpreted in a variety of ways (e.g. Artiles et al. 2006).

Inclusive education has been reported to be a significant way to help advance the post-2015 Millennium Development Goals (MDGs), now the Sustainable Development Goals 2030, to make education available to everyone and address human rights and social justice issues such as equality and equity, recognition, and discrimination.

In order to achieve high-quality education for everyone, inclusive education (IE) is currently seen as a global agenda for educational system change. Bangladesh is one of several developed and developing nations working to overcome the disparities in access to and quality of education for all children through inclusive education reform. Many children are still not receiving an education, despite the government of Bangladesh's numerous policy reform measures and interventions to support inclusive education in the country. Most of the time, those who attend do not finish the entire educational cycle (Ahsan & Tasnuba, 2019). In reaction to historical and ongoing injustices in educational systems around the world, the idea of inclusive education has gained significant traction. Education has historically frequently followed a model that divides and classifies students according to perceived distinctions, whether those distinctions are based on socioeconomic background, language, ethnicity, disability, or other characteristics. In addition to limiting each learner's potential, this segregation supports discriminatory practices and social divisions.

1.2 Background

Throughout the 20th century, educational philosophy saw a dramatic shift from a medical model of disability that focused on personal shortcomings to a social model that emphasized the role that social barriers play in ability. This shift radically changed the concept of special education, leading to a shift from segregated to integrated and eventually inclusive environments. With more than 175 nations having adopted the 2006 UN Convention on the Rights of Persons with Disabilities (UN-CRPD; UN 2006), inclusive education has emerged as a truly global standard (Powell, Edelstein, and Blanck 2016).

As a result, it may be argued that inclusive education principles would ensure that schools are free of discrimination based on gender, race, religion, disability, culture, or differences caused by pupils' geographic or socioeconomic backgrounds (UNESCO, 1994). However, Bangladesh, one of the world's most densely populated countries (population density 962 people per square kilometre, with a population estimated at 160 million), continues to face challenges to ensuring equal access to education.

Furthermore, the necessity for educational institutions that can accept and promote diversity has been brought to light by globalization and growing cultural diversity. IE scholars frequently argue that adopting an inclusive strategy is a difficult undertaking. For instance, Ainscow (2005a) characterized the evolution of inclusive practices as a multifaceted phenomenon due to the involvement of multiple elements. He maintained that the creation of an inclusive school culture may be hampered by the lack of a shared

language among the community, educators, and legislators. This makes creating an inclusive school culture much more difficult.

In this context, the Salamanca Statement (UNESCO, 1994) marked a pivotal moment, articulating a global consensus on the principles and practices of inclusive education. This document called upon governments worldwide to adopt inclusive policies and practices, signaling a paradigm shift in educational thinking.

But it has been difficult to go from policy to practice. Implementing inclusive education is extremely difficult in many countries, especially developing ones. These obstacles include a lack of funding, a lack of training for teachers, and ingrained social attitudes that support exclusion (Ainscow, 2017; UNESCO, 2020). As a result, it is critical to analyze the conceptualization of inclusive education and investigate ways that policymakers might successfully execute this revolutionary strategy. In their investigation of IE policy and practice, Malak S. et al. (2013) noted that Bangladesh has passed laws and policies supporting IE throughout the previous 20 years. Legitimized norms, however, do not guarantee that practices are in line with IE principles (see another article referenced in Malak 2013). According to the findings, "the policy guidelines in regard to low-leverage tools are typically used in the context of IE in Bangladesh. For these reasons, Bangladesh, like many underdeveloped nations, failed to reach the EFA targets by 2015 (UN, 2017). Eliminating exclusion due to negative attitudes and a failure to respond to diversity in race, economic background, social class, ethnicity, language, religion, gender, sexual orientation, and ability is the goal of inclusive education (Ahsan et al., 2018).

Chapter 2: Literature Review and Conceptual Framework

In this chapter, a brief literature review is provided for the understanding of existing literature on inclusive education. Different research articles were reviewed by the researchers to gain an understanding of the topic. Further, how the conceptualization of inclusive education can be addressed in developing countries to provide access to education to all children has been examined. It explores both the international and research-based understanding of inclusive education and, critically, provides guidance for developing countries' policy officials to realign their practices with this educational transformation.

2.1 Concept of Exclusion, Segregation, and Integration

The recognition that education is not merely about access but about participation and belonging has further fueled the push for inclusive practices. Segregated educational settings often fail to provide students with the social and emotional support necessary for holistic development. In contrast, inclusive environments promote a sense of community, foster empathy, and encourage students to learn from and with one another. Since the Salamanca Declaration (UNESCO, 1994), globally there has been a major shift from segregated modes of education to inclusion.

It has been repeatedly shown that teachers who are well-versed in inclusive principles and practices are better able to modify curriculum, pedagogy, and assessment to accommodate the unique needs of every student, which strengthens academic and social-emotional outcomes (Ainscow, 2017; Mitchell, 2017). The most comprehensive and authoritative document outlining the human right to inclusive education is General Comment No. 4 of the CRPD (2016). It goes into great length about what is needed to carry out inclusive education faithfully and authentically. Crucially, GC4 does more than just determine inclusion. It also identifies types of provisions that are frequently rebranded as inclusion (integration) or that are incompatible with inclusion (exclusion, segregation).

Integration is defined as a process of placing person with disabilities in existing mainstream educational institutions, as long as the former can adjust to the standardized requirements of such institutions (United Nations 2016: paragraph 11).

Segregation is defined as when the education of students with disabilities is provided in separate environments designed or used to respond to a particular or various impairments, in isolation from students without disabilities (United Nations 2016: paragraph 11).

Exclusion is defined as when students are directly or indirectly prevented from or denied access to education in any form (United Nations 2016: paragraph 11).

2.2 Concept of Inclusion

At the World Conference on Special Needs Education in Salamanca in 1994, inclusion was introduced as a potential new educational strategy (UNESCO 1994). According to Ainescow (2005), inclusive school improvement must extend beyond individual schools and include systemic change that challenges perceptions of disabilities as a process for identifying and removing barriers to improve all students' participation and achievement, rather than as built-in issues with individual students.

"A process aiming at giving quality education for all while respecting diversity and the diverse needs and skills, traits, and learning expectations of the students and communities, eliminating all forms of prejudice" is how UNESCO (2009) defines inclusive education (p. 18).

According to Ainscow (2017), inclusion is a continuous process that involves involving people, establishing participatory environments and institutions, and advancing inclusive values. It entails decreasing all types of exclusion and discrimination and enhancing everyone's involvement in local cultures, communities, and curricula.

Inclusion is most essential about putting inclusive values into the world as it is Inclusive values-led development includes integrating a shared framework of principles to everything that happens in, and around, the environment. M. Ainscow (2017). Earlier ideas of "integration" and "mainstreaming," which tended to focus mainly on disabilities and "special educational needs," and assumed that students were changing or becoming "ready for" adjustments by the mainstream, are different from inclusive education. The child's right to participate and the responsibility of the institution to accept, on the other hand, are the focus of inclusion. Understanding the connection between principles and actions is essential to doing the right thing. The most practical stage in building a school might involve connecting actions to values (Ainscow M., 2017).

It focuses on understanding children's opinions and acting upon them (Ainscow M., 2017). Reducing exclusion is a necessary part of increasing inclusion. It entails overcoming the pressures of isolation that prevent participation. A basic human right and a process of educational institutional change that aims to eliminate barriers so that all children can engage in the same-age learning environment and activities. Integration, segregation, and exclusion are not the same as inclusive education. Defining inclusion has proven difficult for researchers in the area of inclusive education. It is frequently referred to as a process rather than an outcome or as a journey rather than a goal (Runswick-Cole 2011).

According to General Comment 4 (UNCRPD, 2016), inclusion is a process of systemic reform that includes adjustments to teaching strategies, content, approaches, structures, and strategies in order to remove obstacles. The goal is to give all students of the appropriate age range an environment and learning experience that is fair, participatory, and meets their needs and preferences. (Paragraph 11 of United Nations, 2016). Systemic reform, adaptations and modifications removing obstacles, an appropriate age range, equity, a participatory environment and experience, and needs and preferences are the crucial terms here. However, these terms could be misconstrued in practice and policy if there is a lack of in-depth understanding of inclusive education (IE in 21st century, 2020).

According to Artiles and Kozleski (2007) and Artiles and Kozleski (2016), inclusive education is the cornerstone of educational reform. They contend that it should focus on improving access, participation, and outcomes for all marginalized students, not just those with disabilities. In their definition of inclusive practices, McLeskey et al. (2014) argue that inclusive schools necessitate systemic change at the school level that is centered on teacher practice and capacity building in areas where teachers are driven to advance.

2.3 Inclusion in Bangladesh: Constitutions

Inclusive education is enshrined in government legislation. Effective measures will be implemented, according to Article 17 of the 1972 Constitution of Bangladesh. These measures include (a) creating a uniform, mass-oriented, and universal system of education and providing free and compulsory education to all children; and (b) connecting education to the needs of society in order to eradicate illiteracy and create citizens who are trained and motivated. This is consistent with the Universal Declaration of Human Rights' (UDHR) Article 26(1 & 2) (United Nations, 2015b). The UDHR's Articles 19(1) and (2) support equal opportunity and the implementation of sensible policies to guarantee a fair allocation of resources

among a nation's people. Articles 19(2), 28(1), and 28(3) specifically prohibit discrimination on any basis with relation to admission to any public space or educational establishment.

Since 2001, Bangladesh has been using sector-wide strategies in basic education and health. For (i) secondary education, (ii) technical and vocational education and training, and (iii) non-formal education, other SWAPs are ready. In terms of educational access, Bangladesh has made great strides, but it still has a long way to go before fulfilling the renewed international commitment to "ensure inclusive and equitable quality education" so that "no one is left behind." Bangladesh continues to struggle with unclear regulations and implementation misconceptions, according to several recent studies. Therefore, a strong link between policy and implementation strategies for inclusive education in Bangladesh is necessary to achieve SDG 4.

2.4 National Education Policy 2010 (NEP10)

The NEP10 aims to end all forms of discrimination against socially excluded and marginalized people in order to promote inclusive education (Ministry of Education, 2010). By meeting their requirements, the strategy also aims to enable each child to thrive in school and in their social lives. To achieve these aims, the NEP10 states that all children have equal access to their local school with support services reaching out to children with disability and underprivileged children (MoE, 2010, p. 5). Equally, the policy seeks to empower all children to be successful academically and in their social life by catering to their needs. For this purpose, the publication of textbooks in indigenous languages and the recruitment of teachers from the relevant ethnic background have been emphasized (NEP10, p. 8). Over and above this, addressing disparity between rural and urban schools has been stressed (Ministry of Education, 2010, p. 9).

2.5 National Children Policy 2011

The National Children Policy 2011's guiding principles are as follows:

1) Protecting children's rights in line with the Bangladeshi constitution, the Child Act, and international charters and conventions
2) Reducing poverty
3) Ending all forms of child abuse and discrimination
4) Ending all forms of abuse and discrimination against female children, and
5) Including children and embracing their opinions for their safety.

Disparities in the education of children from different groups remain visible in Bangladeshi society, despite the fact that Article 28 of the Constitution guarantees non-discrimination to all citizens and Article 11 of the Constitution protects fundamental human rights (Ministry of Law, Justice and Parliamentary Affairs, 2019) (Tazrian, 2020).

2.6 Inclusive Education in Primary Education

Bangladesh, like many other nations, has implemented a variety of legislative changes to support inclusive education in response to international declarations. By enacting the Compulsory Primary Education Act 1990, Bangladesh mandated primary education for all children (Ministry of Primary and Mass Education (MoPME), 1990). Additionally, the National Education Policy 2010 (MoE, 2010) strongly advocated for inclusive education to be implemented in Bangladeshi primary schools.

A major influence in the education movement is inclusive education, a philosophy which emphasizes ensuring that all children have access to adequate, relevant, affordable, and successful education within their community (Booth & Ainscow, 1998). Despite the fact that educational institutions vary significantly in their classification and inclusion rates, inclusive education has gained a lot of attention and empirical research in the decades that have followed (Richardson and Powell 2011).

A working definition of inclusive education was created in 2003 by Bangladesh and the UNESCO-Dhaka office. It states that "Inclusive education is an approach to improve the education system by reducing and removing barriers to learning and valuing each children's needs and capabilities."

Based on the globally accepted concept of inclusive education, the Government of Bangladesh has developed the functional definition of inclusive education through the PEDP III documents, which is as follows:

By reducing and eliminating obstacles to learning and recognizing each child's unique needs and potential, inclusive education aims to enhance the educational system. This strategy aims to significantly improve the educational opportunities for students who attend school but perform below expectations for various reasons, as well as those who are not enrolled but could be if families, communities, schools, and educational systems were more receptive to their needs. Disparities in the education of children from different groups remain visible in Bangladeshi society, despite the fact that Article 28 of the Constitution

guarantees non-discrimination to all citizens and Article 11 of the Constitution protects fundamental human rights (Ministry of Law, Justice and Parliamentary Affairs, 2019) (Tazrian, 2020).

"Provide quality education to all children through an efficient, inclusive, and equitable educational system" is the stated overall goal of PEDP IV (May 2018), which comes after PEDP III. It is designed to achieve targets set out in the Sustainable Development Goals (SDGs), particularly SDG 4 (Quality Education) and SDG 5 (Gender Equality), and aligned with NEP 2010, which guarantees “free and compulsory primary education for all children.”

Considering many definitions of inclusive education makes it evident that its goal is to meaningfully incorporate all students in the educational process. It is also important to note that inclusion does not mean just enrolling children into schools; rather, it demands full and equal participation as well as completion of a quality education cycle by all children. (Zulfiqar, B., et al, 2018).

The development of a conceptual framework for inclusive education in PEDP-III to guide inclusive programming and institutional capacity building resulted from gaps in the knowledge of inclusive education identified in PEDP-II, GoB. This demonstrates the leadership's commitment to enhancing the institutionalization of inclusive education at all system levels. The goal of inclusive education is to make it possible for all students—including those from historically marginalized groups—to learn and engage in mainstream educational systems. However, only placing excluded students within a mainstream setting does not achieve the goal of inclusion (Slee, 2018). Inclusive settings focus on identifying and then reducing the barriers to learning and participation, rather than on what is "special" about the individual student or group of students and targeting services to address the "problem." However, the success of inclusive education will require practical solutions to problems such as its effective conceptualization to eliminate exclusionary pressures that restrict the equal participation of all community members (Slee, 2018). Therefore, it could be assumed that the values of inclusive education would ensure such a welcoming environment in schools that would be free from the effects of negative forms of discrimination based on gender, culture, ethnicity, disability, religion, or socio-economic and or geographic backgrounds (UNESCO, 1994).

Ainscow (2017) underscores the dynamic and continuous nature of inclusion, emphasizing its role as a "never-ending process" that necessitates the active involvement of all stakeholders. This process involves the creation of participatory systems and the embedding of inclusive values within educational practices.

It is not merely about physical presence but about fostering a sense of belonging and ensuring meaningful participation in the cultural, communal, and curricular aspects of schooling. This perspective aligns with the broader understanding that inclusion is intrinsically linked to social justice and equity (Booth & Ainscow, 2011).

Furthermore, the shift from integration to inclusion marks a paradigm shift in how we perceive disability and diversity. Integration, as noted earlier, often required students to adapt to existing mainstream structures, whereas inclusion mandates that educational systems adapt to meet the diverse needs of all learners. This distinction is crucial, as it places the onus on institutions to dismantle barriers to learning and participation (Florian, 2014).

The evolution of inclusive education transcends mere pedagogical shifts; it represents a fundamental restructuring of societal values and educational systems. As established in the Salamanca Statement (UNESCO, 1994), inclusive education is not a transient approach but a foundational principle advocating for the right of every child to learn within mainstream educational settings, irrespective of their diverse needs. This perspective challenges traditional models that often segregated or integrated students based on perceived 'readiness' or 'normality.'

Inclusive education means improving the whole school environment to ensure the presence, participation, and achievement of all children with the aim of achieving quality education for all learners (Ainscow, 2005b). The guideline prepared by UNESCO (2009b) based on the International Conference on Education (ICE) 2008 described inclusive education as a "process aimed to eliminate all forms of discrimination while providing high-quality education for everyone while respecting diversity and the various needs, abilities, characteristics, and learning expectations of the students and communities." Additionally, inclusive education has been reported to be a significant way to help advance the post-2015 Millennium Development Goals (MDGs), now the Sustainable Development Goals 2030, to make education available to everyone and address human rights and social justice issues such as equality and equity, recognition, and discrimination (Chowdhury & Chakma, 2019; Ellis & Rowe, 2020). The reluctance of academics to provide a singular, fixed definition of inclusion highlights its fluid and context-dependent nature (Runswick-Cole, 2011). Instead, inclusion is often conceptualized as a journey, a continuous process of improvement rather than a static state. This process demands ongoing reflection, adaptation, and collaboration to ensure that all students are valued and supported. Additionally, it is a way for a society to

free itself from poverty, discriminatory behaviors, and prejudice (Datzberger, 2018; Frank, 2018; Slee, 2008; 2011).

Vargas (2017) found that meeting the needs of every child in a fair and democratic way offers hope for advancing inclusive education. A plethora of literature draws on a philosophy that inclusion does not necessarily mean to include.

The commitment to providing education to all is reflected in the conceptualization and development of projects including the Reaching Out of School Children program (ROSC I, II) (Directorate of Primary Education, 2020) and the Primary Education Development Program (PEDP I, II, III, IV) (Directorate of Primary Education, 2020). These projects are undertaken by the MoPME and funded by international donors such as the Asian Development Bank (ADB), Japan International Cooperation Agency (JICA), Department for International Development (DFID), UNESCO, UNICEF, United States Agency for International Development (USAID), and the World Bank. By facilitating access to formal primary education through grants to learning centers and education allowances, particularly for disadvantaged children, ROSC, an intervention program designed by the Bangladeshi government (The World Bank, 2016) and run by the Ministry of Primary and Mass Education, has given primary education to out-of-school children in targeted underserved upazilas (sub-districts) (The World Bank, 2010).

However, the term 'inclusive education' is not clearly stated or conveyed in these policies either in English or Bangla, although they show a strong commitment by the Government of Bangladesh to achieve the post-2015 EFA goals (UNESCO, 2017b) and sustain the pressure to prioritize education within the aid budgets of donor countries (Global Education Report, 2013; Wood, 2020). Equal access to education for all children with disabilities in every school in Bangladesh is highlighted. But the scope for special education in segregated schools also exists in the National Children Policy 2011, the Rights of Persons with Disabilities Act 2013, and the Education Act 2013 (Ministry of Law, Justice & Parliamentary Affairs, 2019).

2.7 Theorizing Inclusive Education

Theories of inclusive education are correlated with senses of inclusion (Armstrong & Armstrong, 2019). Individuals who view inclusion as an approach of diminishing educational obstacles to accommodate marginalized students perceive it as a transmission of knowledge to educational stakeholders. On the other

hand, scholars who view inclusion as a shift in mindset view it as a way to alter community members' perceptions (Chand & Karre, 2019). Such approaches provide an incredible amount of value for comprehending inclusive education. They emphasize that methods must be taken into account in order to create a setting that supports learning and encourages individual development. The child, family, school, environment, and society must all be taken into account for inclusive education to be effective. They believe that it is essential to bridge the gap between theory and practice.

Similarly, Ainscow et al. (2019) argue that changes in the beliefs, attitudes, behavior, and thought processes of policy bureaucrats will be essential to an inclusive approach. Eliminating obstacles and enabling freedom of access and choice will also be necessary to promote inclusion and equity by ensuring equal chances and participation.

2.8 Reducing Exclusion

All students are treated as unique individuals by inclusive education, which is a societal movement against educational exclusion (Ainscow, 2005b, 2020; Armstrong & Armstrong, 2019; Shebba & Ainscow, 1996). According to their opinions, in order to overcome exclusion, theoretical ideas of inclusion must be closely related to their practical implementation.

According to other scholars on inclusive education, reducing social exclusion requires creating the environment for all children to receive an education from a human rights perspective (Barton, 1997; Slee, 2018; Vargas, 2017). Diversity in terms of race, gender, ethnicity, culture, religion, and disability is addressed by this democratic idea of inclusive education. Rights, equality, equity, recognition, representation, and nondiscrimination are all implied by inclusion at all levels. Governments must acknowledge diversity in local, contextual, and individual demands in order to do this. To prevent exclusion, equity necessitates the recognition of individual rights and the provision of appropriate services. For inclusive policies to be effective and lessen exclusion, these practices need to be mirrored in everyday life (Slee, 2018).

For those who are impaired by social, cultural, environmental, or physical conditions, education is a human right, according to a number of education professionals and academics (Eryong & Xiuping, 2018; Sen & Tasioulas, 2018). More precisely, education can contribute to "equal participation" and "educational equality" (Nussbaum, 2006). Thus, it is imperative to eradicate injustice by shifting the focus

of policy from productivity and performance to individual respect and inclusive ideals (Slee, 2011). If not, there may be conflicts since educators must adhere to the inclusion policy standards, which may be at odds with their own beliefs and conceptions of inclusion (Slee, 2011). Research conducted in Africa and India confirms the right to education can equip people in low-income countries with skills to participate in the global knowledge economy and enhance social mobility (Chand & Karre, 2019; Tromp & Datzberger, 2019).

2.9 Policy Conceptualization

According to Braun et al. (2011), policy bureaucrats comprehend and translate policies by creating meaning out of policy texts, conceptualizing them, and then translating them to suit the situation. The policy's objectives, communication of the problem, and strategy for problem resolution are all included in its content. The foundation of inclusive education is the belief that every child has a right to attend the same school. According to this viewpoint, it is necessary to conceptualize inclusive education policy from a moral standpoint. To guide changes in inclusive education policy, such a moral stance requires a theoretical foundation (Penney, 2017).

The goal of inclusive education policy is to continuously and systemically change educational policies, cultures, and values in addition to expanding educational funding and enhancing access and facilities. The success of inclusive education policy can also be significantly impacted by the way inclusive languages and inclusive education are envisioned in policy papers (Erdocia, 2022). As a result, it's critical to modify language when concepts change. In other words, from the standpoint of social justice and human rights, it is detrimental when there are inconsistencies between the concept of inclusive education and the language used in policy.

Social inclusion and the creation of inclusive societies will not take place when policy conceptualization is markedly biased (Ellis & Rowe, 2020; Guerrina & Murphy, 2016; Messiou, 2019).

According to Mahlo (2017) and Pasha et al. (2017), education policies must take diversity into account in order to foster a positive learning environment for all students. They contend that policy officials need to be dedicated to the ideals and concepts of inclusive education, even though it is imperative that they gain an understanding of the subject. The difficulties in developing nations seem to be rooted in cultural norms (Chand & Karre, 2019; Gettleman & Raj, 2018; Muthukrishna & Engelbrecht, 2019; Zangmo,

2018). If policy bureaucrats neglect to monitor procedures, take into account the efficacy of enacted policies, or attend to community demands, inclusion will be challenging (Haug, 2017; Vargas, 2017). Respecting individual differences and recognizing the potential of learners by giving all kids, with and without disabilities, the assistance they need to fully engage in school.

According to Sen (1992), programs won't be effective unless governments address the difficulties encountered by marginalized and discriminated-against groups. Recent research supports this opinion by demonstrating that policies need to take into account how to carry out their mandate (Rizvi, 2017).

Policy bureaucrats must acknowledge the context, particularly rural and isolated places, and the population's uniqueness and diversity (Jiménez-Ramírez et al., 2020; Poveda & Roberts, 2018). This relates to the claim that a greater emphasis on equality, rights, and recognition is necessary to demonstrate the government's commitment to democratizing and encompassing education. Human development and inclusive education would undoubtedly be challenging to attain if these prerequisites are not met and sustained (Goldberg, 2019; OECD, 2019; Slee, 2011). Locals can contribute significantly to policy, according to several rural studies (Malkani & Rose, 2018; Rudolph, 2017; Sen & Tasioulas, 2018). Research can benefit from the rich knowledge and insights gained from rural communities (Malkani & Rose, 2018). This emphasizes how crucial it is to interact in person with those involved in education. According to Slee, the viewpoints of individuals who face discrimination are crucial to the effectiveness of policies. Drawing on Slee's reasoning, it is clear that the government has an obligation to foster greater social interaction among all parties involved in education since doing so can help develop inclusive education policies that are both successful and long-lasting. In addition to lowering social isolation, it will demonstrate the acknowledgement and sense of belonging that society possesses to guarantee inclusivity.

2.10 Stakeholder Engagement

Lack of cooperation reinforces social inequality and highlights the importance of developing social cohesiveness, according to a substantial body of research in inclusive education (Cologon, 2019a; Li et al., 2019; Otieno & Onyango, 2018). For instance, by developing a friendly atmosphere, enhancing the capabilities of disadvantaged groups, and placing the demands of the excluded at the center of the agenda for inclusion (Otieno & Onyango, 2018; Spivak, 2012a).

On the other hand, limiting education stakeholders' ability to participate in conversations will encourage exclusion rather than inclusion. Since every nation has unique opportunities, limitations, and challenges, Davie (2015) emphasizes how crucial it is to include the viewpoints of marginalized stakeholders in order to advance diversity and establish rights. Stakeholder perspectives cannot address every social and cultural injustice, but cooperative efforts and discussions can assist in pinpointing issues and formulating remedies. Therefore, as Australian research on people living in remote places has shown, policy administrators can use stakeholder viewpoints as a tool to get the best results from an international policy (Cologon, 2019a; Slee, 2019).

2.11 Cultural Adaptation

Several studies repeatedly demonstrate that policies that do not reflect inclusive ideals will not be able to meet the aims of inclusive education (Ainscow, 2020; Cologon, 2019a; Rose, 2017; Shaikh, 2019). "Change on paper can be easy; in practice it is often more complicated," writes Shaikh (2019) concisely (p. 16). His research shows that although policies may seem great on paper, support systems and procedures are essential for their successful implementation.

Eryong and Xiuping (2018) and Akyeampong and Fofack (2019) recently looked into the value of education in China and Africa. They stated that in order to conceptualize inclusive practices and change society's attitudes of exclusion, it is imperative to address social, cultural, and political viewpoints. Akyeampong (2019) asserts that if society is threatened by ongoing discriminatory behaviors and if a one-size-fits-all policy is required, then the policy will not succeed. This supports claims made by Smit and Nel (2018) and Cologon (2019a) that inclusive education necessitates the reform of educational systems, such as personalizing instruction rather than modifying students to fit the system.

2.12 Research Gap

While studies in Bangladesh have explored various aspects of education (Akhter, 2011; Beutel et al., 2019; Chowdhury & Sarkar, 2018; Rahaman, 2017), the meaningful education of all children, particularly those marginalized or with diverse needs within an inclusive framework, has received comparatively less attention in the existing body of research.

Nonetheless, there are certain problems ingrained in policies, rules, or legislation that clearly contradict the inclusive education principle and undermine the practice. The application of IE in classrooms is

hampered by these ambiguous policy rules, which create a space for conceptual misunderstanding among practitioners and classroom teachers (Malak et al 2013). It is assumed that borrowing policies will guarantee the integration of "best practices"; however, they may ignore the host country's educational context (Steiner-Khamsi, 2014).

Pre-primary and primary education make up the first stage of Bangladesh's legally binding education system. According to a thorough literature study, there hasn't been as much research done on how inclusive education is conceptualized in primary education policy in Bangladesh (Anis F., 2022). The inclusive education strategy that was implemented twelve years ago needs to be restructured, according to a recent study (Rouf, 2021).

Teachers, educational institutions, and systems may need to adapt in order to better meet the varied needs of students and ensure their inclusion in all facets of school life. It also entails locating any obstacles that impede participation and learning both within and outside of the school and lowering or eliminating them. (Haque Z. et al., 2018)

It is evident from reviewing the existing literature that in Bangladesh, major focus has been given, both in policy and practice, to including marginalized students (students with disabilities, ethnic groups, and minorities) in the mainstream schools rather than considering the concept of ‘inclusion’ as a whole. Therefore, this particular research has its foundation on the subsequent research subject in question.

2.13 Research Questions

Research consistently demonstrates that when teachers possess a strong understanding of inclusive principles and strategies, they are better equipped to adapt curriculum, pedagogy, and assessment to meet the individual needs of all learners, leading to improved academic and social-emotional outcomes (Ainscow, 2017; Mitchell, 2017). Therefore, the research question of this study are

1. What do primary education practitioners in Bangladesh understand by the concept of inclusive education?
2. How do primary education practitioners perceive the alignment of government policies with the principles of inclusive education?
3. What strategies do primary school teachers currently use to implement inclusive education in their classrooms?

2.14 Rationale of the Study

Inclusive education (IE) has emerged as a fundamental principle of educational equity and human rights, gaining prominence in global and national agendas. While Bangladesh has ratified international declarations such as the *UN Convention on the Rights of Persons with Disabilities* (UNCRPD, 2006) and committed to achieving Sustainable Development Goal 4 (SDG 4) "inclusive and equitable quality education for all" the implementation of inclusive education remains uneven, particularly at the primary education level.

Despite several policy-level initiatives such as the National Education Policy (2010), National Children Policy (2011), and the PEDP III and IV frameworks there exists a significant gap between policy and practice (Ahsan & Sharma, 2018; Malak et al., 2013). Research indicates that primary school practitioners often interpret IE narrowly, associating it primarily with disability, rather than as a broader commitment to accommodating all forms of learner diversity (Booth & Ainscow, 2011; Ainscow, 2017).

Teachers and school administrators are key agents of change in translating inclusive policies into actionable classroom practices. However, their understanding, attitudes, and beliefs about inclusive education directly influence how (or whether) such practices are implemented (Ahsan, Sharma & Deppeler, 2012; Florian & Black-Hawkins, 2011). In Bangladesh, teachers often report limited exposure to inclusive pedagogy during their training and face resource constraints in applying inclusive methods (Ahsan et al., 2020; Haque et al., 2018).

Moreover, cultural perceptions of disability and diversity, and a prevailing focus on academic performance and rigid curricula, continue to marginalize children from disadvantaged backgrounds, including those with disabilities, ethnic minorities, and the poor (Zulfiqar et al., 2018; DPE, 2018). Understanding how educators conceptualize IE is therefore crucial for identifying systemic gaps and designing contextually responsive training and support systems.

Existing studies on inclusive education in Bangladesh have tended to focus on either policy analysis or pilot project outcomes (e.g., DMIE by Plan International, 2019). Very few studies systematically investigate how primary-level education practitioners understand and implement inclusive principles in regular school settings (Anis, 2022; Malak et al., 2013). This knowledge gap impedes the development of practical frameworks that reflect ground-level realities.

2.15 Significance of the Study

All students, including those with a variety of learning difficulties, begin their formal educational experience in the primary classroom. The ability of practitioners to construct equitable and stimulating learning environments is directly impacted by how they understand inclusive education.

To better understand local requirements and determine what will work to establish and maintain inclusive educational settings, an informed policy is particularly crucial. Local knowledge and perspectives may contribute to a deeper comprehension of policy (Carrington et al., 2019; Parpart & Parashar, 2019). Thus, it appears crucial to acknowledge and value the viewpoints of this significant segment of society (Parpart & Parashar, 2019; Smit & Nel, 2018). It is essential to make sure that a policy supports the variables that a school may face and acknowledges the temporal influence of contextual factors. IE's policy, which contains pertinent norms, principles, and processes, informs its practice. According to an extensive amount of research in the subject of inclusion, even with a good policy, IE's objectives might not be met if the policy does not guide practice (e.g., see Ainscow & Miles, 2009; Bourke, 2010; Slee, 2006). Teachers have been recognized for years as key players in addressing inclusion in the classroom (e.g., see Smith & Leonard, 2005), and IE is very context-oriented (Ainscow, Booth & Dyson, 2006; Armstrong, 2000).

This study directly addresses the critical gap between policy rhetoric and classroom reality by investigating how teachers conceptualize and interpret the principles of inclusion. Understanding their perspectives is crucial for identifying barriers and facilitators to successful implementation, ultimately ensuring that policies translate into meaningful changes in teaching and learning practices (Florian, 2014). A shared understanding of inclusive values and practices among teachers can foster a more welcoming, supportive, and equitable environment for all students, families, and staff. This study can provide insights into the prevailing cultural norms regarding inclusion within primary schools and identify areas where interventions may be needed to promote a more deeply embedded inclusive ethos (Booth & Ainscow, 2011).

By uncovering areas of strength and areas where understanding may be limited or misconstrued, this research can inform the development of targeted training initiatives that address the specific needs of primary educators. This, in turn, can lead to more effective teaching practices and a greater capacity within the primary education system to embrace diversity (Darling-Hammond et al., 2017).

2.16 Conceptual Framework

This study has accumulated two constructs together to develop the conceptual frame. These are

1. Booth & Ainscow's (2011) Index for Inclusion
2. Conceptual Framework for IE from PEDP III (Bangladesh's Primary Education Development Program III)

It is crucial to understand how practitioners of Bangladesh perceive and implement inclusive strategies, as their interpretations significantly impact the educational experiences of diverse learners within mainstream classrooms. This framework is grounded in the understanding that inclusive education is not merely a set of strategies but a transformative philosophy rooted in equity, social justice, and human rights (UNESCO, 1994). As Ainscow (2017) highlights, IE is an ongoing process that necessitates the creation of participatory systems and the embedding of inclusive values within educational practices. This perspective challenges traditional models that often segregate students based on perceived deficits, advocating instead for the recognition of diversity as a strength.

1. Index for Inclusion

This theoretical framework, informed by Booth and Ainscow's (2011) "Index for Inclusion" and the conceptual framework designed in PEDP III for inclusive education, aims to explore primary education practitioners' understanding of inclusive education in Bangladesh. The framework posits that practitioners' comprehension of inclusion operates across three interconnected dimensions, directly influenced by the foundational principles of inclusive education theory: creating inclusive cultures, producing inclusive policies, and evolving inclusive practices.

A. Creating Inclusive Cultures: This dimension investigates the foundational beliefs and values held by practitioners in Bangladesh that underpin an inclusive ethos. Drawing directly from the "Index for Inclusion," it examines

- Practitioners' beliefs in the value of inclusion for all children align with the core principle of valuing all students equally.
- Their attitudes towards diversity and disability emphasize the "Index's" focus on celebrating difference as a resource.

- Their commitment to creating a welcoming and inclusive classroom environment, a key aspect of fostering a sense of belonging as outlined in the "Index."
- Their awareness of foundational IE policies and frameworks, such as the Salamanca Statement (UNESCO, 1994) and the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD, 2006), as these policies often promote the development of inclusive cultures.
- Their understanding and effective use of available resources and support services, which the "Index" highlights as crucial for building capacity for inclusion.

B. Producing Inclusive Policies: This dimension explores practitioners' understanding of the formal and informal structures that support inclusive education within their school context. It aligns with the "Index's" emphasis on establishing a school-wide commitment to inclusion through

- Practitioners' perception of the impact of school culture, leadership, and support in driving inclusive practices, as strong leadership is vital for policy implementation.
- Their understanding of the availability of resources and training to support inclusive policies.
- Their awareness of the role of parental and community involvement in shaping and supporting inclusive policies within the school.
- Their understanding of the influence of policy implementation and monitoring at various levels (school, local, national) on the practical enactment of inclusive principles.

C. Evolving Inclusive Practices: This dimension focuses on how practitioners translate their understanding and the supportive policies into tangible classroom actions. It reflects the "Index's" focus on developing inclusive teaching and learning:

- Their ability to translate theoretical knowledge into practical strategies within the classroom.
- Their implementation of differentiated instruction, universal design for learning (UDL), and other inclusive pedagogical approaches, as advocated by scholars like Florian (2014), is a shift towards inclusive practices.
- Their understanding of IE principles, models, and best practices, drawing on the broader literature that emphasizes effective inclusive teaching.
- Their ability to differentiate IE from other educational approaches, such as special education, aligns with Runswick-Cole's (2011) perspective on moving beyond deficit models to embrace a truly inclusive ethos.

2. Inclusive Education Framework in PEDP-3

The conceptual framework for inclusion in education in Bangladesh, as outlined in the PEDP 3 program document, is structured around five key components:

A. Core Understanding of Inclusion

Inclusive Education is viewed as a system-wide reform aimed at identifying and removing barriers to learning. It emphasizes responding to the diverse needs of all children, both those attending and not attending school, by improving the responsiveness of families, communities, schools, and education systems.

B. Dimensions of Inclusion

Seven key indicators are used to understand the dimensions of inclusion:

- Enrolment
- Active participation
- Addressing learning needs
- Learning achievement
- Year/grade completion
- Primary cycle completion
- Acceptance and social inclusion

C. Target Groups of Inclusion

All children whether in school but underachieving or out of school due to barriers are considered target groups. Inclusion is context-specific, and there should be no fixed or predetermined target groups. Misconceptions such as limiting inclusion to disability or language should be avoided.

D. Principles of Inclusion

- Inclusion aims to ensure quality education for all
- Requires mainstreaming, not isolated interventions
- Must be context-sensitive in identifying target groups
- Must promote equity in all planning and execution
- Advocates for a holistic, social model emphasizing collaboration and individual needs

E. Long-term Vision of Inclusion

Aligned with the SDGs and post-EFA 2030 goals, the vision is:

"Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all by 2030."

These indicators address exclusion factors such as teaching approaches, rigid systems, and lack of resources.

Thereby, the conceptual model visually represents the interconnectedness of these dimensions discussed above

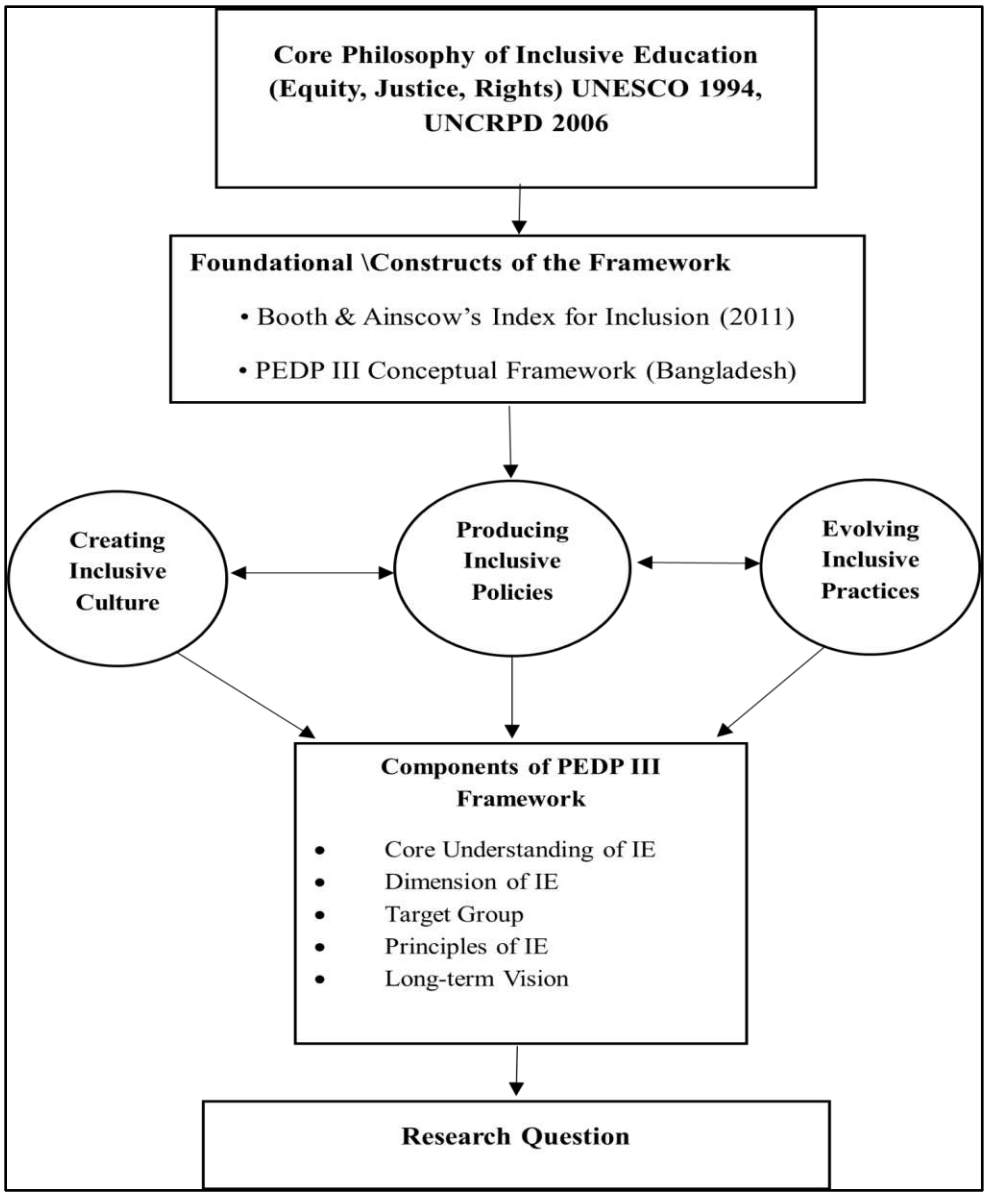


Figure 1: Conceptual Framework

Therefore, based on the conceptual framework, the study design is presented as

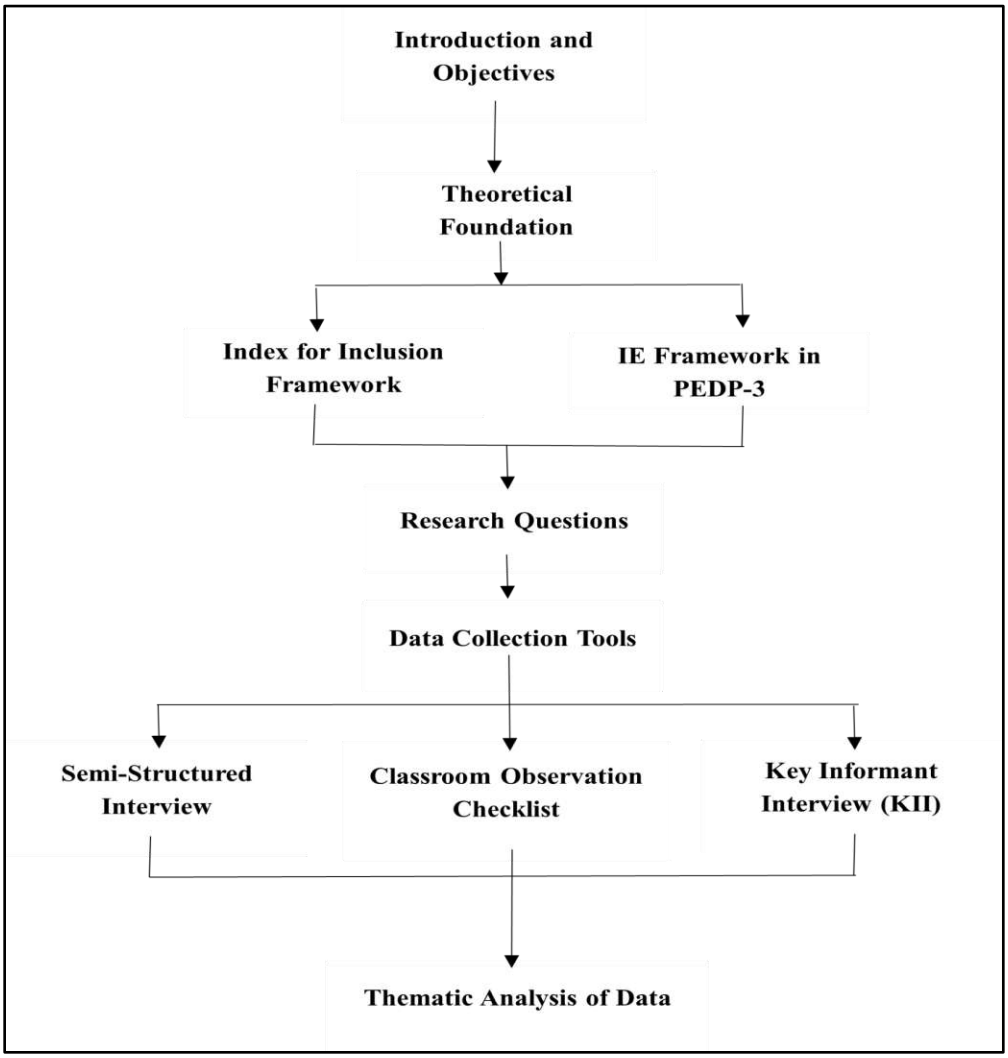


Figure 2: Research design

Chapter 3: Methodology

This chapter addressed research approaches and presented the research design of this study.

3.1 Research Approaches

The study seeks to understand primary education practitioners' subjective experiences, perceptions, and practices regarding inclusive education. Interpretivism aligns well with this aim, as it focuses on exploring meaning and understanding from participants' perspectives (Nickerson, C. 2024). Therefore, this study embarked on a qualitative approach to extract the perspective in detail. A qualitative approach is suitable because the study aims to deeply investigate practitioners' thoughts, beliefs, and experiences rather than testing hypotheses or generating numerical data. Thus, it is a qualitative study in nature. Thematic analysis is applied to analyze the data collected for this study.

3.2 Selection of Sample

Division	Districts	School	Classroom	Teachers		Education Officials		Trainer	
				Ast. Teacher	HT	ATEO	TEO	PTI Inst.	URC Inst.
Dhaka	3	4	4	2		1	1	1	1
Chittagong	3	4	4	4	1				
Rajshahi	2	3	3	3				1	
Khulna	2	1	1	1	2	1	1		1
Mymonshing	1	1	1	1					
Barishal	1	1	1	1					
Rangpur	1	1	1	1					
Shylhet	1	1	1	1	1				
Total	14	16	16	14	4	2	2	2	2

Table 1: Sampling Design

Table 1 presents the study's sampling design, covering 16 schools and 14 districts across Bangladesh's eight divisions, including teachers, classrooms, trainers, and education officials. A combination of stratified and purposive sampling was employed to ensure representation and relevance. Stratified sampling enabled equitable coverage across divisions, enhancing the transferability of findings while capturing diverse contexts of inclusive education (Creswell & Creswell, 2018). Within each stratum,

purposive sampling identified participants with relevant roles and experiences, ensuring information-rich cases to address the research objectives effectively (Palinkas et al., 2015). This approach allowed for in-depth qualitative exploration while maintaining systematic regional representation. Budget allocations from NAPE guided the structuring of this design, balancing national coverage with feasibility. Overall, this sampling approach strengthened the study's validity while aligning with its focus on understanding practitioners' perspectives on inclusive education across Bangladesh.

3.3 Tools Development

The instruments were collaboratively developed by the research team members with careful consideration of the research questions. Subsequently, the tools were refined and improved based on feedback and suggestions from other faculty members at NAPE.

3.3.1 Respondents and Data Collection Tools

Serial No.	Types of Respondents	Instruments
1	Assistant Teachers	Semi-structured Interview Questionnaire
2	Head Teachers	Semi-structured Interview Questionnaire
3	Assistant Thana Education Officer	Key Informant Interview (KII)
4	Thana Education Office	Key Informant Interview (KII)
5	Instructor URC	Key Informant Interview (KII)
6	Instructor PTI	Key Informant Interview (KII)
7	Classroom	Observation Checklist

Table 2: *Respondents and Data Collection Tools*

To collect data from seven types of respondents, the study team developed the above-mentioned seven data collection instruments. To know the knowledge, understanding, and opinion of assistant teachers and head teachers of government primary schools regarding IE, semi-structured interview questionnaires were developed, while an observation checklist was used to observe the inclusive classroom practice of the

interviewed assistant teachers. In addition, KII (key informant interview) tools were used to collect data from the ATEO, TEO, PTI instructors, and URC instructors.

3.3.2 Observation Checklist

The assigned person from the research team observed 16 classroom activities from the selected 16 schools of 14 districts. 45 minutes of class were observed following an observation checklist based on research objectives. Thematic and descriptive analyses were conducted on observation data. The major observation area covers

- Classroom environment
- Pedagogy
- Teaching-learning materials
- Peer interaction
- Teacher-student interaction
- Addressing individual need
- Learning assessment and feedback
- Linkage between content knowledge and pedagogy

3.3.3 Semi-Structured Interview

A series of semi-structured face-to-face interviews were conducted for this study.
An interview schedule was developed for each target group. All interviews were audio-recorded and transcribed. A thematic analysis procedure was followed to analyse the interview data. Thematic analysis provides researchers opportunities to analyze the interviews transcriptions by extracting themes from the data by coding (Denzin & Lincoln, 2000). The objective of the study and the literature review were guiding principles for analysis of the interview data.

3.4 Teachers' Demographic Information

A series of questions were placed and asked during the interview to get primary school teachers' demographic information, such as age, gender, educational qualification, experience in teaching children with special needs, experience in dealing with person with special needs, previous training on

inclusive/special education, knowledge about inclusive education policies, and length of teaching experience.

3.5 Ethical Consideration

Social research involves various ethical issues that include informed consent, confidentiality, originality of the work, demonstrating respect, risk and harm minimization, voluntary participation, keeping away from deception, and so on (Cohen et al., 2007; Johnson & Christensen, 2008). The identity of the participants or their organizations was not mentioned. They were noted by their organizational position (following a number) in order to avoid exposing their identity. All the participants were given a consent note individually, and the purpose of the research was explained accordingly.

3.6 Finalization of Tools

The tools were finalized following a small-scale pilot conducted with respondents from the Gopalganj, Bogura, and Feni Sadar districts. The purpose of this piloting was to (a) ensure that the instruments were clear and easily understandable to the respondents, (b) assess the relevance of the questions, (c) evaluate the appropriateness of the questions in gathering the expected data, and (d) determine the time required to administer each instrument.

3.7 Data Translation and Processing

Data collected from the semi-structured interview questionnaire and KII were translated into English from the recordings by a group of professional translators. Subsequently, data processing was done by checking, editing, and coding the translated questionnaires and checklists. After that, data entry and cleaning were done by the research team.

Chapter 4: Data Analysis

This chapter presents a detailed analysis of the findings based on semi-structured interviews, classroom observations and KII conducted with primary education practitioners including teachers, trainers, and administrators across Bangladesh. All collected data were critically examined for accuracy. Simultaneously, in case where inconsistencies or errors were identified, the research team cross-checked the information to verify and obtain accurate data. Thus, findings are organized thematically according to the three research questions, and subthemes are developed to ensure nuanced understanding. Respondent quotes (coded with role identification) are used to illustrate key points.

4.1 Summary of Interview and Observation Data

The comprehensive analysis of both interview and classroom observation data offers an in-depth understanding of the assistant teachers (AT) and head teachers (HT) of primary schools about their perceptions and practices regarding inclusive education in Bangladesh. This synthesis, aligned with the Index for Inclusion framework, highlights emerging themes across three key dimensions: creating inclusive cultures, producing inclusive policies, and evolving inclusive practices.

4.1.1 Creating Inclusive Cultures: Building Community and Establishing Inclusive Values

Interview data suggest that most practitioners (AT and HT) possess a positive conceptual understanding of inclusive education, often associating it with ensuring access, equity, and respect for diversity. Teachers and education officials articulated the importance of welcoming all learners regardless of ability, background, or language. Observations corroborate this, showing that many classrooms foster a respectful atmosphere where collaboration is encouraged, and discriminatory language is largely avoided. However, a small number of classrooms exhibited only partial promotion of diversity in classroom displays and materials, indicating a need to further strengthen inclusive cultural representation.

4.1.2 Producing Inclusive Policies: Developing the School for All and Organizing Support for Diversity

Practitioners (AT and HT) generally acknowledge the existence of national policies supporting inclusive education but identified notable gaps between policy intent and school-level implementation. Interviews revealed concerns about the limited availability of specialized resources, inadequate teacher training, and

infrastructural barriers. Observation data aligned with these concerns; very few classrooms had accessible learning materials considering the universal design learning (ULD) for all students. While some differentiated instruction and cooperative learning practices were evident, full alignment with inclusive policy expectations was inconsistent across schools, particularly in lower-performing classrooms.

4.1.3 Evolving Inclusive Practices: Constructing Curricula for All and Orchestrating Learning

Both interviews and observations highlight that inclusive practices are emerging but uneven. A majority of teachers reported adapting their teaching to address diverse learning needs, and observation confirmed some use of flexible grouping and peer learning strategies. Nevertheless, the application of *Universal Design for Learning* (UDL) principles was limited. Visual and kinesthetic aids were occasionally used, but auditory resources (mostly verbal instruction) and multiple means of engagement (group work, pair work) and expression (presentation, Q/A) were infrequent.

Only a few teachers from the responders integrated components of Gardner's Multiple Intelligences theory or inquiry-based learning activities, as recommended for fostering constructivist and child-centered learning environments.

Assessment practices showed a promising yet partial adherence to inclusive principles. Interviews indicated that formative assessments are highly valued by the responders, yet classroom observations revealed that varied and individualized assessments were not consistently applied. Feedback practices, while often positive, lacked the systematic, individualized approach necessary to fully support diverse learners' growth.

4.1.4 Summary of Classroom Observation Data

Table presenting the key indicators of inclusive education observed during the classroom teaching and learning activities conducted by assistant teachers (14).

Section	Indicator	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
1. Classroom Environment and Culture	Inclusive Atmosphere	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	(P)
	Displays Diversity	✓	✓	(P)	✓	✓	✓	✓	(P)	✓	(P)	✓	(P)	✓	✗
	Respect & Collaboration	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Non-Discriminable Language	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	(P)
	Participation Encouragement	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Value Diverse Voices	✓	✓	✓	✓	✓	✓	✓	✓	✓	(P)	✓	(P)	✓	(P)
2. Teaching Techniques and Methods	Differentiated Instruction	✓	✓	✓	✓	✓	✓	✓	✓	✓	(P)	✓	(P)	✓	✗
	Instructional Strategies Variety	✓	✓	✓	✓	✓	✓	✓	(P)	✓	(P)	✓	(P)	(P)	✗

	Peer Learning	✓	✓	✓	✓	✓	✓	✓	✓	✓	(P)	✓	(P)	✓	(P)
	Cooperative Learning	✓	✓	✓	✓	✓	✓	✓	(P)	✓	(P)	✓	(P)	(P)	(P)
	Inclusive Language	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Avoid Bias/Stereotypes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	(P)
3. Theories and Methods	Multiple Intelligence Theory	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Constructivist Approach	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗
	Inquiry/Problem Solving	(P)	(P)	✓	(P)	✓	✓	✓	(P)	✓	(P)	✓	(P)	(P)	✗
	UDL: Representation	(P)	(P)	✓	(P)	✓	✓	✓	(P)	✓	(P)	✓	(P)	(P)	(P)
	UDL: Engagement	(P)	(P)	✓	(P)	✓	✓	✓	(P)	✓	(P)	✓	(P)	(P)	(P)
	UDL: Expression	(P)	(P)	✓	(P)	✓	✓	✓	(P)	✓	(P)	✓	(P)	(P)	(P)
4. Multi-Sensory	Visual Aids	✓	✓	✓	✓	✓	✓	✓	(P)	✓	(P)	✓	(P)	(P)	✗

Teaching Aids															
	Accessibility (Visually Impaired)	(P)	(P)	(P)	(P)	(P)	(P)	(P)	(P)	(P)	(P)	(P)	(P)	(P)	(P)
	Auditory Aids	(P)	(P)	✓	(P)	✓	✓	✓	(P)	✓	(P)	✓	(P)	(P)	✗
	Amplification Devices	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
	Kinesthetic/Tactile Aids	(P)	(P)	✓	(P)	✓	✓	✓	(P)	✓	(P)	✓	(P)	(P)	(P)
	Physical Engagement	✓	✓	✓	✓	✓	✓	✓	✓	✓	(P)	✓	(P)	✓	(P)
5. Assessment and Feedback	Varied Assessment	✓	✓	✓	✓	✓	✓	✓	(P)	✓	(P)	✓	(P)	✓	✗
	Formative Assessment	✓	✓	✓	✓	✓	✓	✓	(P)	✓	(P)	✓	(P)	✓	✗
	Constructive Feedback	(P)	(P)	✓	(P)	✓	✓	✓	(P)	✓	(P)	✓	(P)	(P)	✗

Table 3: Classroom Observation data according to the Key Inclusive Education Indicators

Legend:
✓ = Agree/Yes/To a great extent
(P) = Partial Agree/To some extent
✗ = Disagree/No/Not at all

The observation data collected from 14 primary education practitioners (assistant teachers) provides valuable insights into current inclusive education practices. The data reveal a generally positive trend toward fostering inclusive classroom environments, with most teachers actively promoting respect for diversity, collaboration among students, and the use of non-discriminatory language. Instructional practices such as differentiated instruction, collaborative learning, and the application of constructivist approaches are commonly observed, indicating a foundational awareness of diverse learning needs. However, significant gaps persist in the full implementation of Universal Design for Learning (UDL) principles, particularly regarding the consistent use of multiple means of representation, engagement, and expression. The use of multi-sensory teaching aids, especially auditory resources and materials accessible to students with visual impairments, remains notably limited. Furthermore, while inclusive assessment practices are evident to some extent, the systematic use of formative assessments and individualized, constructive feedback requires further development. Respondents 13 and 14 displayed comparatively weaker implementation across several dimensions, highlighting variability in practice among educators. Overall, while inclusive values appear to be well internalized, there is a clear need for targeted capacity-building initiatives focused on strengthening UDL application, enhancing accessibility, and improving inclusive assessment strategies to ensure that no learner is left behind.

4.2 Thematic Analysis of Data

4.2.1 Theme 1: Understanding of Inclusive Education

4.2.1.1 General Understanding: "Education for All"

A majority of participants recognized inclusive education as the commitment to "educating all children together," irrespective of their physical, intellectual, social, emotional, linguistic, or other conditions.

- Teachers (both head and assistant) frequently mentioned inclusive education as meaning "bringing every child into the classroom" (*Respondent 5, Assistant Teacher*).
- Trainers and officials framed it more comprehensively as both "access and meaningful participation" (*Respondent 2, URC Instructor*). *"Inclusive education is not only admitting all learners but also adapting our teaching so everyone can learn."* (*Respondent 2, PTI Instructor*)

This broader understanding aligns with Booth and Ainscow's (2011) definition of inclusive education, highlighting not only physical presence but also active learning and social belonging. Ahsan et al. (2012) mention that increasing teaching efficacy and attitudes toward inclusive education tend to decrease concerns about inclusion. The teacher preparedness period is the best time to make efforts to improve teaching efficacy that will also contribute to developing teachers' positive attitudes and minimizing their concerns about inclusive education. In general, teaching efficacy is considered the single most important factor that has a correlation with attitudes toward inclusion (Ahsan et al., 2012; Kim, 2006; Malak et al., 2018; Weisel & Dror, 2006). Hence, if teachers feel positive toward inclusive education through the training program, their teaching efficacy will increase.

4.2.1.2 Diversity Dimensions Recognized

Beyond disabilities, some respondents (especially trainers and officials) acknowledged multiple dimensions of diversity, including gender, ethnicity, language, and socio-economic status in Bangladesh.

"We cannot forget tribal children, slum children, and even those who speak in dialects; inclusion is for them too." (*Respondent 1, ATEO*)

However, classroom teachers were more likely to associate inclusive education narrowly with children with disabilities, indicating a need for further professional development to broaden perspectives. The Salamanca Declaration (UNESCO, 1994) states that

> ‘Regular schools with this inclusive orientation are the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society and achieving education for all; moreover, they provide an effective education to the majority of children and improve the efficiency and ultimately the cost-effectiveness of the entire education system (UNESCO, 1994, p. viii-ix).’

Hence, there are arguments around the world about what changes should make a school inclusive. In response to such debates the Salamanca Framework (UNESCO, 1994) further clarifies that

> The fundamental principal of the inclusive school is that all children should learn together, wherever possible, regardless of any difficulties or differences they may have. Inclusive schools must recognize and respond to the diverse needs of their students, accommodating both different styles and rates of learning and ensuring quality education to all through appropriate curricula, organizational arrangements, teaching strategies, resource use and partnerships with their communities (UNESCO, 1994, p. 11-12).

There has been a growing number of published studies regarding teaching efficacy for inclusive practices. Research (e.g., Ahmmed, Sharma, & Deppeler, 2014; Ahsan, Deppeler, & Sharma, 2013; Ahsan, Sharma, & Deppeler, 2012; Forlin, Loreman, & Sharma, 2014; Malinen et al., 2013) identified a number of factors (e.g., age, gender, experience, close contact with students with disabilities, area of specialization, educational qualification, professional training, etc.) as significantly related to influencing teaching efficacy for inclusive practices (Ahsan et al. 2020).

4.2.1.3 Misconceptions and Partial Understandings

A minority of teachers demonstrated partial or inaccurate conceptions, sometimes equating inclusion with mere "integration" without necessary adaptations.

"We admit everyone, but we cannot change the syllabus for them." (*Respondent 7, Assistant Teacher*)

Such comments reflect an ongoing challenge in shifting from a medical model (focusing on individual deficits) toward a social model of disability and inclusion.

Therefore, schools should address diversity in students as well as identify and address adequately pupils' learning needs, modify and simplify curriculum, make required changes in organizational arrangements of schools, and apply appropriate and innovative teaching-learning and assessment strategies.

4.2.2 Theme 2: Perceptions of Policy Alignment with Inclusive Education Principles

4.2.2.1 Awareness of Inclusive Education Policies

PEDP 3 is a strong program document for implementing inclusive education as the document DPE (2011) describes the target group of inclusive education in the following manner:

> "Sub-Component 2.1.3 Mainstreaming Inclusive Education (IE): The sub-component addresses the particular needs in formal schools of tribal children, ethnic minorities, children with learning disabilities, and disabled children. The intention is to create an inclusive culture based on the principle that all learners have a right to education irrespective of their individual characteristics or differences" (DPE, 2011, p. 7).

Additionally, the 7th Five Year Plan, Bangladesh for ensuring participation and reducing disparity in primary education, articulates;

"An inclusive education will enable all primary school-age children to complete quality primary education. The access portion will focus on reaching the unreached, particularly for special needs children, working children, children in difficult circumstances, and children belonging to ethnic minorities or living in remote areas. Tribal children are encouraged to learn in their mother tongue"

Thus, upozila/thana education officials (TEOs & ATEOs) showed high awareness of relevant policies such as the National Education Policy 2010, Children's Act 2013, and PEDP4 strategies promoting inclusive education.

In contrast:

- Many teachers were aware of the government emphasis on “Education for All” but could not cite specific policies.
- Trainers acted as mediators, attempting to bridge policy and practice through training sessions. *"We try to include the policies in our training modules, but teachers forget or misunderstand later."* (*Respondent 2, PTI Instructor*)

This analysis is aligned with the study conducted by Ahsan T. & Malak S. in 2020).

4.2.2.2 Perceived Gaps between Policy and Practice

Respondents almost unanimously agreed that while national policies are progressive, their implementation remains inconsistent and problematic due to

- **Insufficient Resources:** Lack of assistive technology, learning materials, and required adjustments (e.g., flexible routine and assessment system, ramps, accessible toilets and sitting arrangements, and multisensory materials).
- **Inadequate Teacher Preparation:** Specialized training is insufficient to develop real classroom competencies. Teachers mentioned the insufficiency of necessary teaching and learning strategies to address the diverse needs of all students in the training they get over the period of time.
- **Lack of Monitoring**: Several trainers and officials criticized a lack of monitoring and accountability mechanisms at local levels.

4.2.3 Theme 3: Current Strategies and Classroom Practices

4.2.3.1 Differentiated Instruction and Flexible Grouping

Some teachers employed basic forms of differentiated instruction, such as

- Peer tutoring: Assigning stronger students to assist struggling peers.
- Flexible grouping: Mixing students based on their ability for different activities.
- Materials: Use of visual aids and charts to simplify complex topics.

"When I see a child lagging, I place him with helpful friends so he learns better." (*Respondent 9, Head Teacher*)

However, sophisticated differentiation strategies such as tiered assignments or multiple means of engagement (from Universal Design for Learning frameworks) were largely absent.

For effective preparation of teachers for inclusive classrooms, Sharma (2011, 2018) proposed that teachers should be introduced to the 3 H components for their preparedness through teacher education programs to improve their attitudes and self-efficacy. 3 H includes (1) head (knowledge), (2) hand (skill), and (3) heart (beliefs), and those three components need to be carefully addressed through teacher preparation programs. If such balance is maintained, it is expected that teachers' level of teaching efficacy would be improved in inclusive classrooms.

Although teaching efficacy has been researched from various perspectives in the field of inclusive education for students with disabilities, little work has been done to measure teachers' teaching-efficacy beliefs for managing students' challenging behavior (Gibbs & Powell, 2011). Specifically, in the Asian context, research that systematically examined teaching-efficacy beliefs for managing students' challenging behavior in a regular class room is very few, though teachers in many countries in this region are known to be authoritarian in their responses to managing students' behavioral issues (Joshi, Gokhale, & Acharya, 2012; Malak, Sharma, & Deppeler, 2015; UNICEF, 2008).

Some researchers have argued that it is important to explore the relationships between teachers' self-reported teaching efficacy regarding inclusive education and their actual classroom practices and proposed instruments for examining such connections.

4.2.3.2 Building an Inclusive Environment

Most classrooms encouraged mutual respect and social interaction among students from different backgrounds.

Observations recorded:

- Greetings exchanged warmly with all students (even with the students with disability, when present in class)
- Group works that required cooperation and appreciation of diverse abilities.

Nevertheless, in physical environment terms, many classrooms lacked adequate accessibility modifications, such as wheelchair ramps or adapted furniture.

"Our buildings are old, and it is very difficult for wheelchair users to move around." (*Respondent 11, TEO*)

Five to nine percent of children are still not attending school, according to a Plan International (2018) survey, despite numerous policy measures to guarantee education for everyone. Of these educationally excluded youngsters, 53% were found to have special educational needs or disabilities, according to Ahsan et al (2013). Furthermore, a large number of students are admitted but do not attend classes on a regular basis. However, many pupils are being promoted to the next grade despite not meeting the academic level's requirements for competencies. Furthermore, a large number of pupils do not finish the entire primary school cycle. This situation demonstrates the frequency of policy gaps pertaining to IE implementation in the educational system of Bangladesh.

4.3. Assessment Practices: A Major Gap

Assessment methods largely relied on summative tests, with limited use of

- Ongoing formative assessments.
- Adjusted assessment methods for students with special needs (e.g., oral exams, project-based assessments).

"Even if a child cannot write, we have to make him write the same exam because there are no special instructions." (*Respondent 6, Assistant Teacher*)

This mismatch between diverse learning needs and rigid assessment systems was a consistent weakness across the observed settings.

4.4 Cross-Cutting Challenges Identified

Several systemic issues cut across all themes:

- Training Needs: Almost all teachers demanded ongoing, hands-on, school-based training for successfully implementing inclusive practices. Several studies conducted worldwide revealed that previous training on IE significantly contributed to developing positive attitudes among teachers (Kuyini & Mangope, 2011; Sharma et al., 2009). A similar result was found in a study conducted by Ahmmed et at. (2012) on Bangladeshi primary school teachers.

- Parental Involvement: Teachers reported limited engagement from parents of children with special needs, impacting holistic support.
- Societal Attitudes: Some respondents noted lingering stigma against disability and learning difficulties, both among parents and sometimes within peer groups.

"Many parents hide their child's problems instead of cooperating with us." (*Respondent 12, Head Teacher*)

4.5 Summary of Key theme

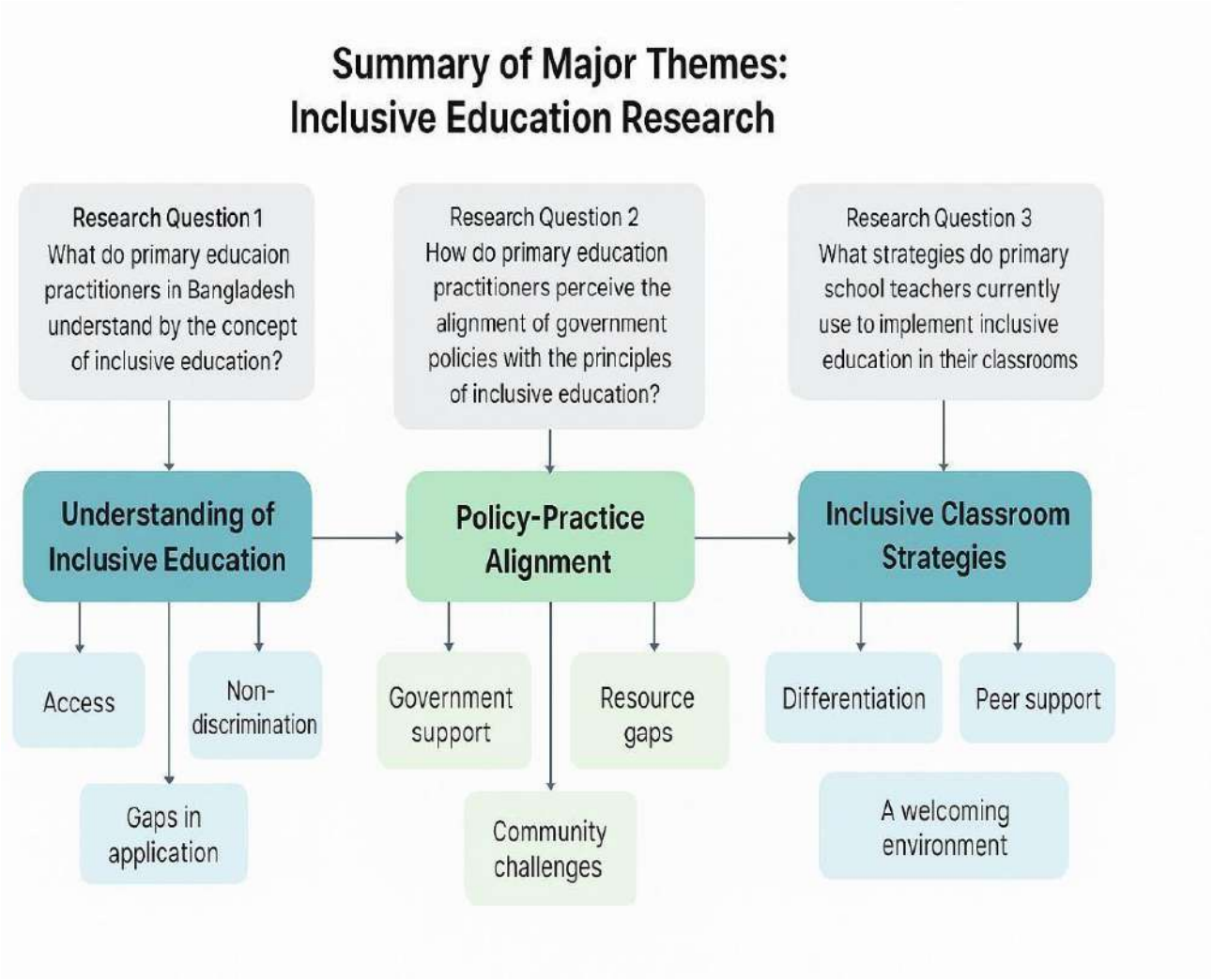


Figure 3: Summary of the Major Themes

Chapter 5: Findings and Discussion

This chapter critically interprets the findings presented in Chapter 4 in relation to the research questions, existing literature, and theoretical frameworks underpinning the study, including the Index for Inclusion (Booth & Ainscow, 2011), Universal Design for Learning (CAST, 2018), and Bronfenbrenner's Ecological Systems Theory (1979). The aim is to examine how primary education practitioners in Bangladesh understand and implement inclusive education and how these findings contribute to ongoing discussions globally and nationally.

5.1 Understanding of Inclusive Education by Practitioners

The findings reveal that while the concept of inclusive education is broadly recognized among practitioners, its interpretation often varies. Many respondents (e.g., Respondent 2, Assistant Teacher) described inclusive education primarily in terms of "bringing all students to school" and "creating opportunities for marginalized children." However, deeper understandings involving curriculum adaptation, differentiated instruction, or inclusive pedagogies were less consistently articulated, especially among classroom teachers.

This resonates with findings from Singal (2006), who emphasized that in contexts like South Asia, inclusive education is often narrowly interpreted as physical access rather than participation and learning. While trainers and officials, such as Respondent 13, exhibited more nuanced understandings mentioning "diversity-responsive teaching strategies"-the gap at school-level implementation remains evident.

The Index for Inclusion highlights the importance of "establishing inclusive values" (Booth & Ainscow, 2011), yet the study indicates that these values are still in a formative stage in Bangladesh. Some schools reflect promising efforts, but systemic commitment is uneven.

5.2 Perception of Alignment between Government Policies and Inclusive Education Principles

There was a generally positive perception of the government's policy commitment toward inclusive education among respondents, particularly officials and trainers. Policies such as the National Education Policy 2010 and initiatives targeting children with disabilities were frequently cited (Respondent 11, PTI Instructor).

However, a recurrent theme across responses was the *implementation gap* between policy intent and classroom realities. Teachers often reported limited practical guidance, insufficient resources, and minimal school-level support structures for inclusion (Respondent 5, Assistant Teacher). This echoes international concerns raised by Peters (2007) and Engelbrecht & Green (2017) that policy rhetoric often outpaces practice.

Moreover, a few respondents noted that although policies mention inclusion, there remains ambiguity around operational definitions and implementation models at the grassroots. As Respondent 9 (TEO) stated, *"The policies are there, but schools do not always know how to translate them into action."*

This misalignment emphasizes the need to move beyond compliance-based approaches towards more integrated, participatory policy enactment models, as recommended by Florian and Spratt (2013).

5.3 Strategies Used by Practitioners for Inclusive Implementation

Respondents identified several strategies to support inclusion, although these varied significantly in depth and sophistication:

- Differentiated instruction (e.g., simplifying tasks, using visuals) was sporadically mentioned (Respondent 6, Head Teacher).
- Peer tutoring and group work were described as effective informal support systems.
- Teacher-parent collaboration was highlighted as a crucial component.
- Emotional support and encouragement were often emphasized over technical instructional modifications.

These grassroots strategies align partially with the Universal Design for Learning (CAST, 2018), which promotes multiple means of engagement, representation, and expression. However, systematic use of UDL principles was not evident among most teachers.

Furthermore, constraints such as large class sizes, limited teaching-learning materials, and inadequate professional development were significant barriers, consistent with Miles and Singal's (2010) observations in similar low-resource settings.

5.4 Strengths and Emerging Promising Practices

Despite challenges, several strengths emerged:

- Commitment to Inclusive Ideals: Most practitioners demonstrated a strong ethical commitment to the idea that all children should be educated together.
- Grassroots Innovation: Teachers displayed creativity in addressing diversity through peer support and context-specific adaptations.
- Policy Momentum: National policies increasingly recognize inclusion, laying a foundation for future strengthening.

These findings resonate with the positive shift towards inclusive mindsets observed globally (Florian & Black-Hawkins, 2011).

5.5 Areas for Improvement

The research identifies critical areas needing urgent attention:

- Enhanced Professional Development: Current training programs must be reoriented towards inclusive pedagogy and practical classroom strategies.
- Resource Allocation: Investment in assistive technologies, accessible learning materials, and inclusive infrastructure is necessary.
- Clearer Operational Guidelines: Policies should be accompanied by clear, actionable frameworks for schools.
- Whole-School Approaches: Building inclusive cultures at the school level requires a holistic effort involving leadership, community, and student voice.

As Friend (2011) and Forlin (2010) argue, genuine inclusion cannot be achieved through isolated teacher efforts alone it demands systemic transformation.

In sum, while the ideals of inclusive education are increasingly embraced among primary education practitioners in Bangladesh, translating these ideals into consistent, sustainable practices remains a work in progress. This study highlights the need for coherent policy-practice linkages, enhanced support systems, and deeper professional learning opportunities. These insights contribute to the broader dialogue on inclusive education in low-resource contexts, offering both hope and a call for critical, sustained action.

Chapter 6: Recommendation and Conclusion

This research set out to explore how primary education practitioners in Bangladesh understand inclusive education, how they perceive the alignment between government policies and inclusive education principles, and how they implement inclusive strategies in their classrooms. Drawing from extensive qualitative data interviews, observations, and key informant discussions spanning teachers, trainers, education officers, and administrators, the findings reveal a complex but evolving picture of inclusive education practices in Bangladesh.

6.1 Three Major Themes Emerged

- Conceptual Understandings of Inclusive Education: While most respondents recognized inclusive education as important for equity and diversity, understandings varied significantly. Some associated it mainly with disability inclusion, while others, particularly trainers and some policymakers, advocated for a broader view encompassing socio-economic, gender, and linguistic diversities.
- Policy Awareness and Alignment: Policy-level stakeholders emphasized the government's commitment to inclusive education through frameworks like the National Education Policy 2010 and National Children Policy 2011. However, at the grassroots level, teachers often had limited awareness or misunderstood policy intentions. Practical challenges, such as resource shortages and large class sizes, created a gap between policy and practice.
- Classroom Practices for Inclusion: Teachers employed various inclusive strategies, including peer learning, differentiated instruction, and extra support sessions. However, many strategies depended on individual teachers' initiatives rather than systematic support. Infrastructural barriers, lack of specialized training, and time constraints were frequently cited obstacles.

Overall, while there is growing awareness and commitment among practitioners, systemic weaknesses and uneven understanding remain major hurdles. More structured, consistent, and contextualized interventions are necessary to realize inclusive education fully.

6.2 Recommendations

Based on reflections from the respondents and analysis of findings, the following detailed recommendations are proposed:

6.2.1 Strengthening Conceptual Understanding

- Enhanced Professional Development Programs: As identified by several trainers and URC instructors (e.g., Respondent 5, PTI Instructor), current teacher training often lacks depth on inclusion beyond disabilities. Therefore, comprehensive in-service and pre-service training must incorporate a wider lens of inclusion including socio-economic, gender, ethnic, linguistic, and ability diversities. Training should use practical case studies, role-plays, and simulations to deepen understanding.
- Incorporating Inclusive Education Theories into Curriculum: Align teacher education curriculum at PTIs and URCs with global frameworks such as the Index for Inclusion (Booth & Ainscow, 2011). Incorporate participatory and reflective activities that encourage teachers to reframe their classroom practices toward inclusivity as designed in the conceptual framework of PEDP III.
- Ongoing Mentorship and Support: Teachers (e.g., Respondent 8, Assistant Teacher) expressed the need for sustained mentorship beyond one-time workshops. Assign trained mentors at cluster or upazila levels to provide on-site support and guidance on inclusive practices.

6.2.2 Enhancing Policy Awareness and Bridging Gaps

- Localized Policy Dissemination Workshops: Organize workshops in Bangla focusing on policy interpretation for classroom application, targeting headteachers, ATEOs, and teachers at the local level. Respondents like the TEO (Respondent 3) emphasized that policies are often perceived as distant and abstract.
- Simplified Policy Briefs: Develop user-friendly summaries of national education policies in simple language, highlighting actionable points related to inclusive education, and distribute them to all primary schools.

- Clear Implementation Guidelines: Create standardized guidelines illustrating how schools can translate inclusive education principles into everyday practice, customized to rural, urban, and special school contexts.

6.2.3 Improving Classroom Implementation

- Resource Mobilization: Teachers (e.g., Respondent 11, Head Teacher) indicated a lack of teaching aids to support inclusive practices. Supply resource packs including assistive materials, multisensory materials, multi-level reading books, visual and auditory aids, and flexible seating arrangements.
- Flexible Pedagogical Strategies: Encourage strategies such as Universal Design for Learning (UDL) approaches, group work, pair teaching, multi-grade teaching techniques, and peer tutoring—approaches some teachers (Respondent 7, Assistant Teacher) already attempt informally.
- Recognition of Good Practices: Institutionalize awards and public recognition for innovative inclusive teaching practices to motivate teachers and create model schools in each community.

6.2.4 Building Collaborative and Community-Based Support Systems

- Family and Community Engagement Programs: Respondents, especially trainers and officials, highlighted the limited role of parents and communities. Launch community sensitization campaigns to build supportive environments for children with diverse needs.
- Cross-Sectoral Collaboration: Partner with NGOs, healthcare providers, and social services to form multidisciplinary support networks around schools, offering additional services like counseling, awareness, and assistive support.
- Strengthening SMCs (School Management Committees): Revise the role of SMCs to monitor and support inclusive practices at the school level actively.

6.2.5 Strengthening Monitoring, Evaluation, and Accountability

- Develop Inclusive Monitoring Indicators: Integrate measurable indicators of inclusion (such as participation rates, diversity-sensitive classroom practices, etc.) into existing school monitoring tools used by ATEOs and TEOs.

- Regular Feedback Mechanisms: Institutionalize feedback loops where teachers can share challenges and successes regarding inclusive practices with supervisors in non-punitive way.
- Action Research at School Level: Encourage teachers to engage in small-scale action research projects documenting their inclusive strategies and reflecting on their effectiveness.

6.2.6 Focus on Infrastructure and Environment

- Ensure Accessibility: Upgrade school infrastructure to be physically accessible for all students, ensuring ramps, accessible toilets, and inclusive classroom designs are available, especially in newly constructed schools.
- Create a Safe and Inclusive School Culture: Foster values of empathy, acceptance, and respect through curriculum activities, classroom discussions, and school-wide campaigns. Respondents like the URC instructor (Respondent 2) emphasized that *"inclusion starts from the mindset, not only from the method."*

6.2.7 Summary of Recommendations

Stakeholder Group	Recommendation	Rationale
Assistant Teachers	Provide regular professional development on inclusive education practices, including UDL and classroom accommodations.	To ensure teachers have practical strategies to address diverse learner needs.
Head Teachers	Encourage inclusive school leadership by supporting collaborative practices and creating an inclusive ethos.	Leadership influences the school's commitment and approach to inclusion.
Education Officials (TEO, ATEO)	Ensure consistent monitoring and mentoring with a focus on inclusive practices in classrooms.	Field officials are critical in bridging policy and classroom practices.
Trainers (PTI/URC)	Integrate hands-on inclusive education modules into pre-service and in-service training programs.	Trainers help shape teachers' pedagogical mindsets and must model inclusive practices.
Community/Parents	Raise awareness and engage in school development processes to support inclusive values.	Community involvement is key in building supportive environments for all learners.

6.3 Final Reflection

This research reveals that although inclusive education is valued in principle by Bangladesh's primary education practitioners, translating this principle into effective practice requires a concerted effort across multiple fronts. Strengthening conceptual understanding, making policies accessible and actionable, equipping classrooms with necessary resources, building collaborative support structures, and fostering inclusive cultures are all essential.

In conclusion, inclusive education is not merely a set of strategies or techniques but a transformative approach that fundamentally alters the way we perceive and organize education. It demands a commitment to equity, social justice, and the recognition of diversity as a strength. By embracing these principles, we can create educational environments where all students can thrive and reach their full potential.

The findings affirm that many teachers and education officials demonstrate goodwill, creativity, and commitment to inclusion despite systemic challenges. With appropriate support, strategic planning, and sustained political will, Bangladesh can make significant strides towards achieving the vision of Education for All.

Future studies could focus on longitudinal evaluations of specific inclusive education interventions, efficacy of inclusive education content of teacher development programs, comparative studies between urban and rural schools, and deeper investigation into students' own experiences of inclusion.

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Annex-A

Classroom Observation Checklist for Inclusive Education Practices

Observer's Name: _____
Date of Observation: _____
School Name: _____
Teacher's Name: _____
Grade/Class: _____
Number of Students Present: _____

Section 1: Classroom Environment and Culture
(Linked to Dimension C: Orchestrating Learning)

1. Inclusive Classroom Atmosphere
    - The classroom environment is welcoming and inclusive for all students. (C2.1: Creating an inclusive learning environment)
        ☐ Agree ☐ Partial Agree ☐ Disagree
    - Displays and materials reflect cultural and linguistic diversity. (C2.1: Creating an inclusive learning environment)
        ☐ Agree ☐ Partial Agree ☐ Disagree
2. Respect and Collaboration
    - Students respect each other's differences and collaborate positively. (C2.4: Children learn from each other)
        ☐ Agree ☐ Partial Agree ☐ Disagree
    - Teachers promote non-discriminatory language and behavior. (C2.4: Children learn from each other)
        ☐ Agree ☐ Partial Agree ☐ Disagree
3. Participation and Engagement
    - All students are encouraged to participate in classroom activities. (C2.2: Learning activities encourage participation for all children)
        ☐ Agree ☐ Partial Agree ☐ Disagree
    - Diverse student voices are respected and valued in discussions. (C2.4: Children learn from each other)
        ☐ Agree ☐ Partial Agree ☐ Disagree

Section 2: Teaching Techniques and Methods
(Linked to Dimension C: Orchestrating Learning)

1. Differentiated Instruction
    - The teacher differentiates instruction to accommodate diverse learning needs. (C2.3: Organizing learning groups to support all children's learning)
    ☐ Agree ☐ Partial Agree ☐ Disagree
    - Various instructional strategies are used (e.g., group work, peer tutoring). (C2.3: Organizing learning groups)
    ☐ Agree ☐ Partial Agree ☐ Disagree

2. Collaborative Learning
    - Students work in diverse groups to enhance peer learning. (C2.4: Children learn from each other)
        ☐ To a great extent ☐ To some extent ☐ Not at all
    - Cooperative learning techniques are effectively utilized. (C2.4: Children learn from each other)
        ☐ Agree ☐ Partial Agree ☐ Disagree
3. Use of Inclusive Language
    - The teacher uses inclusive language that respects all students. (C2.4: Children learn from each other)
        ☐ To a great extent ☐ To some extent ☐ Not at all
    - Stereotypes or biases are avoided in teaching materials and language. (C2.4: Children learn from each other)
        ☐ To a great extent ☐ To some extent ☐ Not at all

Section 3: Application of Theories and Methods
(Linked to Dimension C: Constructing Curricula for All)

1. Multiple Intelligence Theory
    - Teaching strategies reflect Gardner's Multiple Intelligences (e.g., linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal, naturalistic). (C1.1: Constructing a flexible and inclusive curriculum)
        ☐ Yes ☐ No
2. Constructivist Approach
    - Students are encouraged to construct their knowledge through experiences. (C1.3: Curriculum encourages children to ask questions)
        ☐ Yes ☐ No
    - Inquiry-based and problem-solving activities are integrated. (C1.3: Curriculum encourages children to ask questions)
        ☐ To a great extent ☐ To some extent ☐ Not at all
3. Universal Design for Learning (UDL)
    - Multiple means of representation (e.g., visual, auditory, tactile) are used. (C1.6: Curriculum connects to children’s lives)
        ☐ To a great extent ☐ To some extent ☐ Not at all
    - Multiple means of engagement (e.g., choices in activities) are provided. (C1.6: Curriculum connects to children’s lives)
        ☐ To a great extent ☐ To some extent ☐ Not at all
    - Multiple means of expression (e.g., verbal, written, artistic) are encouraged. (C1.6: Curriculum connects to children’s lives)
        ☐ To a great extent ☐ To some extent ☐ Not at all

Section 4: Use of Multi-Sensory Teaching Aids
(Linked to Dimension C: Orchestrating Learning)

1. Visual Aids
    - Visual aids (charts, diagrams, videos) are effectively used. (C2.6: Using a variety of learning resources)

☐ To a great extent ☐ To some extent ☐ Not at all

- Materials are accessible for visually impaired students (e.g., large print, Braille). (C2.6: Using a variety of learning resources)

☐ To a great extent ☐ To some extent ☐ Not at all

2. Auditory Aids
   - Auditory resources (audio recordings, verbal instructions) are integrated. (C2.6: Using a variety of learning resources)

☐ To a great extent ☐ To some extent ☐ Not at all

   - Amplification devices are available for hearing-impaired students. (C2.6: Using a variety of learning resources)

☐ Yes ☐ No

3. Kinesthetic and Tactile Aids
   - Hands-on activities and manipulatives are used to enhance learning. (C2.6: Using a variety of learning resources)

☐ To a great extent ☐ To some extent ☐ Not at all

   - Learning experiences involve movement and physical engagement. (C2.6: Using a variety of learning resources)

☐ Agree ☐ Partial Agree ☐ Disagree

Section 5: Assessment and Feedback
(Linked to Dimension C: Orchestrating Learning)

1. Inclusive Assessment Practices
   - Assessments are varied to accommodate different learning styles. (C2.7: Assessments encourage achievements for all children)

☐ To a great extent ☐ To some extent ☐ Not at all

   - Formative assessments are used to monitor individual progress. (C2.7: Assessments encourage achievements for all children)

☐ To a great extent ☐ To some extent ☐ Not at all

2. Constructive Feedback
   - Feedback is individualized, positive, constructive, and encourages student growth. (C2.7: Assessments encourage achievements for all children)

☐ To a great extent ☐ To some extent ☐ Not at all

Observer's Additional Comments:

Signature of Observer: _____
Date: _____

Annex- B

Interview for Assistant Teacher

A. Name of the Teacher:
B. Gender: Male/ Female
C. Name of the school:
D. Upozilla:
E. Zella:
F. Location: Urban Rural Hill tracts
G. Age (In years): Below 25 Between 25-30 Between 31-35 Between 36-40 Above 40
H. Educational Qualification: SSC HSC BA/ B. SC MA/ M SC Others
I. Professional Degree: C in Ed DPED B Ed M Ed Others NA
J. Work experience (In years):
K. Training in IE (Autism, IE, SEND): Trained Not trained, If yes fill up the following table

SI No.	Name of the training	Number of days

Section 1: Understanding of Inclusive Education

1. Building Community (A1)

    a) What do you understand about inclusive education? What are the factors behind this understanding of inclusive education? (e.g., training, experience, policies, school culture)
    b) Which children might be included in IE?
    c) Do you create a welcoming and inclusive classroom environment? If yes, how? (A1.1: Everyone is welcomed)
    d) Do you encourage students to help each other and collaborate? If yes, In what ways? (A1.3: Children help each other)
    e) Do you engage parents and the community to support inclusive education? If yes, how? (A1.5: Staff and parents/carers collaborate)
2. Establishing Inclusive Values (A2)

    a) Do you ensure that all students are valued equally and have high expectations? If yes, how? (A2.5: Expectations are high for all children; A2.6: Children are valued equally)
    b) Do teachers/students/parents/community use racist, sexist, disablist and other forms of discriminatory name calling/bullying in the school? (A2.7: The school counters all forms of discrimination; A2.8: Non-violent interactions)

c) Do you counter discrimination and promote non-violent interactions? If yes, how? (A2.7: The school counters all forms of discrimination; A2.8: Non-violent interactions)

Section 2: Classroom Practices and Strategies

1. Constructing Curricula for All (C1)
   a) Do you design/adopt/change your lesson plan to include and engage all students? If yes, how? (C1.1: Constructing a flexible and inclusive curriculum)
2. Orchestrating Learning (C2)

   a) Do you use any teaching methods/strategies to support students' diverse needs? If yes, please mention some. (C2.2: Learning activities encourage participation for all children)
   b) Do you utilize multiple intelligence theory to support students' diverse needs? If yes, how? (C2.4: Children learn from each other; C2.5: Multiple ways of learning) **c)** Do you use multi-sensory teaching aids do you use to support diverse learners? If yes, please mention some (C2.6: Using a variety of learning resources)
   d) Do you adapt assessments to encourage the achievements of all students? If yes, how? (C2.7: Assessments encourage achievements for all children)

Section 3: Challenges and Recommendations

1. Challenges in Inclusive Education

   a) Do you face any challenges in implementing inclusive education in your classroom? If yes, please mention some.
   b) Do you address challenges related to student diversity, classroom management, or resource limitations? If yes, please mention some.
   c) Do you think the current curriculum supports inclusive education? (Textbook, TG, infrastructure, T-L, assessment) What are those areas? If not, what improvements would you suggest? **Recommendations for Improvement**
   a) What support or resources would help you in practicing inclusive education more effectively? b) What policy changes or improvements do you suggest for better inclusion?

Section 4: Personal Experiences and Insights

a) Can you share any successful inclusive teaching methods or practices? b) How has your understanding of inclusive education evolved over time?

Additional Comments:

Signature: _____
Date: _____

Annex- C

Key Informant Interview (KII) for Education Officials (TEO & ATEO)

This tool is aligned with the framework and *Index for Inclusion*, focusing on:

- **Dimension B: Producing Inclusive Policies** (B1: Developing the School for All, B2: Organizing Support for Diversity)
- **Dimension A: Creating Inclusive Cultures** (A1: Building Community, A2: Establishing Inclusive Values)

This tool emphasizes the role of education officials in policy implementation, monitoring, and support systems for inclusive education.

Section 1: Understanding of Inclusive Education

(Linked to Dimension A: Creating Inclusive Cultures

1. **Building Community (A1)**
    - What do you understand about inclusive education? What are the factors behind this understanding of inclusive education? (e.g., training, experience, policies, school culture)
    - Which children might be included in inclusive education?
    - Do you ensure that teachers and school staff respect and support one another? If yes, How? (A1.4: Staff and children respect one another)
2. **Establishing Inclusive Values (A2)**
    - Do you ensure that all children are valued equally and have high expectations? Please explain how. (A2.5: Expectations are high for all children; A2.6: Children are valued equally)
    - Do you address and minimize discriminatory stereotypes in schools? If yes, Explain. (A1.7: The school minimizes discriminatory stereotypes)

Section 2: Policy Awareness and Alignment

(Linked to Dimension B: Producing Inclusive Policies)

1. **Developing the School for All (B1)**
    - Do you use to ensure that schools provide safe and supportive environments? (B1.4: Creating safe and supportive environments)
    - Do you communicate national inclusive education policies to schools and teachers? If yes, please mention some policies. (B1.1: Inclusive policies are integrated into school practices)

- Do you support schools in adapting policies to meet diverse needs? If yes, mention how do you do that. (B1.2: The school adapts policies to meet diverse needs)

2. **Organizing Support for Diversity (B2)**
   - How do you collaborate with other professionals to support inclusive education? (B2.2: Collaboration with other professionals)
   - How do you ensure schools build partnerships with parents and the community to support inclusion? (B2.4: Partnerships with parents and communities)

3. **Supporting Special Educational Needs**
   - How do you ensure schools are equipped to support children with special educational needs? (B2.5: Support for children with special educational needs)

Section 3: Policy Implementation and Monitoring

1. **Policy Implementation Strategies**
   - What challenges do you face in ensuring compliance with inclusive education policies?
   - How do you address discrepancies between policy guidelines and practical classroom needs?
2. **Monitoring and Evaluation Mechanisms**
   - What indicators do you use to evaluate the success of inclusive education practices?
   - What challenges do you face in monitoring and evaluating inclusive education practices?
3. **Feedback and Support Systems**
   - What additional support or resources do you believe are necessary for schools to improve inclusive education?

Section 4: Professional Development and Capacity Building

1. **Training and Development**
   - Do you think the existing teacher training programs adequately address inclusive education? Why or why not?

Section 5: Challenges and Recommendations

1. **Challenges in Policy Implementation and Monitoring**
   - What are the major challenges faced by schools in implementing inclusive education policies?
2. **Recommendations for Policy and Practice Improvement**
   - What changes would you recommend in national policies to better support inclusive education?

Annex- D

Key Informant Interview (KII) for PTI/URC (Instructor)

Section 1: Understanding of Inclusive Education

1. How do you define inclusive education in the context of Bangladesh's primary education system?
2. Which children might be included in IE?
3. What are the key components of inclusive education that you emphasize in your training sessions?
4. Do you think there is any difference between inclusive education and special education? If yes, how?
5. Do you have any idea about Universal Design for Learning (UDL)? If yes, what role does Universal Design for Learning (UDL) play in your training sessions?

Section 2: Policy Alignment and Implementation

6. Are there specific guidelines or policies that you follow while training on inclusive education? If yes, what are they? and how effective are they? What challenges do you face?
7. Do you receive sufficient support from the government to implement inclusive education? If yes, what are they?

Section 3: Training Strategies and Method

8. Do you use teaching methodologies/strategies on inclusive education? If yes, what are they?
9. Do you incorporate multiple intelligence theories into your teacher training programs? If yes, how?
10. Do you ensure the use of multi-sensory teaching aids in classrooms? If yes, how?

Section 4: Practical Implementation in Classrooms

11. How do you assess successful implementation of inclusive education strategies in classrooms?
12. Do you receive any feedback from teachers regarding the practical challenges of implementing inclusive education in their school? If yes, what are those?
13. Do you modify lesson plans to accommodate diverse learners? If yes, how?

Section 5: Challenges

14. What are the major challenges you face in implementing inclusive education?
15. What support systems do you think are necessary to implement inclusive education more effectively?

Annex-E

Consent Form

Title of the Study: Exploring Primary Education Practitioners' Understanding of Inclusive Education in Bangladesh

Principal Investigator: Evalin Rafia, Instructor (General), PTI Sonatala, Bogura

Institution: National Academy for Primary Education

Purpose of the Study

You are being invited to participate in a research study that aims to explore the understanding of Primary Education practitioners' regarding Inclusive Education. Your participation will contribute valuable insights that may improve primary educational practices of Bangladesh.

Voluntary Participation

Your participation in this study is completely voluntary. If you choose to withdraw, your data will be excluded from the study upon request.

Confidentiality

All information collected during this study will remain confidential and will be used solely for research purposes. Data will be stored securely and only accessible to the research team. Any published findings will not include information that could identify you.

Compensation

There is no financial compensation for participation.

Contact Information

If you have any questions about the study, you may contact:

Principal Investigator: Evalin Rafia, Instructor (General)

- Phone number: 01715271542 email: rafia.evalin@gmail.com

By signing this form, you confirm that you have read and understood the information provided. You voluntarily agree to participate in this study. You may request a copy of this consent form for your records.

Participant's Name: _____

Participant's Signature: _____

Date: _____

Researcher's Signature: _____

Date: _____

Research Report

Primary Teachers' Attitude Toward the Implementation of Basic Training (BTPT)

Researchers

Md. Mushfiqur Rahman Shohag

Muhammad Rafiqul Islam Talukder

Md. Tauhid Sharif Tarafder

Supervisor

Mahbubur Rahman, Assistant Specialist, NAPE

June 2025

National Academy for Primary Education (NAPE)

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Chapter 1: Introduction

1.1 Background of Study

Early in life, a primary education provides an environment for learning, shaping an individual's personality, and socializing. In essence, primary school teachers represent a significant investment in the nation's view of education being a key to national development in Bangladesh. More than knowledge dissemination, TTs are also key for shaping the values, motivation and learning result of the students in long term. Therefore, the Government of Bangladesh has been working to enhance its primary education system by investing in the teacher education. One such programme is Basic Training for Primary Teachers (BTPT).

The current Basic Training for Primary Teachers (BTPT) commenced as a pilot program in July 2023, replacing the previous 12 monthly DPEd (Diploma in Primary Education). The program is an example of the ways in which teacher education providers are seeking new ways to be responsive to the professional standards and knowledge and skill requirements of the Australian Professional Standards for Primary School Assistant Teachers through the development of a model of professional experiences which involve prospective Teacher Aides in the Australia classroom of the 21st century. The BTPT model consists of three phases a four-month pedagogical training programme at primary Teacher Training Institutes (PTIs), a two-month practicum at local training schools and four months of practical classes at schools in the learners' respective upazila.

The BTPT pilot was fully implemented in December 2023, with a first batch of trainees were taken in under the same architecture during 2024, followed by the second batch. To evaluate this revised training model, the National Academy for Primary Education (NAPE) conducted the "Effectiveness Study of the Revised Diploma in Primary Education (DPEd)" (2024). The study revealed how effective the program was in preparing teachers to meet promotional examination standards. The study also explains how teachers recontextualized the training within their actual teaching situations.

The research investigated the reason that most of the trainees feel motivated to apply the new and active teaching methods through songs, games, storytelling, group work and active learning. But they were also focusing on their professional tasks including lesson designing,

formative assessment of student learning and employing formative assessment tools in their classrooms. It was a step towards more progressive, student-driven pedagogy.

However, the study also revealed enormous obstacles that undermine the work and achievement of the trainees. According to the trainees, the PTI training schedule was hectic with the inconvenient evening classes timed and were taken up in the night when there was load shedding, issues of security. However, there were domestic problems also hindered the training. We placed a lot of our trainees in internships where literally no one was left in the schools to take over, their duties to conduct all the extra classes with no support throughout the internship. Mentorship was also rare and distant- most trainees mentioned only few visits from Upazila mentors during internship.

Another concern was limited access to ICT education. The fact that the courses and practical sessions were not always available. Insufficient number of computers may contribute to leaving the trainees unprepared to use the digital tools without a computer. According to the research there was also a lack of support for inclusive education, especially for conditions related to learning difficulties including ADHD and dyslexia according to the research. Trainees were enthusiastic but lacked the ability or resources to put into practice what they were learning.

Based on this analysis, some structural guidelines were proposed. These proposals involved elements such as the replacement of the twilight internship with an extended period of training school based extending the training of mentors and capacity building; improving ICT infrastructure; and updating materials to ensure that they are relevant, current and reflecting the real needs within the classroom.

With respect to the focus on content-based pedagogy in the BTPT is therefore a significant step towards to the 21st century agenda of quality enhancement in education. But even the study itself presented gigantic impediments that derailed the activity and success of the trainees. As the trainees claimed, PTI training schedule was hectic, including the inconvenient evening classes that were timed and taken during the night when there was shedding of loads and also the security problems and domestic problems, which could have been a setback to the training. Regardless of the program, teacher attitudes and motivation are key; nothing can save a bad program if teachers are feeling disconnected and left hanging.

Thus, to achieve a full BTPT picture in the analysis they must not only introduce the BTPT curriculum, but also the trainees' experiences and attitudes and their feedback. The invitation to reflection in this case is both a measure of the potential the educational system must effect change in the classroom and a supplement to the system of privilege that is the PQP itself.

1.2 Statement of the Problem

Bangladesh has made substantial progress in terms of universal primary education but the dimensions of quality of primary education are still formidable. To enhancing the standard of teaching, The Diploma in Primary Education (DPEd) is under operation from 2012 to 2017 from the previously existing Certificate in Education. DPEd was intended to integrate theory and practice of teaching and was the step towards raising the standard of the teacher training to meet the global level (The Daily Star, 2023).

Not letting that go to waste the government is using the BAT homology as the basis of its plan to both propagate and reform teacher education, the BTPT. But there are conflicting reports from the field. Some teachers have found their training to be timely and relevant and have appreciated that it focuses on teaching that's both student-centered and practical. Yet some others cast doubts on viability of operation in practice, indicating a discrepancy between what is taught and what is there in reality- over populated unclean classes, dearth teaching and learning material, and infrastructural constraints (Islam, 2016; Karim et al., 2017).

It is not just a logistical problem; it is an attitudinal one. There were worse crimes and evils - in fact, probably going on right now, the breaking down around the edges of self-conscious power - but still, your preps had to realize, by now, that the revolution was just a cute game played till ninth grade, that poor people would always have their ugly hand out, no matter how much you slapped them with it. It is in these moments that the mood does not belong to hope, but to despair, when submissive response is submissive response itself.

Since the BTPT is at the third statement and the first two have already gone through training and practice (as a complete cycle of practices is done), it appears an excellent time to know what effect these initial experiences are having on teachers in their attitudes. Does such training make the teachers more informed, or defeated? How well can the teachers use the BTPT in their realistic teaching or are they regressing to old style?

These are the questions that this research aims to answer not only to find out how the program is working but also to make some learnings that can be used to shape the program over the years.

But despite the potential of the structure of the BTPT program, what is happening in the field? The field reports on the reaction of the teachers are mixed. Some see its similarity with modern, student-focused pedagogies, but some claim that it is disconnected with the content of training and with what can be accomplished in the classroom where overcrowding, lack of resources, and time are issues. These obstacles and lack of systems support are very practical and frustrating and even demotivating in some cases. To this end, it is worth to study the contents of BTPT and the perceptions of teachers who will implement it.

1.3 Purpose of the Study

The paper aims to explore the perspectives of teachers and their response to Basic Training on Primary Teachers (BTPT) upon the completion of the entire training program. It is attempting to excavate most of their motives, how they feel about their employing what they learn, how open they might be to change, in the presence of institutional and practical impediments. More specifically, the study aims at to:

- Investigate how teachers make use of training materials in their real-life classrooms.
- Assess teachers' readiness to implement BTPT strategies.
- Investigate teachers' extent of reasonableness and capability to change their instruction based on BTPT instructional methods.

After the investigation, it is clear how the current use and misuse of training and support is, and how improvements must be made to the training infrastructure and the services around it.

1.4 Significance of the Study

There are several important reasons for both theoretical and practical reasons that justify the present study.

First, it contributes to the literature on the way professional development ideas become translated from theory to practice. Consistent with Ajzen's (1991) Theory of Planned Behavior, the research indicates that intention and attitude are significant predictors of behavior. Therefore, whether a teacher actually believes in BTPT may be one of the first clues as to whether BTPT proves to be beneficial in the long-term.

Second, the model is grounded in Bandura's (1997) Self-Efficacy Theory, which argues that the most important factor in acting to change behaviors is the individual's belief that he or she can be successful. Following training Staff confidence, which is After the training, teachers' confidence following training may guide changes made to delivery of the program and to post training support.

Third, the current protocol relies on the Self-determining action Theory (Deci & Ryan, 2000) that emphasizes the significance of the intrinsic motivation for maintaining behavior. If the BTPT is not framed to be relevant to the teachers' professional interest or concern, motivation may be an issue and poor success of implementation is anticipated.

Lastly, the study also has implications regarding Fullan's (2007) proposition about educational change, and policy conceptions that argue the importance of systemic readiness, as opposed to as individual readiness, for successful reform. The analysis of teacher attitudes reveals both personal and systemic obstacles to change.

Regarding practice, research findings can be applied as an input to help MoPME, PTIs and policy makers create BTPT, and to make it more t enable, practical and sustainable. Listening to the voices of teachers can help the system to shift away the form of implementation which is authority-driven based on what is being practiced in the classrooms towards a more collaborative form of implementation.

However, this study adopts a combined theoretical framework that draws from Ajzen's Theory of Planned Behavior (1991), Bandura's Self-Efficacy Theory (1997), and Deci & Ryan's Self-Determination Theory (2000). These models are complementary in that they capture different dimensions of teachers' attitudes and behavioral change: intention (Ajzen), confidence (Bandura), and motivation (Deci & Ryan). Together, they provide a robust lens through which to examine how and why teachers engage with, resist, or modify the pedagogical strategies promoted under BTPT. In addition, Fullan's (2007) Change Theory is used to contextualize individual attitudes within broader systemic and organizational factors.

1.5 Research Questions

To meet the objectives outlined above, the study is guided by the following research questions:

1. How do primary teachers perceive the implementation of BTPT in their classroom practice?
2. To what degree do teachers feel motivated to use the methods learned during BTPT?
3. In what ways do teachers feel confident about implementing the skills from BTPT in their teaching?
4. Are teachers ready to adapt and make changes in their teaching to successfully implement BTPT?

These questions are designed not just to measure attitudes but to understand the experiences, perceptions, and challenges that shape them. The answers will provide insights into how BTPT is working in practice—and what more needs to be done.

Chapter 2: Review of Related Literature

2.1 Introduction

A well-designed training program can only achieve its full potential if the intended beneficiaries' teachers are motivated, confident, and prepared to apply what they have learned. This chapter reviews relevant literature that provides a deeper understanding of teacher attitudes towards professional training, with a specific focus on Bangladesh's context. It begins by tracing the evolution of teacher training in Bangladesh. then discusses global and local studies on teacher attitudes and finally outlines the theoretical frameworks that support this research.

2.2 Teacher Training Reforms in Bangladesh

Bangladesh has a long history of reform efforts aimed at improving primary education. The country's transition from the Certificate in Education to the Diploma in Primary Education (DPEd) in 2012 was a landmark moment. The DPEd was introduced as an 18-month professional qualification designed to strengthen both the theoretical and practical capabilities of primary teachers (The Daily Star, 2023). While the DPEd program had strengths—such as integrating school-based practice with academic study—it also encountered challenges like inadequate follow-up support and lack of contextual relevance (Islam, 2016).

Basic Training for Primary Teachers (BTPT) was introduced as a more scalable in-service training program. It was designed to improve pedagogical practices across the primary sector. According to the Bangladesh Ministry of Primary and Mass Education (2021), BTPT course emphasizes inclusive education, child-centered pedagogy, formative assessment, and the integration of ICT. However, implementation challenges persist, especially in under-resourced rural schools.

2.3 Understanding Teacher Attitudes

Attitudes in the context of education refer to an individual's beliefs, emotions, and predispositions toward particular ideas or behaviors (Pajares, 1992). In teacher training, attitude influences whether a teacher adopts new methods or resists them. Studies globally and within Bangladesh show that attitude is shaped by multiple factors, including the training

environment, institutional support, personal teaching philosophy, and socio-economic context (Avalos, 2011; Karim et al., 2017).

In a study by Malak, Sharma, and Deppeler (2018), it was found that Bangladeshi teachers often exhibit initial enthusiasm during training but lose momentum when they return to their schools due to overwhelming workload and a lack of systemic support. Teachers reported difficulties in managing

diverse student needs, applying formative assessments, and integrating ICT tools core aspects of BTPT.

In line with this, Kennedy (2016) argues that professional development only leads to instructional change when it addresses real problems teachers face and supports them consistently. Thus, the literature suggests that teacher attitudes are both personal and systemic issue.

2.4 Theoretical Frameworks

The theoretical lens for this study is drawn from established behavioral and educational change theories that help unpack the complex relationship between training and its implementation.

2.4.1 Theory of Planned Behavior (Ajzen, 1991)

Ajzen's model posits that attitudes, subjective norms, and perceived behavioral control influence a person's intention to perform a behavior. In the context of BTPT, if teachers have a positive attitude towards the training and believe they can implement what they have learned, they are more likely to apply the training in their classrooms.

2.4.2 Self-Efficacy Theory (Bandura, 1997)

Bandura's work emphasizes the role of personal belief in one's ability to succeed in specific situations. A teacher who feels confident in using student-centered strategies or managing assessments is more likely to integrate those into their classroom routines. Self-efficacy, therefore, becomes a crucial predictor of successful BTPT implementation.

2.4.3 Self-Determination Theory (Deci & Ryan, 2000)

This theory highlights the importance of intrinsic motivation when individuals engage in an activity because it aligns with their values or interests. For teachers, intrinsic motivation is nurtured when training content is relevant, respectful of their context, and offers autonomy in decision-making.

2.4.4 Change Theory (Fullan, 2007)

Fullan stresses that educational change is a process, not an event. Change takes time and is affected by the interaction between the individual (teacher), the innovation (BTPT), and the system (school, administration). If school culture does not support the change or if teachers are isolated in implementation efforts, change is unlikely to succeed.

These frameworks are not viewed in isolation; rather, they are integrated to inform both the research design and analysis. For instance, survey items related to teacher confidence derive from Bandura's concept of self-efficacy, while interview protocols explore intrinsic motivation and perceived control, following Deci & Ryan and Ajzen respectively. Fullan's change theory provides a macro-level lens to interpret findings in the context of systemic enablers and barriers to teacher adaptation.

2.5 Global Perspectives on Training and Attitude

Internationally, research aligns with the understanding that training impact is mediated by teacher beliefs and school support systems. In a large meta-analysis, Hattie (2009) found that teacher quality is the single most influential factor in student achievement. Yet, professional development often fails to create lasting change unless it is sustained, context-specific, and includes follow-up.

Tondeur et al. (2017) examined the link between pedagogical beliefs and technology integration, finding that even when teachers receive ICT training, their beliefs about teaching must align with new methods for adoption to occur. Similarly, Zembylas & Chubbuck (2018) observed that emotional responses such as frustration or hope shape how teachers approach reforms.

2.6 Local Studies and Gap in Research

A couple of studies in Bangladesh have investigated the effects of teacher professional development programs e.g., The English in Action (EIA) and DPEd, but relatively little empirical evidence exists for BTPT. Karim, Rahman, and Begum (2017) illustrated the disparity between design for training and application in the classroom but did not go into detail on teacher perception.

Secondly, most of the previous research has concentrated on results for students or attendance rather than on teachers' own experiences and perspectives. This leaves a 'black box' of why implementation works or doesn't.

The current study addresses this gap by an explicit concentration on the teachers who have experienced the BTPT, considering not only what th teachers do consciously think and believe during the process but also under what conditions this might happen.

2.7 Conclusion

The literature is very clear that training programs are necessary but not sufficient in shaping teachers, that teachers' perception and reaction to training programs matter a great deal. Attitude is determined by personal belief, motivation, organizational context and institutional support. Several international and local studies suggest that such factors should be taken into account in the evaluation of a program like BTPT.

The proposed theoretical models above offer a strong basis for analyzing how teacher aspirations emerge and shape behavior. However, in the case of BTPT, there is scant empirical evidence, particularly in the realities of the post-training classrooms of Bangladesh. This study will help fill that gap by providing evidence that does not only assess BTPT's practice but also contributes to the design of future policies in which teacher training becomes more responsive, inclusive and effective.

Chapter 3: Research Methodology

3.1 Introduction

This chapter describes an overview of the method used to explore primary school teachers' attitudes in relation to the implementation of Basic Training for Primary Teacher (BTPT) programme in Bangladesh. The research aims to understand how teachers' perceptions, confidence, motivation and readiness interact with each other to adapt to change. To achieve this objective, a mixed-method strategy has been used to benefit from the robustness of quantitative data and the richness and subtlety of qualitative information.

3.2 Research Design

The research methodology is convergent parallel mixed methods research design in which although the quantitative and qualitative data are collected simultaneously, they are analyzed independently and then compared. It is a quantitative study, mostly, and relies on structured questionnaires to be distributed to an inferential sample of BTPT-trained teachers. To achieve a better in-depth knowledge, it also involves qualitative elements in the form of a focus group discussion (FGDs) and classroom observations.

Such an approach enables the researcher to build overarching themes (based on the quantitative data) and then dig deeper into the themes (based on the qualitative data). This kind of triangulation is meant to add to the reliability and validity of the results even further (Creswell and Plano Clark, 2018).

3.3 Research Area and Population

The study spans in all of the 15 districts which had the piloting phase and the very next batch. The study has also focused on other context-specific tracts, urban and rural as they exist. Those targeted for the study are primary school teachers who have undergone the full course of BTPT in either the 1st or 2nd cohorts, to allow enough time for at least a trial test of practicing what one has learnt.

These teachers represent a variety of backgrounds in terms of experience, school location, gender, and educational qualifications. In addition, 08 FGDs (2 per District) and 16 Classroom Observations (2 per District) were conducted for triangulation of the data.

3.4 Sampling Procedure

A multistage sampling technique was used to select subjects in this study. The source population was primary school teachers in fifteen districts who had completed the two batches of the Basic Training Program for Teachers (BTPT). For practical reasons (time, financial, travel, access to reliable data) and because of convenience, four districts were included. This is consistent with methodological advisement that convenience sampling is appropriate when logistical obstacles preclude randomization and when participants or sites are indeed at hand (Patton, 2015; Babbie, 2020; Creswell & Creswell, 2018; Etikan et al., 2016). While our sampling strategy limited the generalizability of the results, the districts were purposefully selected to represent the diversity in urban-rural, socio-economic, and school characteristics to maximize heterogeneity in the sample.

Stratified sampling was used to increase representativeness and minimize bias among the four districts. Around 108 teachers were selected from each district such that an equal number of teachers were represented across BTPT batches (i.e., BTPT batch-1and BTPT batch-2) and gender (27 male and 27 female teachers per batch). Moreover, urban (Sadar and its peripheries) and rural schools were also equally participated since geographical location may also affect the experience and perspective of teachers. This stratification enhances the internal validity of the research and also offsets the potential for sampling bias that might be associated with the utilization of convenience sampling (Teddlie & Yu, 2007; Fraenkel et al., 2019). In general, our sampling methodology afforded a pragmatic but methodologically rigorous approach that was appropriate for the aims and practical limitations of the study. The overall procedure is discussed herewith in the next pat:

Step 1: Sample Size Calculation

The sample size was calculated using the standard formula for estimating a proportion with unknown prevalence:

$$n = (Z^2 \cdot p\,(1 - p)) / e^2$$

Where:

Z = 1.96 (corresponding to a 95% confidence level)

p = 0.5 (assumed prevalence for maximum variability)

e = 0.05 (margin of error)

Substituting the values:

$n = (1.96)^2 \cdot 0.5 \cdot (1 - 0.5) / (0.05)^2$

$n = (3.8416 \cdot 0.25) / 0.0025$

$n = 384.16$

Thus, the minimum required sample size is approximately 384 participants.

Step 2: Adjust for non-response

Anticipating a 10% non-response rate, the adjusted sample size was calculated as follows:

$$n_{\text{adjusted}} = 384 + (0.10 \times 384) = 384 + 38.4 = 422.4 \approx 432 \text{ teachers}$$

Step 3: District and Participant Selection

- 4 districts were selected out of 15 to ensure diversity of the following next three criteria.
- 108 teachers were selected from each district
- Equal representation of the 1st and 2nd BTPT batches was maintained.
- Equal number of respondents were assured from Urban (Sadar and surrounding) and Rural areas were assured from the respondents.
- Gender balance was ensured (approximately 50% male, 50% female teachers).

This approach ensures the study is both statistically rigorous and operationally feasible. For better understanding the sampling procedure is presented in the following chart:

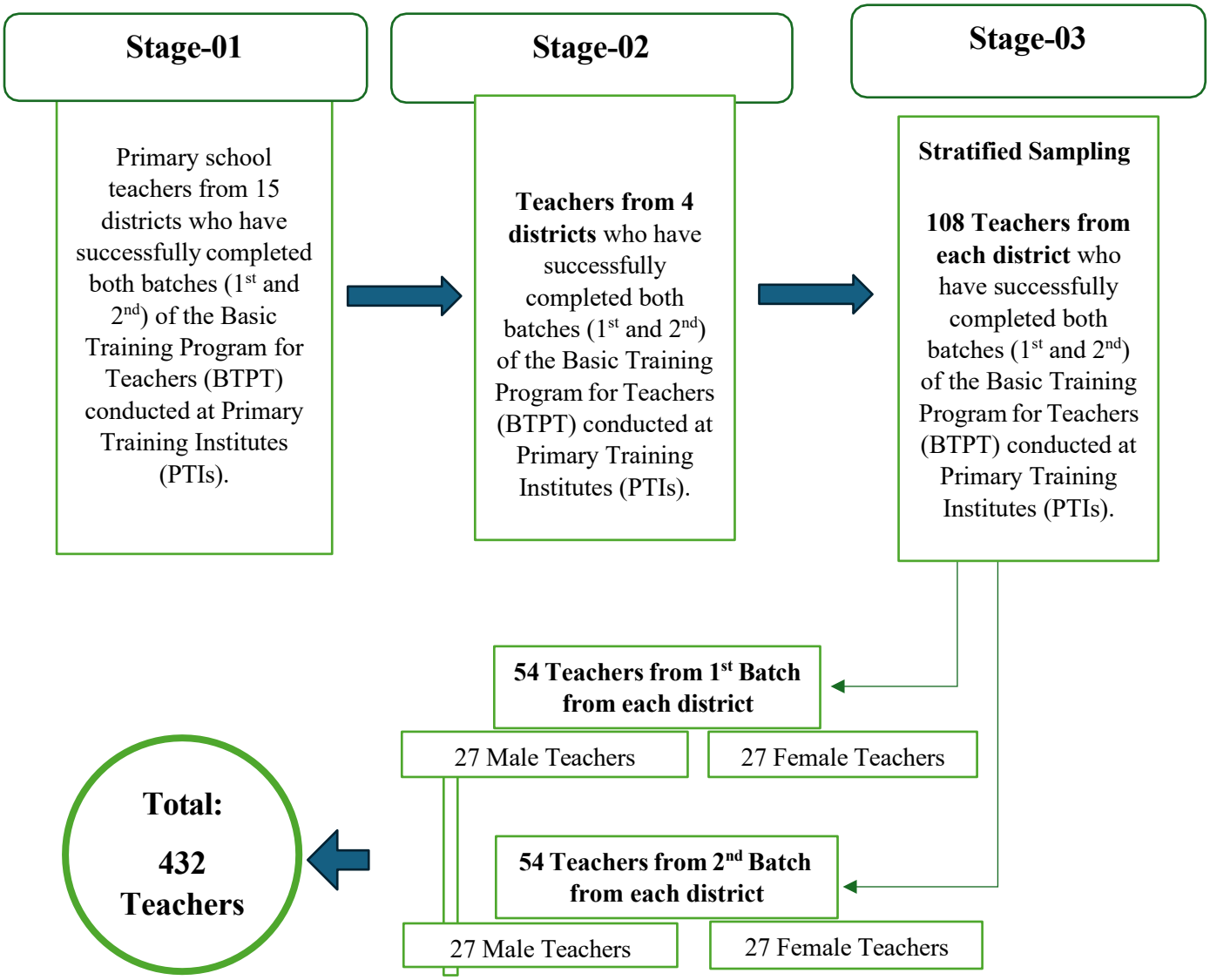


Figure-01: Sampling framework

3.5 Data Collection Tools

The research will employ three primary data collection instruments:

1. Structured Questionnaire

Designed with Likert-scale items measuring:

- Perceptions of BTPT relevance and usefulness
- Motivation to apply for training
- Confidence in implementation

- Readiness to adapt teaching styles

This tool was partially adopted from *tool used by Osman, D. J. (2020)*

The questionnaire was pre-tested prior to the main data collection to assess its reliability and clarity. Internal consistency reliability was evaluated using Cronbach's alpha coefficient. The analysis yielded an overall Cronbach's alpha (α) value of 0.82, indicating a high level of internal consistency among the questionnaire items. According to the reliability standards proposed by George and Mallery (2003; 2019), Cronbach's alpha value greater than 0.80 reflects good reliability. These results suggest that the instrument was reliable and appropriate for use in the main study, with items that consistently measured the intended constructs.

2. Classroom Observation Checklist

Used to assess:

- Application of BTPT strategies
- Student engagement
- Teaching aids and methods used
- Classroom environment

A total of 16 observations (4 per district) were conducted.

3. Focus Group Discussion (FGD) Guidelines

A total of 16 FGDs were conducted to get explanations of the findings from quantitative data. However, each district had 2 different FGDs with different participants as follows:

- One FGD with 6–8 Teachers of BTPT
- One FGD with mix group of PTI instructors and upzilla Monitoring officers (URC instructors and TEOs) and Head Teachers

These discussions will provide context-rich insights into institutional and systemic support or barriers to implementation.

3.6 Data Collection Procedure

Data was collected over a three-month period using a mix of online and in-person formats, depending on the accessibility and preferences of participants. The timeline is as follows:

- December 2024-January 2025: Data collection phase
    - Questionnaires: Distributed and collected digitally and physically
    - Observations: Conducted on-site
    - FGDs: Conducted in central locations All participants were informed of the study's purpose and will sign informed consent forms to ensure ethical compliance.

3.7 Data Analysis Methods

Quantitative Analysis

The survey data was analyzed using:

- **Descriptive statistics**: Mean scores, frequencies, and standard deviations
- Independent Sample t-test, One way ANOVA, Chi-square
- **Correlation analysis**: Exploring relationships between variables (e.g., motivation and implementation)

Software: SPSS version 27 was used for statistical analysis.

Qualitative Analysis

FGD transcripts and observation notes were analyzed using thematic analysis (Braun & Clarke, 2006). This involves:

- Familiarization with data
- Generating initial codes
- Identifying patterns and themes
- Reviewing and refining themes
- Interpreting findings in relation to research questions

Qualitative data was used to triangulate quantitative findings and deepen understanding of challenges and enablers.

3.8 Ethical Considerations

The study was conducted in accordance with established ethical guidelines to safeguard the rights, dignity, and well-being of all participants. Prior to data collection, informed consent was obtained, and participants were adequately briefed about the purpose and procedures of the study, with participation being entirely voluntary. Confidentiality was strictly maintained by anonymizing all collected data and storing it securely to prevent unauthorized access. The non-harm principle was upheld by ensuring that participants were not exposed to any physical, psychological, or reputational risks as a result of their involvement in the study. Furthermore, participants were informed of their right to withdraw from the study at any stage without any penalty. Ethical approval for the study was obtained from the relevant institutional authorities before the commencement of fieldwork.

3.9 Limitations of Methodology

Though stringent sampling and analytical procedures were employed, the study is subject to several limitations. Classroom observations were constrained by time and financial resources, which may have limited the depth and frequency of observational data. Additionally, the use of self-reported data introduces the possibility of social desirability bias, as participants may have provided responses they perceived to be more acceptable. Furthermore, the generalizability of the findings may be modestly limited due to the limited representation of very remote or resource-constrained settings. Nevertheless, the mixed-methods design of the study helps to mitigate these limitations by integrating quantitative and qualitative data, thereby providing both breadth and depth of understanding and enhancing the overall robustness of the findings.

This chapter outlines the methodology employed to investigate BTPT. The use of a mixed-methods approach enables the examination of quantitative trends alongside in-depth insights into participants' experiences. Through the integration of surveys, classroom observations, and focus group discussions across a representative sample, the study seeks to generate evidence to inform decision-making related to training design, policy formulation, and implementation. The findings are intended to support improvements in training practices within the targeted training areas.

Chapter 04: Data Analysis and Interpretation

This chapter provides quantitative and qualitative information to analyze systematically; data collected from 432 BTPT-trained primary teachers from four PTIs in. The analysis is informed by data from a teacher survey, FGDs and classroom observations to triangulate teacher perceptions, resource availability and pragmatic challenges in the implementation of the BTPT initiative. In addition, by fusing the multiple sources and methods of data collection together, confidence in the findings drawn are reinforced and a rich analysis of trends and experiences undergone is developed.

4.1 Demographic Profile of the Respondents

Demography of the 432 respondents are presented in Table 1. It was found that most of the respondents (83.1%) were younger than 25 years, followed by 16.0% of them who were aged between 25 and 35 years and very few (0.9%) between 36-45 years.

The gender distribution was perfectly balanced, with an equal number of male and female participants (216 each, 50.0%).

In terms of educational background, a significant majority of the respondents held a Master's degree (83.3%), while 13.2% had completed a Bachelor's degree and only 3.5% had education up to the HSC level. Respondents were evenly distributed between two training batches at PTI: 50.0% from the 1st Batch (July 2023–April 2024) and 50.0% from the 2nd Batch (January 2024–October 2024).

The respondents were also evenly represented across four different PTIs where they completed their BTPT training, with 25.0% each from Chattogram, Joydebpur, Rajshahi, and Sylhet PTIs. Finally, the school location distribution was also balanced, with exactly half of the respondents (50.0%) working in rural schools and the other half in urban settings.

This balanced distribution across gender, training batches, PTI locations, and school types adds to the representativeness of the dataset and ensures diverse input in the evaluation of the BTPT training experience.

Table 1: Demographic Profile of the Respondents (N = 432)

Variable	Category	N	%
Age of the Respondents	Below 25 years	359	83.1%
	25–35 years	69	16.0%

Variable	Category	N	%
	36–45 years	4	0.9%
Gender	Male	216	50.0%
	Female	216	50.0%
Educational Level of the Respondents	HSC	15	3.5%
	Bachelor's Degree	57	13.2%
	Master's Degree	360	83.3%
Batch that Respondents Had in PTI	1st Batch (July 2023–April 2024)	216	50.0%
	2nd Batch (January 2024–October 2024)	216	50.0%
PTI Where Respondents Completed BTPT	Chattogram PTI	108	25.0%
	Joydebpur PTI	108	25.0%
	Rajshahi PTI	108	25.0%
	Sylhet PTI	108	25.0%
School Location	Rural	216	50.0%
	Urban	216	50.0%

4.2 School Infrastructure and Resource Availability

Table-02 provides an overview of the infrastructural facilities and learning environment present in the schools where the respondents are employed. In terms of the number of classrooms, almost half (49.3%) of the schools had 4–5 classrooms, while 24.8% had 1–3 classrooms, and 25.9% had more than 5. Regarding class size, the majority (53.7%) reported having fewer than 30 students per class, followed by 37.0% with 30–50 students. Only a small proportion had larger classes, with 6.7% having 51–70 students and 2.5% having more than 70 students.

The number of teachers per school shows that 46.1% had 4–5 teachers, and 34.0% had 6–7, while a small number had either 2–3 teachers (6.3%) or more than 7 (13.7%). Concerning daily teaching workload, a significant 70.6% of respondents reported conducting more than 5 classes per day, while 29.4% took 3–4 classes.

When evaluating resource availability, 51.2% of respondents indicated their schools had sufficient educational materials, while 48.8% disagreed. However, a large majority (81.0%) stated that their schools were equipped with ICT tools such as multimedia projectors, laptops, and sound systems. Likewise, 80.8% confirmed that their classrooms had enough space for displaying educational materials.

Finally, 69.0% of respondents reported that there was adequate space in their classrooms for group work and other interactive activities, while 31.0% said the space was insufficient. Overall, the data suggests that while most schools are relatively well-equipped with ICT tools and moderately sized classrooms, improvements can still be made in areas like teacher-student ratios, space for active learning, and consistent availability of educational materials.

Table 2: School Infrastructure and Resource Availability (N = 432)

Variable	Category	N	%
Number of Classrooms (on average)	1–3	107	24.8%
	4–5	213	49.3%
	More than 5	112	25.9%
Average Number of Students per Class	Less than 30	232	53.7%
	30–50	160	37.0%
	51–70	29	6.7%
	More than 70	11	2.5%
Total Number of Teachers in School	2–3	27	6.3%
	4–5	199	46.1%
	6–7	147	34.0%
	More than 7	59	13.7%
Number of Classes Taken Daily (on average)	3–4	127	29.4%
	More than 5	305	70.6%
Availability of Educational Materials	Yes	221	51.2%
	No	211	48.8%
ICT Facility Availability (Multimedia, Laptop, Sound System)	Yes	350	81.0%
	No	82	19.0%
Sufficient Display Space in Classrooms	Yes	349	80.8%
	No	83	19.2%
Enough Space for Group Work and Activities in Classrooms	Yes	298	69.0%
	No	134	31.0%

4.3 Teachers' Attitude Towards Implementing BTPT

To examine the attitudinal disposition of primary school teachers toward the implementation of the BTPT (Basic Teaching Practices Training) program, both descriptive statistics and categorical frequency analyses were conducted

across five key dimensions: overall attitude, understanding, motivation, confidence, and readiness.

Table-3A. Descriptive Statistics of Attitude Dimensions (N = 432)

Attitude Dimension	Mean	Standard Deviation	Minimum	Maximum
Overall Attitude	4.000	0.851	1.00	5.00
Understanding BTPT Implementation	3.910	0.926	1.00	5.00
Motivation to Implement BTPT Methods	4.002	0.852	1.00	5.00
Confidence in Applying BTPT Skills	4.039	0.896	1.00	5.00
Readiness for Adaptation and Change	3.944	0.879	1.00	5.00

Table-3B. Frequency Distribution by Response Category

Category	Strongly Negative	Negative	Neutral	Positive	Strongly Positive
Overall Attitude	9 (2.1%)	12 (2.8%)	66 (15.3%)	228 (52.8%)	117 (27.1%)
Understanding	11 (2.5%)	25 (5.8%)	65 (15.0%)	222 (51.4%)	109 (25.2%)
Motivation	8 (1.9%)	14 (3.2%)	66 (15.3%)	225 (52.1%)	119 (27.5%)
Confidence	11 (2.5%)	13 (3.0%)	60 (13.9%)	212 (49.1%)	136 (31.5%)
Readiness	10 (2.3%)	17 (3.9%)	68 (15.7%)	229 (53.0%)	108 (25.0%)

Interpretation and Insights

1. General Positivity Toward BTPT

The results demonstrate a strong overall positive orientation toward the BTPT initiative:

- Nearly 80% of respondents expressed either *positive* or *strongly positive* sentiments about the program overall.
- The highest positive ratings were seen in Confidence (80.6%), followed by Motivation (79.6%) and Readiness (78%), indicating that most teachers not only support the initiative but also feel equipped and willing to adopt it.

2. Consistently High Mean Scores

All mean values are close to or exceed 4.0 on a 5-point scale, affirming a generally favorable attitude:

- Confidence in applying BTPT skills recorded the highest average (M = 4.04), suggesting a strong belief among teachers in their practical capability.
- Although Understanding had the lowest meaning (M = 3.91), it still resides firmly in the "positive" range, indicating a decent grasp of the program's purpose and structure though this may be an area for strategic reinforcement.

3. Minimal Resistance Evident

Only a small proportion of participants reported negative or strongly negative attitudes:

- Fewer than 6% of responses fell within these lower categories, underscoring low resistance or skepticism among the teaching cohort.

4. Moderate Variability and Balanced Use of Scale

- ❖ The standard deviations (0.85 -0.93): the range of opinion is good and not too far apart.
- ❖ Full 1-5 set was not made, most of its responses were not made, which justifies the effectiveness of the scale in terms of capturing subtle opinions.

The results are very much indicative of huge teacher acceptance of the BTPT programme. It is also encouraging that the confidence, motivation and readiness levels are high, which means that there is a workforce that realizes the value of the intervention and is willing to take action to apply its practices. Even though the knowledge may be wanting about the premises of BTPT, the overall conclusions show that the program has a strong foundation to follow. Additional pedagogical engagement at a deeper level needs to be considered in future educational intervention to refreeze concepts and be further motivated.

4.4 Teachers' Attitude in Terms of Gender, Training batch, and School location

To explore whether teachers' attitudes toward BTPT implementation vary by demographic factors, independent samples t-tests were conducted based on gender, training batch, and school location. The results are presented in the consolidated table below:

Table-04: Differences in Attitudes Toward BTPT Across Demographic Variables (N = 432)

Attitude Dimension	Gender (p)	Batch (p)	School Location (p)	Significant Difference
Overall Attitude	0.652	0.910	0.113	None
Understanding BTPT Implementation	0.959	0.641	0.324	None
Motivation to Implement Methods	0.284	0.693	0.128	None
Confidence in Applying Skills	0.362	0.957	**0.047***	Urban > Rural
Readiness for Adaptation & Change	0.743	0.512	**0.021***	Urban > Rural

**Significant at p < .05*

Interpretation and Summary

A) Gender-Based Findings

The analysis revealed no statistically significant differences in attitude dimensions between male and female teachers. Overall attitudes toward BTPT, as well as specific dimensions including understanding, motivation, confidence, and readiness, were comparable across genders. All statistical tests produced p-values greater than .28, and the associated effect sizes, as measured by Cohen's d, were negligible ($d < 0.10$). These findings indicate that teachers' attitudes toward BTPT are consistent regardless of gender.

B) Training Batch Comparison

The analysis showed no statistically significant differences in any attitude dimensions toward BTPT between teachers from the first and second training batches. The observed mean differences were minimal (≤ 0.06), and all corresponding p-values exceeded .51, indicating a high degree of consistency across cohorts. These results suggest that the timing of the training batch did not influence teachers' perceptions, attitudes, or readiness toward BTPT.

C) School Location (Rural vs Urban)

While overall attitude, understanding, and motivation showed no significant location-based differences, two subscales did:

- **Confidence in Applying Skills**: Urban teachers reported higher confidence than rural counterparts (*p = .047*).
- **Readiness for Change**: Urban teachers also expressed greater readiness to adapt to practices (*p = .021*).

Though the effect sizes for both are small (d = -0.19 to -0.22), they suggest a developing trend.

Table-04 reveals that Urban teachers show slightly greater practical readiness and confidence for BTPT implementation compared to rural teachers.

The findings suggest that teachers' attitudes toward BTPT implementation are generally uniform across gender and training batch, reflecting broad program acceptance. However, school location emerged as a modest differentiator, with urban teachers exhibiting marginally higher levels of confidence and readiness. These insights may guide targeted support strategies, particularly for rural educators, to ensure equitable training outcomes.

4.5 Teachers' Attitudes by Age, Education, and PTI Institute

To further investigate whether teachers' attitudes toward the BTPT initiative vary based on background characteristics such as age, educational qualification, or PTI location (training institute), a series of One-Way ANOVA tests were performed. The analysis focused on the five core attitude dimensions.

Table-05: One-Way ANOVA Summary – Differences in Attitudes Toward BTPT by Age, Education, and PTI Institute (N = 432)

Factor	Dependent Variable	F-value	p-value	Statistical Interpretation
Age	Overall Attitude	1.560	0.184	Not significant
	Understanding BTPT	1.560	0.184	Not significant
	Motivation to Implement	1.465	0.212	Not significant
	Confidence in Applying Skills	0.413	0.799	Not significant
	Readiness for Adaptation	1.371	0.243	Not significant
Education Level	Overall Attitude	0.615	0.652	Not significant
	Understanding BTPT	0.615	0.652	Not significant

	Motivation to Implement	0.680	0.606	Not significant
	Confidence in Applying Skills	1.042	0.385	Not significant
	Readiness for Adaptation	0.944	0.438	Not significant
PTI Location	Overall Attitude	0.536	0.709	Not significant
	Understanding BTPT	0.536	0.709	Not significant
	Motivation to Implement	1.085	0.363	Not significant
	Confidence in Applying Skills	1.576	0.180	Not significant
	Readiness for Adaptation	0.160	0.959	Not significant

Interpretation and Insights

A. Age-Based Comparisons

The analysis indicated that teachers across different age categories, including younger, middle-aged, and senior groups, did not exhibit statistically significant differences in any of the five measured attitude dimensions toward BTPT. For example, the comparison of overall attitude scores yielded an F value of 1.560 with a corresponding p-value of 0.184, indicating that the observed differences were not statistically significant. Similar non-significant patterns were observed across the remaining attitude dimensions. These findings suggest that teachers' age does not meaningfully influence their perspectives or readiness regarding the implementation of BTPT.

B. Educational Qualification

Similarly, the analysis revealed no statistically significant differences in attitude dimensions toward BTPT based on teachers' educational attainment levels, including HSC, Bachelor's, and Master's degrees. Across all measured dimensions, p-values exceeded 0.38, indicating the absence of meaningful differences between groups. For instance, the comparison of motivation scores produced an F value of 0.680 with a corresponding p-value of 0.606. These findings suggest that higher academic qualifications do not significantly influence teachers' attitudes, perceptions, or readiness regarding BTPT.

C. PTI Institute Attended

No statistically significant variation in teachers' attitudes toward BTPT was observed based on the training institute (PTI) attended. Attitude scores across all measured dimensions were consistent across institutions, with all statistical tests yielding non-significant results. For example, the comparison of readiness for adaptation produced an F value of 0.160 with a corresponding p-value of 0.959, indicating virtually no difference between groups. This consistency suggests a standardized level of training delivery across PTIs and indicates that institutional affiliation does not have a measurable influence on teachers' attitudes or readiness toward BTPT.

The One-Way ANOVA findings reveal no statistically significant differences in teachers' attitudes toward BTPT across age groups, education levels, or training institute locations. This uniformity suggests that demographic or institutional factors do not drive attitude variation. Instead, individual teaching environments, resource accessibility, or school-level culture may play a larger role in shaping how BTPT is received and applied.

4.6 Teachers' Attitudes by Demographics: Chi-Square Test Analysis

To further examine the relationship between teachers' demographic characteristics and their attitudes toward BTPT implementation, Chi-square tests of independence were conducted. This non-parametric analysis aimed to identify whether categorical variables such as age, gender, education, training batch, PTI location, and school setting were associated with differences in teachers' responses across five key dimensions.

Table-06: Chi-Square Test Results – Association Between Demographics and Attitude Dimensions

Demographic Variable	Overall Attitude	Understanding	Motivation	Confidence	Readiness	Linear-by-Linear (Readiness)
Age	0.196	0.540	0.227	0.291	0.235	**0.047***
Gender	0.121	0.590	0.340	0.151	0.524	0.742
Education Level	0.116	0.481	0.378	0.286	0.128	0.106
BTPT Batch	0.616	0.381	0.726	0.914	0.932	0.511

PTI Location	0.095	0.608	0.757	0.271	0.408	0.782
School Location	0.335	0.436	0.474	0.347	**0.051	

(Marginal)** | **(significant)*** |

Interpretation and Insights

A. Key Associations Identified

- **Age and Readiness for Change**:

  Although the primary chi-square test did not yield significance (*p = 0.235*), the linear-by-linear trend was significant (*p = 0.047*), indicating a subtle but meaningful increase in readiness among younger teachers. This suggests generational shifts in openness to pedagogical innovation.

- **School Location and Readiness**:

  The association between urban vs. rural location and readiness to adapt approaches marginal significance (*p = 0.051*) in the chi-square test. More compellingly, the linear trend is significant (*p = 0.021*), reinforcing earlier t-test findings that urban teachers are more inclined to adapt to BTPT frameworks.

B. No Statistically Significant Differences in Other Areas

- Gender, education level, training batch, and PTI institute showed no significant association with any attitude dimension, including overall attitude, understanding, motivation, confidence, and readiness.
- Even in areas like motivation and confidence, all p-values were well above 0.10 across categories, suggesting a high level of attitudinal consistency regardless of background.

C. Overall Attitude Remains Demographically Neutral

No demographic variable was significantly associated with overall attitude, indicating uniform support for BTPT across all respondent subgroups.

The chi-square analysis further underscores the demographic neutrality of attitudes toward BTPT, a sign of the program's broad acceptability and inclusiveness. Nonetheless, the data reveal nuanced trends in readiness for change, with younger and urban teachers more likely to embrace new teaching practices. These patterns, though subtle, offer valuable direction for targeted support and capacity-building, particularly among rural or older teacher cohorts.

4.7 Association Between Attitudes and School/Classroom-Level Factors

To assess whether school infrastructure and classroom characteristics are associated with teachers' attitudes toward BTPT implementation, a correlational analysis was conducted. Pearson correlation coefficients were calculated between each of the five attitude dimensions and key environmental factors within schools.

Table-07: Correlation Coefficients Between Attitude Dimensions and School/Classroom Factors (N = 432)

School/Classroom Factor	Overall Attitude	Understanding of BTPT	Motivation to Implement	Confidence in Applying Skills	Readiness for Adaptation
Avg. Number of Classrooms	-0.041	-0.024	-0.032	-0.050	-0.025
Avg. Number of Students per Class	-0.067	-0.063	-0.041	-0.051	-0.062
Total Number of Teachers	-0.052	-0.063	-0.035	-0.045	-0.067
Avg. Classes Taken Daily	-0.009	-0.029	-0.046	-0.044	-0.017
Sufficient Educational Materials	-0.089	**-0.112***	-0.076	-0.056	-0.050
ICT Facilities (Laptop, Multimedia, etc.)	-0.051	-0.059	-0.039	-0.083	-0.031
Display Space for Teaching Aids	-0.020	-0.083	-0.003	-0.032	0.021
Space for Group Activities	-0.070	**-0.112***	-0.065	-0.072	-0.071

*Significant at $p < .05$

Interpretation of Findings

A. Overall Pattern of Weak Correlations

Across all dimensions, the associations between classroom infrastructure and teacher attitudes are uniformly weak, with most correlation coefficients falling between –0.01 and –0.11. This suggests that structural conditions—such as class size, daily workload, or teacher count—do not meaningfully influence teacher perceptions of or readiness for BTPT.

B. Statistically Significant but Trivial Associations

- Understanding of BTPT showed weak yet statistically significant negative correlations with:
    - Availability of educational materials ($r = –0.112, p < .05$)

- Availability of space for group work ($r = –0.112, p < .05$)

While these correlations are statistically notable, their practical relevance is minimal. Interestingly, teachers reporting less adequate infrastructure were slightly more likely to show a higher understanding of BTPT—possibly because they compensate through personal initiative or deeper cognitive engagement.

C. ICT and Display Facilities Are Not Influential

The presence of ICT resources or visual display space showed no significant association with any attitudinal variable. This indicates that infrastructure alone—without strategic integration into pedagogy—does not shape teacher sentiment or confidence toward BTPT.

D. No Effect of Classroom Workload or Size

Variables like number of students in a particular class, average number of classes taught, and number of teachers were not identified as factors associated to attitude. This finding also contributes further evidence that workload and logistics are less pivotal factors in determining the perceptions of the training by teachers.

These are also similar and the same in the bivariate results that indicate that physical and numerical indicators of school context do not play an insignificant role in the attitudes of BTPT teachers. Where we did find statistically significant effects, they were tiny, suggesting that attitudes must be affected more powerfully by discrete constructions, which are less infrastructure-oriented (e.g. training quality, peer culture, leadership practices, pedagogical clarity).

This finding suggests that effort to promote capacity building and participation should aim not only to improve the physical but improve professional support, teachers' motivation and pedagogic self-confidence.

4.8 Qualitative Insights from Focus Group Discussions (FGDs)

FGDs offer complex and rich data which build upon and expand on the survey data, and they demonstrate a high degree of convergence of positive teacher attitudes regarding BTPT with some of the challenges of real-world implementation. Although most participants favored the BTPT structure, prominent structural and practical barriers were identified.

1. Workload and Time Constraints

Despite quantitative results showing no significant correlation between teaching load and attitude scores, FGD participants repeatedly highlighted insufficient time to plan and reflect on BTPT-aligned lessons. The mismatch between training ideals and institutional scheduling was widely acknowledged:

"We learned a lot in the training, but the problem is time. We rush from class to class—there's hardly time to prepare properly or reflect on how to apply the methods."

This highlights a potential disconnect between systemic workload and teachers' ability to apply pedagogical innovations, suggesting that attitudinal positivity alone is insufficient without supportive time allocation.

2. ICT Competence and Accessibility Barriers

Although survey correlations showed **no significant association** between ICT availability and BTPT attitudes, FGDs illuminated deeper practical and psychological barriers:

- **Limited ICT Practice in Training**: Many teachers reported minimal hands-on ICT sessions during the BTPT, contributing to low post-training confidence.
- **Access and Maintenance Issues in Schools**: Even when schools had ICT equipment, usage was hampered by technical malfunctions or restricted access.
- **Low Digital Confidence**: A substantial number of participants described hesitancy in using ICT due to unfamiliarity or lack of technical support.

"Sometimes the laptop is locked away or problematic to use. Even when it works, we don't have sound systems or a screen to properly run multimedia."

These insights underscore the importance of not just providing technology but also ensuring usability, access, and support.

Transformational Shifts with Caveats

Many respondents described BTPT as a paradigm shift in teaching mindset moving from passive instruction to student-centered learning. However, they also called for practical reforms to translate this mindset into daily classroom practice:

- Reduce teaching loads or provide dedicated planning periods
- Enhance hands-on ICT training modules
- Equip schools with at least one reliable multimedia room
- Offer basic troubleshooting support for ICT tools

"BTPT changed how I see my classroom—but we need time, tools, and support to make it truly happen."

4.9 Insights from Classroom Observations: Gaps Between Attitude and Practice

To triangulate findings, structured classroom observations were conducted in a sample of schools. These offered direct evidence of how BTPT strategies were being implemented and where gaps persist between teacher intention and classroom execution.

1. Pedagogical Implementation Gaps

Teachers consistently attempted to integrate BTPT methods (e.g., group discussions, questioning strategies), yet struggled with contextual alignment:

- **Relevance to Content and Level**: Instructional activities often lacked alignment with curriculum demands or student preparedness.
- **Time Mismanagement**: Lessons were frequently imbalanced, with excessive time spent on introductions and insufficient time for activity or closure.

"Teachers have the intention and enthusiasm, but time slips away—some spend too long explaining instructions without moving into active learning," noted one observer.

These findings resonate with FGD concerns about overburdened schedules and insufficient planning time.

2. Classroom Resources and Material Use

Despite BTPT's emphasis on instructional materials, several shortfalls were observed:

- **Visual Aids**: Often too small or poorly designed to be effective especially in large classrooms.
- **Multimedia Absence**: No multimedia use was observed, despite BTPT's ICT focus, aligning with both FGD responses and weak survey correlations on ICT confidence.

3. Challenges in Managing Large Classes

In larger classrooms, effective grouping and engagement strategies were frequently lacking:

- Students were often passive during group work due to ineffective space use or unclear instructions.
- This difficulty aligns with the observed negative (though weak) correlations between group-work space and attitudes such as motivation and readiness (e.g., $r = -0.071$).

Table-08: Synthesis with Quantitative Findings

Theme	Observation Insight	Supporting Quantitative Evidence
Pedagogical misalignment	Teachers struggle to contextualize BTPT strategies	Weak/no correlation between infrastructure and attitudes
Time management	Poor allocation of class time phases	FGDs highlight workload issues; no correlation with class load
Inadequate materials	Visual aids poorly designed; no multimedia used	ICT availability shows weak negative correlation with confidence
Classroom management	Difficulty engaging large groups effectively	Space for group work negatively correlates with readiness ($r = -.071$)

Conclusion and Implications

The qualitative data from FGDs and classroom observations—substantiate the positive attitudinal shift documented in the quantitative analysis. However, they also reveal clear implementation barriers, including:

- Lack of time for effective planning and reflection
- Poor or non-functional teaching materials
- Insufficient ICT training and access
- Difficulty managing large classes without physical or pedagogical scaffolds

Recommended Interventions:

To bridge these implementation gaps and enhance the fidelity of BTPT adoption:

- Embed on-site pedagogical coaching to contextualize strategies effectively
- Revise BTPT modules to include practical training in instructional design and ICT integration
- Provide and maintain multimedia classrooms with basic functional tools
- Train teachers in large-group facilitation, space management, and active engagement techniques

These supports will empower teachers to translate positive attitudes into consistent and high-impact instructional practices, making BTPT's goals more achievable at the ground level.

4.10. Overall Recommendations for Future Improvement

Drawing upon survey data, FGDs, and classroom observations, several actionable insights emerge to strengthen the implementation and sustainability of the BTPT (Blended Teaching and Pedagogical Transformation) initiative. While the training has had a transformative impact on teacher attitudes and foundational pedagogical shifts, multiple systemic and contextual barriers continue to affect practice fidelity.

4.10.1 Most Valued Aspects of BTPT Training

Teachers identified the most effective components of BTPT as those that were practical, participatory, and confidence-building. The top responses reflect a strong preference for training they could immediately apply in real classrooms.

Table-09: Most Valued Aspects of BTPT Training (N = 432)

BTPT Component	% Teachers
Hands-on, practical training	**65.3%**
"Learning by doing" (peer practice, microteaching)	**50.9%**
Boosted confidence and self-efficacy	**45.4%**
Coaching on student learning strategies	**29.4%**
Use of classroom materials/resources	**26.6%**

The data shown above teachers valued BTPT's hands-on and experiential elements most. While confidence and skills improved, consistent classroom application remains challenged by time, materials, and school-level support a theme echoed in FGDs and observations.

4.10.2 Major Challenges to BTPT Implementation

While BTPT has been positively received, its effective classroom execution is frequently hindered by practical, institutional, and infrastructural constraints. These challenges, consistently identified across survey data, FGDs, and

observations, reveal key pressure points that limit the full realization of the training's potential.

Table-10: Reported Challenges to BTPT Implementation (Base: N = 432) [Multiple response]

Challenge	% Teachers
Lack of time due to high teaching load	**53.0%**
Inadequate administrative/leadership support	**45.8%**
Gaps in ICT training and post-training access	**31.5%**
Insufficient teaching aids	**28.0%**
Low awareness among stakeholders	**22.9%**

Data showed that more than half of the teachers cited time constraints as the top challenge, largely due to demanding class schedules. Close behind, limited support from school leadership hampers motivation and implementation. Additionally, nearly one-third of teachers reported ICT-related challenges, including inadequate training and poor access to equipment. These

concerns were echoed in FGDs and observations, underscoring the need for systemic adjustments and resource investment to support BTPT integration.

The findings support some of the FGD discussions. As example Teachers from Rajshahi district revealed a similar response from the key findings. One of the respondents said:

"We want to take a joyful class, but with the overloading class schedule make us to take many classes without preparation. Lack of ICT support and resources also make our life difficult. It is very difficult to make materials manually for every class. If we get proper ICT equipment along with some contents it would be better for us to take at least one or two interactive class daily."

4.10.3 Reported Impact of BTPT on Practice

Teachers widely acknowledged the positive influence of BTPT on their classroom practices. However, many also highlighted the need for continued development to fully translate training into long-term instructional change.

Table-11: Reported Change in Teaching After BTPT (N = 432)

Reported Change	% Teachers
Significant improvement in teaching methods	**45.5%**
Some improvement, but more development needed	**50.7%**
Very little or no change	**3.7%**

Observations revealed a similar way that most of the teachers know how to deal with classes theoretically but in real practice it was not seen. Probably the very small school practice sessions in PTIs might be the reason of it. As one response from mix group from PTI instructors and Field monitors revealed the similar way that-

"Trainee teachers got less time of school practice in PTIs. During Internship sessions. So, it might be a lagging area while they went to their own situation. They have shortage of real experience. We informed them the theoretical part but for short schedule they had lack of time to practice the real scenario."

Data shows that an encouraging 96.2% of teachers reported positive change, with many noting increased engagement and improved techniques. However, the majority also acknowledged that ongoing training and structured support are essential to reinforce new skills, bridge classroom challenges, and sustain BTPT's long-term impact.

4.10.4 School-Level Support Needs

For BTPT implementation to succeed, teachers emphasized the critical role of school-based support structures. The responses below highlight the key areas where institutional backing is most needed.

Table-12: School-Level Support Actions Identified by Teachers (Base: N = 432) [Multiple Response]

Supportive Action	% Teachers
Provide materials and classroom resources	**61.8%**
Facilitate peer learning and collaboration	**48.9%**
Establish regular monitoring and feedback systems	**43.9%**
Offer administrative support and leadership involvement	**40.5%**
Organize refresher or follow-up training workshops	**27.4%**

From the above data it is found that Teachers clearly call for a supportive school ecosystem centered on adequate resources, collaborative culture, and engaged leadership. Institutional actions like structured peer sharing, regular feedback, and ongoing training are essential to ensure BTPT principles move beyond training sessions and become embedded in everyday classroom practice.

4.10.5 Future Training Priorities Identified by Teachers

Teachers articulated specific areas where further training is needed to strengthen their instructional capacity and sustain BTPT implementation.

Table-13: Teacher-Identified Training Needs (Base: N = 432) [Multiple Response]

Desired Training Area	% Teachers
Student assessment and feedback	**65.6%**
ICT integration for effective teaching	**63.7%**

Modern instructional methods	**62.4%**
Inclusive education strategies	**36.2%**
Classroom management and teacher leadership	**34.3%**

Data from the table shows that teachers have expressed clear professional development goals, particularly around evaluation techniques, digital teaching skills, and inclusive practices. Tailoring future modules to meet these identified needs can ensure high engagement and impact.

4.11 Strategic Recommendations

Based on the integrated findings from surveys, FGDs, and classroom observations, the following strategic actions are recommended to strengthen and sustain the impact of BTPT:

1. Time Allocation and Scheduling Reform

To ensure teachers have the capacity to implement BTPT strategies effectively:

- Introduce protected planning periods within the weekly timetable for lesson design, reflection, and material preparation.
- Reduce excessive teaching loads, particularly in larger schools, to free up time for applying participatory and student-centered methods.

2. Enhance ICT Practice and Access

Teachers need more than exposure they need practical confidence with digital tools:

- Embed hands-on ICT sessions in future BTPT modules, ensuring that teachers practice using multimedia tools in realistic scenarios.
- Equip every school with a dedicated, functional multimedia classroom, including basic devices (projectors, laptops) and backup options.
- Teach teachers basic ICT trouble shooting so that technical difficulties do not stand in the way of classroom integration.

3. Strengthen Leadership and Monitoring

Strengthening leadership engagement can play a key role in:

- Empower headteachers to support BTPT application through flexible scheduling, planning support, and observation routines.

- Establish ongoing monitoring systems that provide constructive feedback rather than one-time evaluations.
- Encourage school leaders to create a culture of instructional collaboration, not just compliance.

4. Provide Practical Teaching Resources

Effective training implementation requires classroom materials in contextual setup to:

- Ensure adequate supply of teaching aids, such as charts, models, and manipulatives, especially for large and under-resourced classrooms.
- Emphasize quality and usability of resources materials should be visible, durable, and aligned with BTPT methods.
- Provide orientation on how to use these resources effectively within different lesson structures.

5. Develop Follow-Up Training and Mentorship

BTPT training needs support with follow-up activities to make it more effective. However, these activities reveal the following facts:

- Organize refresher workshops focused on areas like student assessment, inclusive education, and classroom leadership.
- Establish peer learning communities (e.g., cluster-based or upazila-level groups) where teachers can share experiences and mentor one another.
- Include mentorship programs that pair new teachers with experienced BTPT practitioners for sustained guidance.

The BTPT has demonstrated effectiveness in provoking changes in teacher attitudes and pedagogy. Its promise will only ever be realized through systemic support – from timetabling and broadband connectivity, to resource provision and school leadership support. Through institutionalization of BTPT embedded within the daily context of schools, BTPT could transition from a stand-alone package for training to a sustainable educational venture involving transforming teaching and learning across primary grades.

Chapter 5: Discussion and Recommendations

5.1 Introduction

In this chapter the outcomes of the research with regard to implementation of the BTPT program in elementary schools are being discussed in full. Building on the firm ground of its mixed-method methodology (full words, not their abbreviation, that is 'quantitative questionnaires and qualitative FGDs, followed by classroom observation) the article explores teachers' belief, practice, institutional backing as well as the benefit of training. The findings are interpreted in a broader perspective of teacher-professional growth and as schooling policies and are discussed either to serve as local in situ assets or to be transferred to macro levels, if appropriate.

The chapter further puts forth strategic advice on how to make BTPT implementation viable and sustainable. All these tenets are informed by the experiences in the field and radical appeals to power by teachers, substantiated by analytical evidence and anchored in the quality of educational research.

5.2 Discussion of Findings

5.2.1 Positive Teacher Attitudes Towards BTPT

One of the keener observations of the research could be, perhaps, the wide acceptance of the BTPT by the teachers. The mean scores of all five attitudinal dimensions (total attitude, understanding, motivation, confidence and readiness) were above 4.0 which is on a 5-point scale. 79.2% of them said that their general attitude were positive or strong positive.

This can be readily compared to the other [studies] (e.g., Guskey, 2002; Darling-Hammond et al., 2017) which have reported that PD that is both immediately useful and actively engages participants and embedded in the work environment have a high likelihood of being adopted by educators. BTPT model focuses on active learning and the relevance of that learning in the classroom, which is indicative of their postings.

Moreover, the low scores in perceived self-efficacy and motivation obtained in Table 1 suggest that teachers do not just support the BTPT model, they do it actively. It is the ground floor purchase that cannot flunk as any school change initiative can ever successful.

5.2.2 Influence of Demographic and Institutional Factors

There were no significant differences seen between attitude variable and demographic variable, sex, education level, and batch. Thus, we can conclude that BTPT is popular. This corroborates with Avalos (2011) that successful teacher development programmes tend to cross the demographic lines when the content is relevant and delivery is inclusive.

However, school location did show subtle influence: urban teachers reported higher confidence and readiness to apply BTPT strategies compared to rural counterparts. This trend aligns with research by Mulkeen (2010), who highlighted rural-urban disparities in school infrastructure and support, which in turn affects pedagogical adoption.

Additionally, a linear-by-linear association was found between younger age and greater readiness, indicating that early-career teachers may be more open to pedagogical innovation. Similar trends have been noted in studies on change adoption in education (Rogers, 2003).

5.2.3 Implementation Challenges

Despite positive attitudes, significant barriers hinder full implementation of BTPT strategies. These include:

- Lack of time (53%)
- Limited administrative support (46%)
- Inadequate ICT access and training (31%)
- Shortage of quality teaching aids (28%)

These findings resonate with the broader literature on teacher workload and reform fatigue (Hargreaves, 1994). Time emerged as the most cited constraint, consistent with the notion that even motivated teachers struggle to innovate when overburdened with daily classes and administrative tasks.

FGDs and classroom observations added qualitative depth to this issue. Teachers reported difficulty allocating time for lesson planning, leading to rushed or incomplete lesson execution. Classrooms often lacked functional ICT infrastructure, and teaching aids were poorly

maintained or unavailable mirroring observations from O'Sullivan (2006) on resource-strapped classrooms in developing contexts.

5.2.4 Impact of BTPT on Teaching Practice

Encouragingly, 96.2% of teachers reported positive changes in their teaching practices after BTPT. Of these, 45.5% noted significant improvement, while 50.7% acknowledged partial gains but emphasized the need for further development.

This reflects findings by Yoon et al. (2007), who argued that sustained instructional change depends not only on initial training but on follow-up support and system alignment. Teachers in this study shared similar sentiments, with many expressing that BTPT changed their mindset, but its full application is constrained by practical limitations.

Classroom observations also validated this, revealing attempts to use group work and inquiry-based techniques though often poorly timed, loosely aligned with content, or limited by classroom conditions.

5.2.5 School-Level Support and Structural Needs

Teachers outlined several areas where school-level support is essential for sustaining BTPT practices:

Key Needs Identified	% Teachers
Teaching materials and classroom resources	61.8%
Peer collaboration and team planning	48.9%
Monitoring and feedback mechanisms	43.9%
Administrative and leadership engagement	40.5%

These findings align with those from Leu (2004), who emphasized the role of school leadership and collegial collaboration in driving pedagogical change. Teachers in this study were clear: without resource provisioning, peer support, and administrative encouragement, the practical application of BTPT will remain inconsistent.

5.2.6 Future Training Priorities

Teachers were not only reflective about challenges—they also proactively identified areas for future development:

Desired Training Area	% Teachers
Student assessment and feedback	65.6%
ICT integration for teaching	63.7%
Modern instructional strategies	62.4%
Inclusive education practices	36.2%
Classroom management and teacher leadership	34.3%

This proactive response is proof positive that teachers are life-long learners and that teachers regard professional learning that is directly relevant to what happens in the classroom as being a priority. These findings are consistent with worldwide trends described by UNESCO (2016) which stress that teacher education has to adapt to changing students' needs, technological development, and inclusive education requirements.

5.3 Recommendations

A clear plan and tailor-made roles for the ministry of primary and mass education (MoPME), DPE, and NAPE can be instrumental in improving the effectiveness, sustainability and relevancy of the BTPT. The three parties need to work together to ensure BTPT becomes an effective, teacher-responsive professional development model which also shapes teacher's beliefs and behaviors.

The MoPME as the central policy body needs to concentrate on policy changes and the instrumentality that will facilitate the effective implementation of the training. It should formally endorse factory-gate, teacher planning time as part of the school week- time given over to teachers to prepare for and consider training content. MoPME should also adopt policy approaches to ease classroom work and administrative workload, making BTPT more accessible and less intimidating to the teachers. MoPME must also ensure the institutionalization of CPD, which entails incorporating BTPT graduates in the long-term plans of development of teachers. They are reforms that will elevate the status of professional

learning and will create a culture where teacher learning is a priority and is regarded as a valuable thing to do.

The development of BTPT curriculum and training pathways should be driven by NAPE. It needs to innovate training away from current formats towards more modular, adaptable and responsive solutions to teachers' classroom needs. The three areas in which the content of these courses needs to be revised are assessment literacy, inclusive pedagogical practice, and digital teaching skills. NAPE also must ensure that in BTPT, hands-on ICT training is incorporated, with emphasis on elementary troubleshooting skills, to lend confidence to teachers to use ICT on their own. In addition, all curricula should be available online and off to encourage year-round, on demand learning. NAPE should also develop and make available orientation packages that could help teachers learn how to incorporate teaching-learning materials in their daily lesson plan in a more effective utilization of resources.

Implementing, monitoring, and evaluating BTPT at the field level is the responsibility of the Directorate of Primary Education (DPE). It also needs to manage the implementation of new training modules, and track how training is converted to improved classroom practices. This involves developing structured systems for tracking teacher quality including peer observation instruments, well-articulated development record sheets and coordination committees at the school level. DPE must ensure that multimedia classrooms are operational, equipped, and appropriately used. And DPE needs to partner with school clusters to establish peer mentoring and coaching models that would offer continued professional support at the local level. It also needs planning of refresher courses for staging and monitoring targeting new training needs, such as classroom management, student assessment and inclusive education approaches. As the oversees role, DPE is the catalyst of reform and accountability in BTPT system.

NAPE and DPE also must collaborate to grow school-based leadership. Must work together on the programs design and implementation to engage headteachers and URC-level authorities for instructional leadership, scheduling of BTPTs, peer support system, and teacher motivation. You will also be certain effective training is in the field, with ongoing support and follow-up, by empowering school leaders.

In brief, through an effective distribution of roles, that is, MoPME for approval of the policy and the system transformation, NAPE for design of the training and capacity building, and DPE for implementation and monitoring, Bangladesh can convert BTPT to a lively, adaptable and feasible professional development system. It will not only improve the quality of training

delivery targeting teacher attitudes, motivation, confidence and ultimately teaching and learning outcomes across the primary education sector.

Teachers were widely influenced by BTPT perception and inspired by pedagogical Resources. That Ghost, however, was not enough to influence a change in a person. That leads people to do things differently in practice rather than simply in training; it takes a system that responds, time, tools, and Leadership and Learning to succeed.

One of the most pressing questions is what place does BTPT take up in teachers' work in a school? For BTPT to be more than a good idea gone bad, a temporary instructional reform that a handful of practitioners attempt to implement unsuccessfully, it needs to be integrated into the life of the school where it is supported by leaders and never free from the possibility of refinement based on teacher feedback and classroom-based evidence.

Chapter 6: Conclusion

6.1 Summary of the Study

The current study examined how the BTPT (Blended Teaching and Pedagogical Transformation) program was incorporated by primary school teachers in Bangladesh. Framed within the evolving context of 21st century teaching, BTPT centers on student-centered learning, technology integration, and reflection in teaching. Study aims were to describe teacher attitudes; identify barriers to use; and investigate organizational and contextual factors associated with its uptake.

The data were collected from 432 primary school teachers from a pre-coded structured questionnaire and further from FGD (Focus Group Discussion), and class- room participatory observation. This triangulation supported a nuanced and rich picture of teachers' perceptions and practices in varying school contexts.

Results indicate that, effective as the BTPT program has been in changing attitudes and practices of teachers in a positive direction, implementation of what is learned in teacher education programs is inconsistent at best and hindered by structural and systemic impediments.

6.2 Major Findings and Interpretations

6.2.1 Strong Positive Attitudes Across the Board

BTPT was highly accepted among most teachers, as mean score in the attitudinal factors (understanding, motivation, confidence, readiness, and overall perception) approached or exceeded 4.0 with a 5-point Likert scale. Over 79 percent of respondents said they felt either positive or very positive overall.

These results are in line with the work of Darling-Hammond et al. (2017) and Guskey (2002), indicating that teachers are more likely to respond positively to professional development initiatives that they believe are relevant to practice in their classroom, and that they anticipate to enable more active engagement in learning activities.

Possibly these elements of activeness, peer interaction and real-classroom simulation in the BTPT model contributed to this good reception. The positive attitude is evident in the FGD where several teachers said that BTPT made them better teachers and more engaging, reflective and student-friendly teachers.

6.2.2 Broad Appeal with Minimal Demographic Differences

Analysis showed no significant variation in attitudes across demographic categories such as gender, education level, or training batch, indicating that BTPT has broad-based relevance and acceptability. However, slight differences were observed:

- Urban teachers reported higher confidence and readiness than their rural counterparts, pointing to infrastructure disparities and digital divide.
- Younger teachers demonstrated greater readiness for change, consistent with Rogers' (2003) theory that early adopters of innovation are often more flexible and open to change.

These findings reinforce the idea that contextual and institutional conditions, rather than individual demographics, play a more decisive role in influencing the implementation of new teaching approaches.

6.2.3 Practical Barriers to Implementation

Despite the positive mindset, teachers identified several critical barriers that limit the consistent application of BTPT in the classroom:

- Time constraints due to high teaching loads (cited by 53% of respondents)
- Limited administrative and leadership support (45.8%)
- Gaps in ICT training and equipment access (31.5%)
- Insufficient teaching aids and instructional materials (28%)
- Poor stakeholder awareness or support (22.9%)

These barriers are not uncommon in education reform efforts. Hargreaves (1994) emphasizes that without systemic restructuring particularly around time and workload even well-designed reforms often fail at the classroom level. Classroom observations further supported these concerns, revealing incomplete or rushed lesson delivery, underutilized group work, and minimal use of ICT despite training emphasis.

6.2.4 Perceived Impact on Teaching Practice

Teachers were overwhelmingly positive about the effect of BTPT on their teaching, with 96.2% reporting some level of improvement:

- 45.5% reported significant change
- 50.7% reported moderate change with room for development
- Only 3.7% reported minimal or no change

This result reflects that BTPT successfully altered teacher mindset and pedagogical orientation, even if practical execution remains uneven. Teachers described becoming more reflective, student-focused, and engaged, though they noted that time, materials, and support structures often limit their ability to consistently apply new techniques.

6.2.5 Institutional and School-Level Support Needs

Teachers identified several key areas where school-level support is essential for BTPT success:

Support Area	% Teachers
Access to classroom materials/resources	61.8%
Peer learning and collaboration forums	48.9%
Monitoring and feedback mechanisms	43.9%
Leadership support from school heads	40.5%
Refresher and follow-up training	27.4%

This finding echoes the literature on school-based professional development (Leu, 2004; Avalos, 2011), which highlights that ongoing mentorship, shared learning, and leadership engagement are critical for turning short-term training into long-term change.

6.2.6 Demand for Continued Training

Teachers were not only responsive to BTPT but also expressed a clear vision for their future professional learning, particularly in the following areas:

- Student assessment and feedback (65.6%)
- ICT integration (63.7%)
- Modern instructional methods (62.4%)

- Inclusive education (36.2%)
- Classroom management and teacher leadership (34.3%)

This demand reflects a mature and reflective teaching community, one that is aware of evolving classroom needs and eager for tools to meet them. It also offers a clear roadmap for future professional development initiatives.

6.3 Implications for Policy and Practice

The study's findings highlight the need for an ecosystemic approach to BTPT implementation. Training, while essential, must be supported by changes in the school environment, institutional culture, and policy frameworks. Key implications include:

- Revisiting school schedules to create protected planning and reflection time
- Investing in basic ICT infrastructure and technical support
- Empowering school leaders to become instructional coaches and facilitators
- Developing teaching communities of practice to sustain collaboration and mentorship
- Aligning training content with teachers' self-identified development areas

When these structural elements are addressed, BTPT has the potential to move from episodic training to a continuous, embedded professional growth model.

6.4 Recommendations for Future Research

To build on this study's insights, future research should explore:

1. Longitudinal impacts of BTPT on teacher behavior and student outcomes
2. Comparative studies across geographic or institutional settings
3. School leadership's role in enabling or impeding pedagogical change
4. Student perceptions and learning outcomes under BTPT-trained teachers
5. Evaluation of digital readiness and ICT integration in rural schools

Such studies would enrich the understanding of BTPT's effectiveness and guide targeted policy interventions.

6.5 Final Reflection

The BTPT program has successfully introduced a new pedagogical paradigm one that emphasizes active learning, teacher empowerment, and student engagement. Teachers have responded with enthusiasm, and many have already begun adapting their practices. However, training alone is not enough.

To ensure BTPT's long-term success, the education system must evolve to remove barriers and amplify enablers. Time, tools, trust, and training must align within schools. Only then can BTPT move from being a promising initiative to becoming a pillar of sustainable instructional reform in Bangladesh.

If scaled thoughtfully and supported systematically, BTPT can serve as a model for teacher professional development, not only nationally but as an inspiration to similar contexts globally.

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Exploring Primary Teachers' Practice for Developing Science Process Skills Among 5th Grade Students in Bangladesh

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Abstract

This study explored primary teachers' practice for developing Science Process Skills among 5th grade students in Bangladesh. We explored the answer to these 3 research questions- 1. What science process skills are embedded in 5th grade primary science textbook in Bangladesh? 2. To what extent intended SPS s are able to transform effectively the activities of textbooks into classroom practice for developing science process skills among 5th grade students? 3. What are the challenges in transforming the activities of textbook lessons into classroom practice?

We analyzed the national textbook of 5th grade first to identify the science process skills embedded in the lessons. Then we observed fifteen classes in total, three classes each of five teachers selected purposively to explore if they are effective enough in transforming the intended SPS into implemented SPS for developing students' SPS. We also interviewed them to explore the challenges in transforming SPS. Therefore, an interpretive case study approach was used in the study

The study found basic process skills dominant in the textbook lessons at 5th grade especially communicating results and observing. The participant teachers were not effective enough transforming the intended SPS into implemented SPS. The challenges we found were their improper understanding of SPS. At the same time their behaviorist views of teaching is another crucial factor hindering students SPS development.

The findings have implications for curriculum planners, textbook writers and trainers. Curriculum planners and textbook writers can consider the findings in designing future curriculum and textbook. Trainers can focus more on developing teachers understanding of SPS in training as well as in developing course contents.

Chapter 1: Introduction

Introduction

The purpose of science education in the primary level of Bangladesh is to make the students scientifically literate by developing their scientific process skills. These skills will enable them to learn about the various aspects of nature. Developing science process skills has been seen as a way of developing students' scientific literacy and scientific mind (NCTB, 2021).

The role of science process skills in science education has been a focus of study since the 1960s, when research aimed at developing school programs to improve these skills began. A long-standing debate in science education revolves around how much emphasis should be placed on the methods of science the science process skills within the school curriculum. In the United States, the AAAS initiated studies on this issue in 1967, while the DES began similar studies in England during the 1960s (Brotherton & Preece, 1995). Numerous studies have highlighted the effectiveness of science process skills in enhancing teaching and learning about science (Brotherton & Preece, 1995; Turpin & Cage, 2004; Wilke & Straits, '2005). Children exhibit qualities similar to scientists, especially curiosity. This natural curiosity drives them to explore and inquire from an early age. The skills and processes they develop in this exploration mirror those that scientists use in their investigations, such as observation, classification, measurement, inference, hypothesis formulation, and experimentation. These activities are essential for understanding the world and creating environments conducive to life. Science process skills, as described by Beaumont-Walters & Soyibo, (2001) refer to the ways of thinking involved in scientific inquiry.

When engaging in science, we ask questions and seek answers, which are the same skills we apply in everyday life to solve problems. Teaching these skills to students not only helps them in science but also equips them with abilities they will use throughout their lives. The use of science process skills enhances the retention of learning. By engaging in hands-on activities that activate multiple senses, students solidify their understanding through experience. Developing these skills allows students to solve problems, think critically, make decisions, find answers, and address their concerns. Learning science process skills also fosters logical thinking, encouraging students to ask meaningful questions, seek answers, and resolve real-life challenges. Problem-solving, central to scientific inquiry, involves students identifying and addressing problems through structured investigations. In this process, they apply science process skills, which are the core methods of scientific investigation.

Teaching approaches like inquiry-based learning, problem-solving, project-based learning, and problem-based learning rely heavily on students' ability to use science process skills effectively to conduct investigations (Colley, 2006). Inquiry science teaching involves students engaging in hands-on science activities, encouraging them to learn both about science and through science. Students involved in simple inquiry engage in processes such as observing, comparing, contrasting, and hypothesizing. One contemporary area of research focuses on how children understand and apply science process skills in designing investigations (Keys & Bryan, 2001). Scientific inquiry exercises serve as the primary means for developing science process skills, with inquiry itself being used to teach these skills (Wilke & Straits, 2005). According to Minner et al. (2010), the concept of inquiry has become central in science education, with three key aspects: what scientists do, how students learn, and the pedagogical approaches teachers use. Inquiry-based teaching has shown positive effects on student learning, concept understanding, problem-solving, laboratory instruction, cooperative learning, and discovery-based methods, all of which emphasize extensive use of science process skills (Chang & Taipei, 2002).

Mastering science process skills is essential for learning science. Inquiry-based science teaching immerses students in the investigative nature of science, where the focus is on actively seeking knowledge to satisfy curiosity. Inquiry-based teaching methods positively impact student performance in problem-solving, making predictions, reflection and drawing conclusions. These abilities are essential for high-achieving students and future graduates.

Statement of the problem

There is a growing consensus among the education community that students should develop science process skills in the early stage of education. It helps them in many ways. They develop scientific knowledge and skills that enhance their cognitive abilities, problem solving skills, and inquiry skills. Therefore, it is important to explore the science process skills that are taught at the elementary level (Erst, 2014).

Science textbooks at primary level are designed considering inquiry approach. The students are expected to develop science process skills through inquiry-based science teaching. However, Tuli, et. al. (2022) explored challenges in implementing inquiry in science classrooms in Bangladesh. They found that the primary teachers are not implementing inquiry activities properly. The students therefore may not develop science process skills as expected.

Research Gap

Teaching science process skills in primary classrooms is a popular area of research all over the world (Brostrom, 2015), however very few studies have been conducted on this topic in Bangladesh. One study has been conducted at secondary level. Ahmed and Siddiquee (2014) analyzed junior secondary science textbooks to identify the distribution of SPS in the activities and found that more emphasis was given on observing, inferring and measuring skills with less emphasis on classifying, predicting, communicating and time space relationship. They also found only one integrated skill in the textbook activities that is controlling variables.

We don't have enough data to determine if the primary teachers are effectively practicing for developing students' science process skills or not. Chakraborty and Kidman (2021) investigated science process skills in Bangladeshi primary textbooks from class three to five. They analyzed those textbooks with their own framework that they called the science textbook inquiry process skills framework. They included 14 process skills in their framework that missed some skills given importance by SAPA like using time space relationship, defining operationally, experimenting and constructing models. That study didn't explore the classroom practice in Bangladesh but suggested for further study.

Purpose of the study

The purpose of this study is to investigate primary teachers' practice for developing Science Process Skills among 5th grade students in Bangladesh.

Research questions

1. What science process skills are embedded in 5th grade primary science textbook in Bangladesh?
2. How effectively primary teachers can transform the intended SPS into implemented SPS for developing science process skills among 5th grade students?
3. What are the challenges in transforming the intended SPS into implemented SPS in classroom practice?

Chapter 2: Theoretical framework

Many organizations as well as educators identified different science process skills. Martin, et. al. (2004) listed 16 process skills, Tolman (2002) listed 10 process skills. Most educators grouped science process skills into two types-basic process skills and integrated process skills. Bybee, et. al. (1989) labeled observing, measuring, classifying, communicating, inferring, using number, using space time relationship and questioning as basic process skills while controlling variables hypothesizing, defining operationally, formulating models, designing experiments and interpreting data as integrated process skills. Padilla (1990) labeled the same skills as basic and integrated process skills.

Science- A Process Approach (SAPA) is a curriculum project that grouped science process skills into two categories-basic and integrated skills. SAPA II (1975) cited in Riris (2004) listed 13 process skills where there are 7 basic skills and 6 integrated skills. These 13 process skills listed below served as the conceptual framework for our study.

Table 1: Science process skills framework

Basic process skills	**Definition**	**Example**
Observing	Use of senses to collect information about an object or event.	Observe the pond and find out the possible causes of pollution.
Measuring	Get a reading about the dimensions of an object/matter by using an instrument.	Measure the time needed to melt ice.
Classifying	Categorize various objects based on common properties.	Categorize the water sources based on their safety.
Predicting	Guess the outcome of a future event based on experience.	What will happen if a bag of air is placed in water filled with ice.
Communicating result	written, verbal, pictorial, tabular or graphical presentation of findings.	Discuss the results in a group.

Inferring	Come to a conclusion based on observations	Why is the wheel spinning?
Using space time relationship	Identify the relative position, motion and changes of all events occurring at certain times and in certain places.	What is happening when you are moving a light around an object?

Integrated process skills	**Definition**	**Example**
controlling variables	Decide which variables to change.	Decide the amount of sand and stone for making a simple purifier.
Interpreting data	Draw conclusions from organized data.	Differentiate between two glasses, one in room temperature and the other in cold temperature.
Formulating hypothesis	Making a general explanation for a related set of observations.	What is necessary to make a plant grow faster?
Defining operationally	Telling the process of measuring a variable in any experiment.	Telling that the time will be measured in minutes.
Experimenting	Investigate through a controlled manipulation of variables.	The whole process of conducting an experiment on the process of heat transmission.
Formulating models	Create a physical or mental model of a process or event.	How cloud forms and rain fall.

Chapter 3: Methodology

Research design

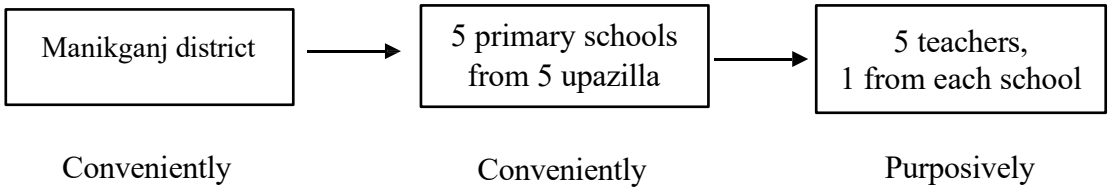
This study used an interpretive qualitative design. Researchers approached this method to investigate any central phenomenon (Guba & Lincoln, 1994). Science process skills are the central phenomenon of this study. First, we conducted document analysis to identify the skills from the lessons of textbook. Then, case study approach has been followed to explore primary teachers' practice in the classroom as well as the challenges in transforming intended SPS into implemented SPS.

Data sources

RQs	Focus of the RQs	Data Sources
1. What science process skills are embedded in 5th grade primary science textbook in Bangladesh?	SPS	Textbook
2. How effectively primary teachers can transform the intended SPS into implemented SPS for developing science process skills among 5th grade students?	Implemented SPS	Teachers
3. What are the challenges in transforming the intended SPS into implemented SPS in classroom practice?	Challenges in implementation	Teachers

Sample size and sampling

Manikganj district is the area of our study. We selected this area for convenience. Then we selected five primary schools from 5 upazillas conveniently. After that, we selected five teachers in total, one from each school, purposively. We selected those teachers who teach science to 5th grade students regularly. There is no subject based teacher in primary schools of Bangladesh.



Data collection tools

For document analysis, we analyzed the latest primary science textbook. This resource book is open access for all. Each page of the resource book has been analyzed to find out the reflection of science process skills. We used a semi-structured observation schedule for observing classroom practice. We also interviewed the participant science teachers to find out their knowledge and understanding about SPS. We used a semi-structured interview schedule comprising open ended questions for that purpose.

Methods of data collection

Both primary and secondary data were collected for this study. The primary science textbook of 5th grade was used as secondary data. Qualitative content analysis was the way of data analysis. For primary data, 15 primary classes, three classes of each teacher, were observed. Classroom practice of a teacher was observed thrice to find out the consistency in data. A semi-structured observation schedule was used to gather the data. A semi-structured interview schedule was used to collect data on the participant teachers' view regarding science process skills.

Data analysis technique

A deductive qualitative approach has been used in the study. We analyzed the textbook first to identify the science process skills in activities in all the lessons. For each SPS, here are some examples of activities from the 5th grade textbook. Two inter raters reviewed the analysis separately. Agreement is 100% for both the inter raters. We analyzed the all activities from the textbook this way.

Table 2: Example of SPS found in 5th grade textbook.

SPS	**Sample activity in textbook**	**Inter rater 1**	**Inter rater 2**
communicating	Discuss result with your classmates (page 2)	✓	✓
Observing	Find out different pollutions outside of classroom (page 9)	✓	✓
Inferring	What is happening inside a bag full of air when dipped into iced water (page 20).	✓	✓
Classifying	Complete a table writing the names of natural and man-made resources (page 89).	✓	✓

Predicting	Guess the change inside a bag full of air when dipped into iced water (page 19).	✓	✓
Measuring	Fill two trays, one with 1cm thick sand and another with 1cm deep water (page 75).	✓	✓
using space time relationship	How will be the weather in Rangpur district? (page 73)	✓	✓
experimenting	Proving the transmission of energy (page 34).	✓	✓
controlling variables	Pour water in two glasses in room temperature and add ice into one (page 17)	✓	✓
interpreting data	Write mean temperature of different years from a diagram (page 81).	✓	✓
formulating hypothesis	Is climate change good or bad for us?	✓	✓
formulating models	Prepare a plan on gathering and preserving information as well as their sources (page 71).	✓	✓
defining operationally	Not found	✓	✓

These above process skills served as the themes that framed the observation and interview schedule. We presented the science process skills elicited from the science textbook in frequency. Findings from classroom observations and interviews have been presented case wise followed by a cross-case analysis in the discussion.

Ethical considerations

We tried to maintain ethical issues. Written consent was taken from each of the participants.

Chapter 4: Findings

Findings of textbook analysis

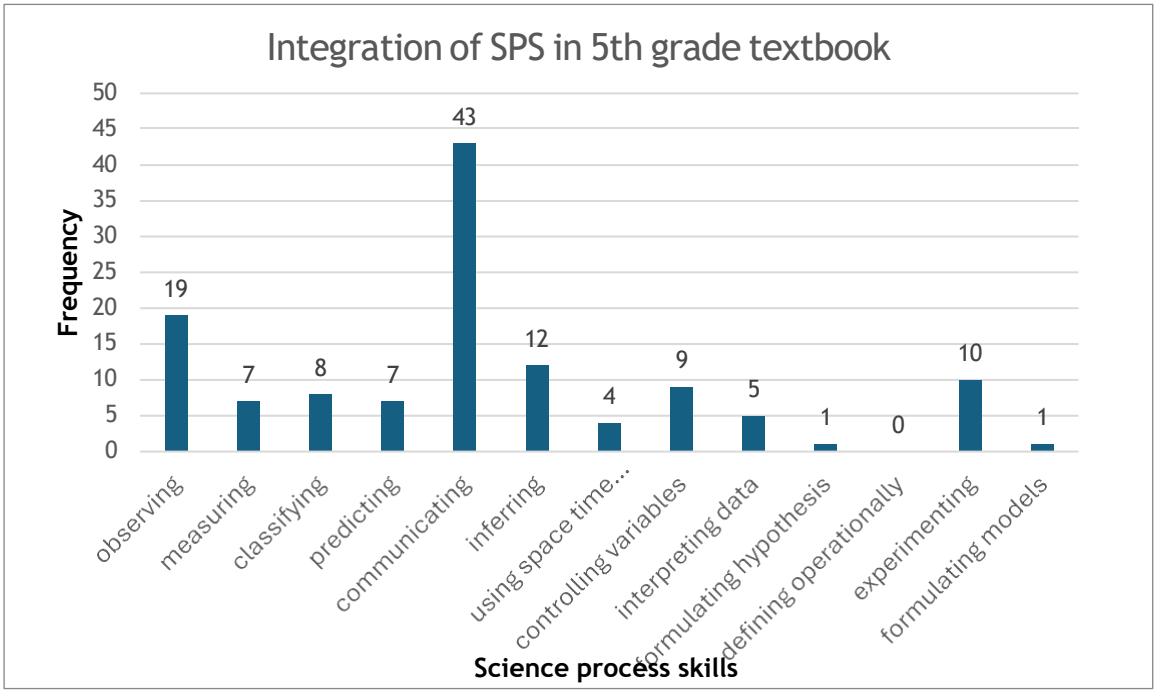
Table 3: Integration of basic SPS in 5th grade textbook

Sl	SPS	Frequency (N=49)
1	communicating	43
2	Observing	19
3	Inferring	12
4	Classifying	8
5	Predicting	7
6	Measuring	7
7	using space time relationship	4

Table 4: Integration of integrated SPS in 5th grade textbook

Sl	SPS	Frequency (N=49)
8	experimenting	10
9	controlling variables	9
10	interpreting data	5
11	formulating hypothesis	1
12	formulating models	1
13	defining operationally	0

Chart 1: frequency of SPS in textbook



Scope for developing communicating skill has been found in most number (43) of activities, followed by observing in 19 activities and inferring in 12 activities. Experimenting opportunity has been found in 10 activities, among them scope for controlling variables are found in 9 activities. All other skills have been found in few activities. No activity has no opportunity for students to develop the skill 'defining operationally'.

Table 5: Distribution of SPS in each lesson of chapter 1 (Our environment)

Sl	SPS	Chapter 1			Total
		Lesson 1	Lesson 2	Lesson 3	
1	Observing	-	✓	✓	2
2	Measuring	-	-	-	0
3	Classifying	✓	-	-	1
4	Predicting	-	-	-	0
5	Communicating	✓	✓	✓	3

6	Inferring	-	✓	✓	2
7	Using space time relationship	-	-	-	0
8	Controlling variables	-	-	-	0
9	Interpreting data	-	-	-	0
10	Formulating hypothesis	-	-	-	0
11	Defining operationally	-	-	-	0
12	Experimenting	-	-	-	0
13	Formulating models	-	-	-	0

The first chapter is about our environment. After analyzing the lessons of this chapter, we found communication in 3 activities, observation and inferring in 2 activities. No integrated skills have been identified in this chapter.

Table 6: Distribution of SPS in each lessons of chapter 2 (Environmental pollution)

Sl	SPS	Chapter 2			Total
		Lesson 1	Lesson 2	Lesson 3	
1	Observing	✓	-	-	1
2	Measuring	-	-	-	0
3	Classifying	-	-	-	0
4	Predicting	-	-	-	0
5	Communicating	✓	✓	✓	3
6	Inferring	-	-	-	0
7	Using space time relationship	-	-	-	0
8	Controlling variables	-	-	-	0
9	Interpreting data	-	-	-	0
10	Formulating hypothesis	-	-	-	0
11	Defining operationally	-	-	-	0
12	Experimenting	-	-	-	0

13	Formulating models	-	-	-	0

All the three lessons in chapter have communicating opportunity for students while one lesson contains observing opportunity. No other skills have been found in any activity of the lessons.

Table 7: Distribution of SPS in each lessons of chapter 3 (water for life)

Sl	SPS	Chapter 3					Total
		Lesson 1	Lesson 2 (Activity 1)	Lesson 2 (Activity 2)	Lesson 3	Lesson 4	
1	Observing	-	✓	✓	-	✓	3
2	Measuring	-	-	-	-	-	0
3	Classifying	✓	-	-	-	-	1
4	Predicting	-	-	✓	-	-	1
5	Communicating	✓	✓	✓	✓	✓	5
6	Inferring	-	✓	-	-	-	1
7	Using space time relationship	-	-	-	-	-	0
8	Controlling variables	-	✓	✓	-	✓	3
9	Interpreting data	-	✓	✓	-		2
10	Formulating hypothesis	-	-	-	-	-	0
11	Defining operationally	-	-	-	-	-	0
12	Experimenting	-	✓	✓	-	✓	3
13	Formulating models	-	-	-	-	-	0

Chapter three includes much SPS in its lesson activities. All the activities include communication scope for students. Besides there are opportunities for experimenting where they can learn how control variable and interpreting experiment data.

Table 8: Distribution of SPS in each lessons of chapter 4 (air)

Sl	SPS	Lesson 1	Lesson 2	Total
1	Observing	✓	-	1

2	Measuring	-	-	0
3	Classifying	-	-	0
4	Predicting	✓	-	1
5	Communicating	✓	✓	2
6	Inferring	✓	-	1
7	Using space time relationship	-	-	0
8	Controlling variables	✓	-	1
9	Interpreting data	-	-	0
10	Formulating hypothesis	-	-	0
11	Defining operationally	-	-	0
12	Experimenting	✓	-	1
13	Formulating models	-	-	0

Between the two lessons of this chapter which is about air, the first lesson includes some basic skills as well as some integrated skills. Lesson two includes only the communicating scope for students.

Table 9: Distribution of SPS in each lesson of chapter 5 (energy and matter)

Sl	SPS	Lesson 1				Lesson 2	Total
		Activity 1	Activity 2	Activity 3	Activity 4		
1	Observing	✓	✓	✓	-	✓	4
2	Measuring	-	-	✓	-	-	1
3	Classifying	-	-	-	-	-	0
4	Predicting	-	-	✓	-	-	1
5	Communicating	✓	✓	✓	✓	✓	5
6	Inferring	-	-	✓	-	✓	2
7	Using space time relationship	-	-	-	-	-	0
8	Controlling variables	-	-	-	-	-	0
9	Interpreting data	-	-	✓	-	-	1
10	Formulating hypothesis	-	-	-	-	-	0
11	Defining operationally	-	-	-	-	-	0
12	Experimenting	-	-	✓	-	-	1
13	Formulating models	-	-	-	-	-	0

In the 5th chapter (title: energy and matter), lesson 1 has four activities and lesson two has one activity. The 3rd activity of the first lesson includes most number (7) of SPS. All the activities of these two lessons have scope to develop communication skill.

Table 10: Distribution of SPS in each lesson of chapter 6 (food for healthy life)

Sl	SPS	Chapter 6			Total
		Lesson 1	Lesson 2	Lesson 3	
1	Observing	-	-	-	0
2	Measuring	✓	-	-	1
3	Classifying	✓	-	✓	2
4	Predicting	-	-	-	0
5	Communicating	✓	✓	✓	3
6	Inferring	-	-	-	0
7	Using space time relationship	-	-	-	0
8	Controlling variables	-	-	-	0
9	Interpreting data	-	-	-	0
10	Formulating hypothesis	-	-	-	0
11	Defining operationally	-	-	-	0
12	Experimenting	-	-	-	0
13	Formulating models	-	-	-	0

The 6th chapter includes communicating, classifying and measuring in 3, 2 and 1 lesson respectively. All the other SPS are missing in this chapter.

Table 11: Distribution of SPS in each lesson of chapter 7 (Hygiene)

Sl	SPS	Chapter 7					Total
		Lesson 1					
		Activity 1	Activity 2	Activity 3	Activity 4	Lesson 2	
1	Observing	-	-	-	-	-	0
2	Measuring	-	-	-	-	-	0
3	Classifying	-	-	-	-	-	0
4	Predicting	-	-	-	-	-	0
5	Communicating	-	✓	✓	✓	✓	4
6	Inferring	-	-	-	-	-	0
7	Using space time relationship	-	-	-	-	-	0
8	Controlling variables	-	-	-	-	-	0
9	Interpreting data	-	-	-	-	-	0
10	Formulating hypothesis	-	-	-	-	-	0
11	Defining operationally	-	-	-	-	-	0
12	Experimenting	-	-	-	-	-	0
13	Formulating models	-	-	-	-	-	0

In the seventh chapter which is about hygiene, no process skills have been identified except communicating in 4 activities.

Table 12: Distribution of SPS in each lessons of chapter 8 (the universe)

Sl	SPS	Chapter 8					Total
		Lesson 1 (Activity 1)	Lesson 1 (Activity 2)	Lesson 2	Lesson 3	Lesson 4	
1	Observing	-	-	✓	✓	✓	3
2	Measuring	✓	-	-	✓	-	2
3	Classifying	-	-	-	-	-	0
4	Predicting	-	-	-	-	-	0
5	Communicating	✓	-	✓	✓	✓	4
6	Inferring	-	-	✓	-	-	1
7	Using space time relationship	-	-	✓	✓	✓	3
8	Controlling variables	-	-	✓	✓	✓	3
9	Interpreting data	-	-	-	-	-	0
10	Formulating hypothesis	-	-	-	-	-	0
11	Defining operationally	-	-	-	-	-	0
12	Experimenting	-	-	✓	✓	✓	3
13	Formulating models	-	-	-	-	-	0

The 8th chapter which is on 'the universe', There are skills like observing, communicating, using space time relationship, controlling variables, experimenting embedded into lesson activities.

Table 13: Distribution of SPS in each lessons of chapter 9 (technology in our life)

Sl	SPS	Chapter 9			Total
		Lesson 1	Lesson 2	Lesson 3	
1	Observing	-	-	-	0
2	Measuring	-	-	-	0
3	Classifying	✓	✓	-	2
4	Predicting	-	-	-	0
5	Communicating	✓	✓	✓	3
6	Inferring	-	-	-	0
7	Using space time relationship	-	-	-	0
8	Controlling variables	-	-	-	0
9	Interpreting data	-	-	-	0
10	Formulating hypothesis	-	-	-	0
11	Defining operationally	-	-	-	0
12	Experimenting	-	-	-	0
13	Formulating models	-	-	-	0

The 9th chapter has communicating and classifying skills development scope for students. All the other SPS are missing here.

Table 14: Distribution of SPS in each lesson of chapter 10 (information in our life)

Sl	SPS	Chapter 10		Total
		Lesson 1	Lesson 2	
1	Observing	-	-	0
2	Measuring	-	-	0
3	Classifying	-	-	0
4	Predicting	✓	-	1
5	Communicating	✓	✓	2
6	Inferring	-	-	0
7	Using space time relationship	-	-	0
8	Controlling variables	-	-	0
9	Interpreting data	-	-	0
10	Formulating hypothesis	-	-	0
11	Defining operationally	-	-	0
12	Experimenting	-	-	0
13	Formulating models	-	✓	1

The 10th chapter includes communicating and predicting skills. Formulating model has been found in one activity of this chapter where students will develop a plan on how they will collect and preserve data as well as their sources. This process skill has not been found in any chapter of this textbook.

Table 15: Distribution of SPS in each lesson of chapter 11 (Weather and climate)

Sl	SPS	Chapter 11				Total
		Lesson 1	Lesson 2	Lesson 3	Lesson 4	
1	Observing	-	✓	✓	-	2
2	Measuring	✓	✓	-	-	2
3	Classifying	-	-	✓	-	1
4	Predicting	-	✓	-	-	1
5	Communicating	-	-	✓	-	1
6	Inferring	✓	-	✓	-	2
7	Using space time relationship	-	✓	-	-	1
8	Controlling variables	-	✓	-	-	1
9	Interpreting data	✓	✓	-	-	2
10	Formulating hypothesis	-	-	-	-	0
11	Defining operationally	-	-	-	-	0
12	Experimenting	-	✓	-	-	1
13	Formulating models	-	-	-	-	0

The 11th chapter includes much SPS, both basic and integrated, in its lessons except lesson 4. Lesson 2 includes most number of SPS among the lessons in this chapter.

Table 16: Distribution of SPS in each lesson of chapter 12 (climate change)

Sl	SPS	Chapter 12			Total
		Lesson 1	Lesson 2	Lesson 3	
1	Observing	✓	✓	✓	3
2	Measuring	-	✓	-	1
3	Classifying	-	-	-	0
4	Predicting	-	✓	-	1
5	Communicating	✓	-	✓	2
6	Inferring	-	✓	✓	2
7	Using space time relationship	-	-	-	0
8	Controlling variables	-	✓	-	1
9	Interpreting data	-	-	-	0
10	Formulating hypothesis	✓	-	-	1
11	Defining operationally	-	-	-	0
12	Experimenting	-	✓	-	1
13	Formulating models	-	-	-	0

The 12th chapter includes observation in all the lessons. Lesson 2 includes the most number of SPS among the lessons in this chapter.

Table 17: Distribution of SPS in each lesson of chapter 13 (natural resources)

Sl	SPS	Chapter 13		Total
		Lesson 1	Lesson 2	
1	Observing	-	-	0
2	Measuring	-	-	0
3	Classifying	✓	-	1
4	Predicting	-	-	0
5	Communicating	✓	✓	2
6	Inferring	-	-	0
7	Using space time relationship	-	-	0
8	Controlling variables	-	-	0
9	Interpreting data	-	-	0
10	Formulating hypothesis	-	-	0
11	Defining operationally	-	-	0
12	Experimenting	-	-	0
13	Formulating models	-	-	0

The 13th chapter includes only communicating and classifying scope for students. No other skills have been found in this chapter.

Table 18: Distribution of SPS in each lesson of chapter 14 (population and natural environment)

Sl	SPS	Chapter 14				Total
		Lesson 1 (Activity 1)	Lesson 1 (Activity 2)	Lesson 2	Lesson 3	
1	Observing	-	-	-	-	0
2	Measuring	-	-	-	-	0
3	Classifying	-	-	-	-	0
4	Predicting	-	✓			1
5	Communicating	✓	✓	✓	✓	4
6	Inferring	✓	-	-	-	1
7	Using space time relationship	-	-	-	-	0
8	Controlling variables	-	-	-	-	0
9	Interpreting data	-	-	-	-	0
10	Formulating hypothesis	-	-	-	-	0
11	Defining operationally	-	-	-	-	0
12	Experimenting	-	-	-	-	0
13	Formulating models	-	-	-	-	0

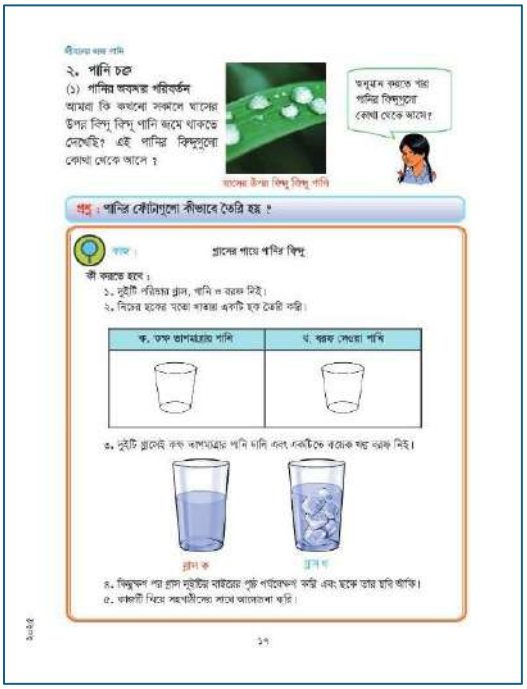
The last chapter includes communicating in all the lessons with predicting and inferring in one lesson. Other SPS are missing in this chapter.

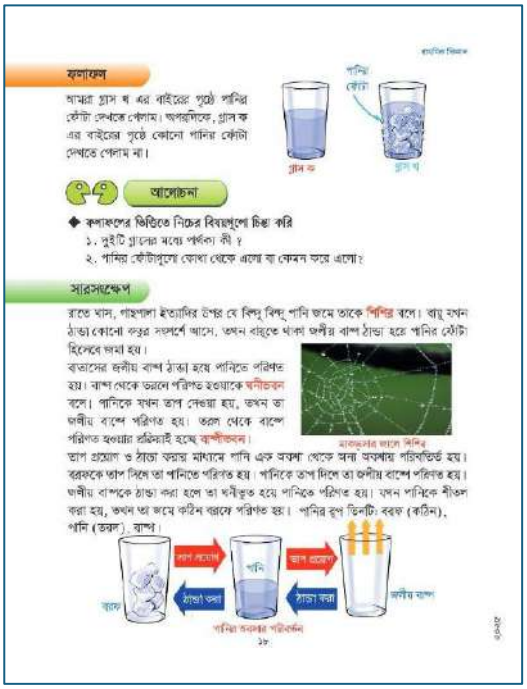
Findings from classroom observations and interviews

Case 1

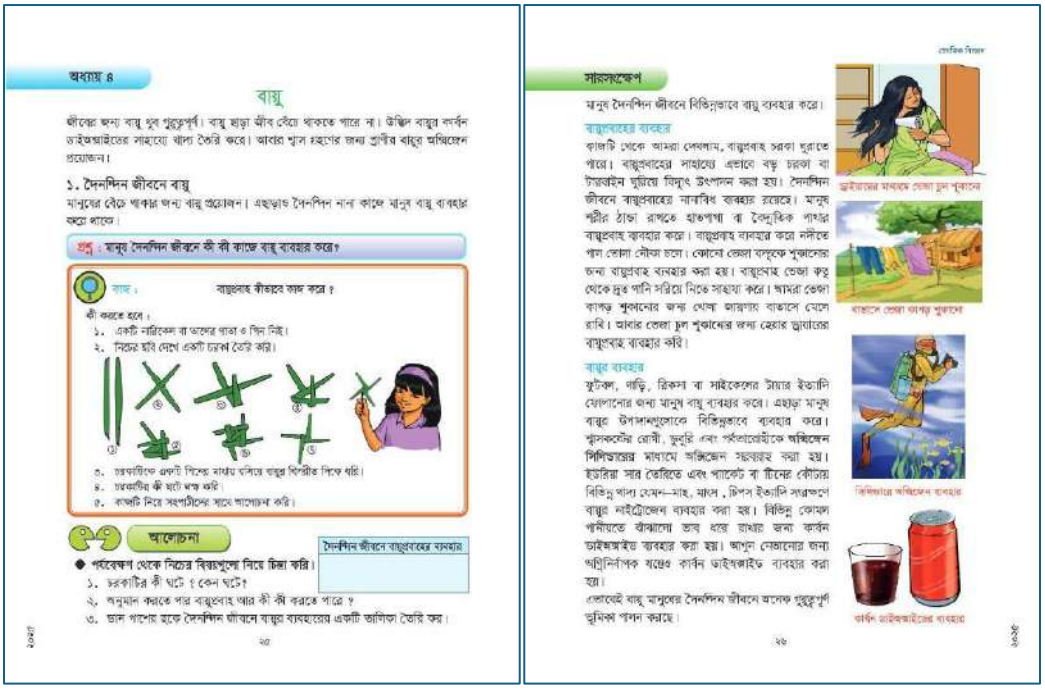
Case 1 holds honors and master's in forestry. He has five years teaching experience in total and has been teaching science for three years. He taught 'water cycle' to students in his first lesson. There was an experiment on the existence of water in air in that lesson. Neither the teacher nor the students conducted the experiment. There was no instruction from the teacher. Besides, the

teacher explained the cycle of water with the help of a picture. As a result, the students did not find any room for developing the process skills- predicting, communicating results, observing, controlling variables, experimenting and interpreting data which were incorporated with the experiment.





In his second class, he taught the use of air and how air flow from the chapter ‘air’. At first, he provided balloons to the students and asked them to inflate. He asked students what they were feeling. Another question he asked is what you feel when the fans are on. He also asked them to move their hands and asked what they were feeling. By giving these examples, he was providing opportunities for students to predict the existence of air. At one point, he asked students to predict the use of air. He allowed one minute to think about the use. However, he allowed only one student to answer. Without knowing the answer of other students, he showed some pictures and asked about it. There was an experiment where students were supposed to make spinning wheels to examine how air flows. Observing, predicting, communicating, inferring, controlling variables and experimenting were the process skills embedded in that activity. The teacher did not instruct the students to do the activity. Therefore, the students missed the opportunity to develop those skills.



In his third class, he taught air pollution. At the beginning, he asked students to inhale the air. He did not ask any questions. Instead, he told the students that the air good. Then he mentioned some examples of polluted air. After that he showed some pictures of the causes of air pollution. Then he asked students to write about the causes and effects of air pollution. This activity of completing a table was supposed to be completed by the students at the beginning of the lesson as instructed by the textbook. That's how the students missed an opportunity to develop some process skills.

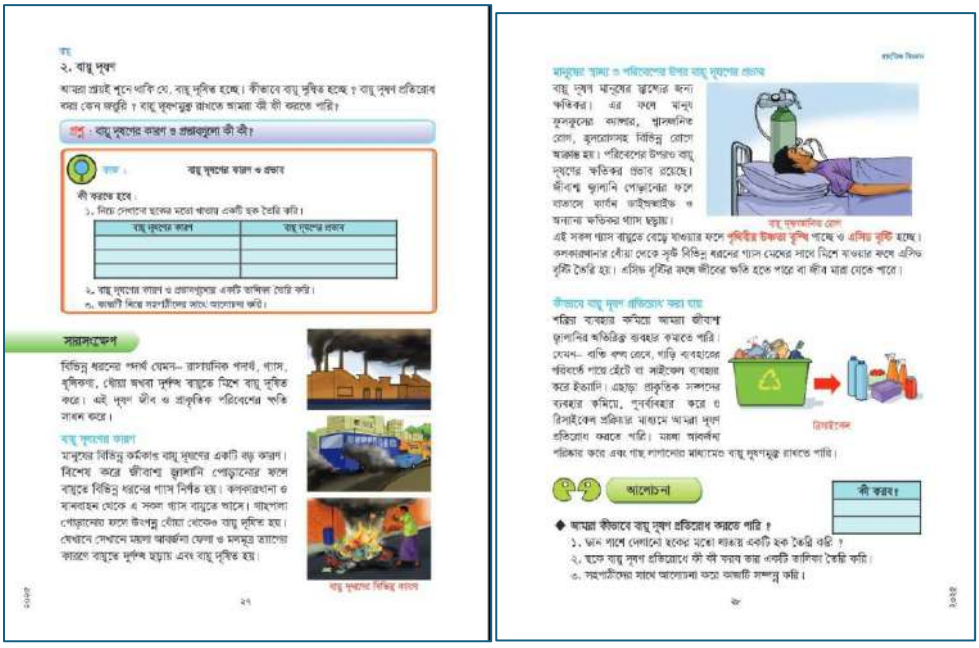


Table 5: SPS embedded and attempted in the observed lesson from Case 1.

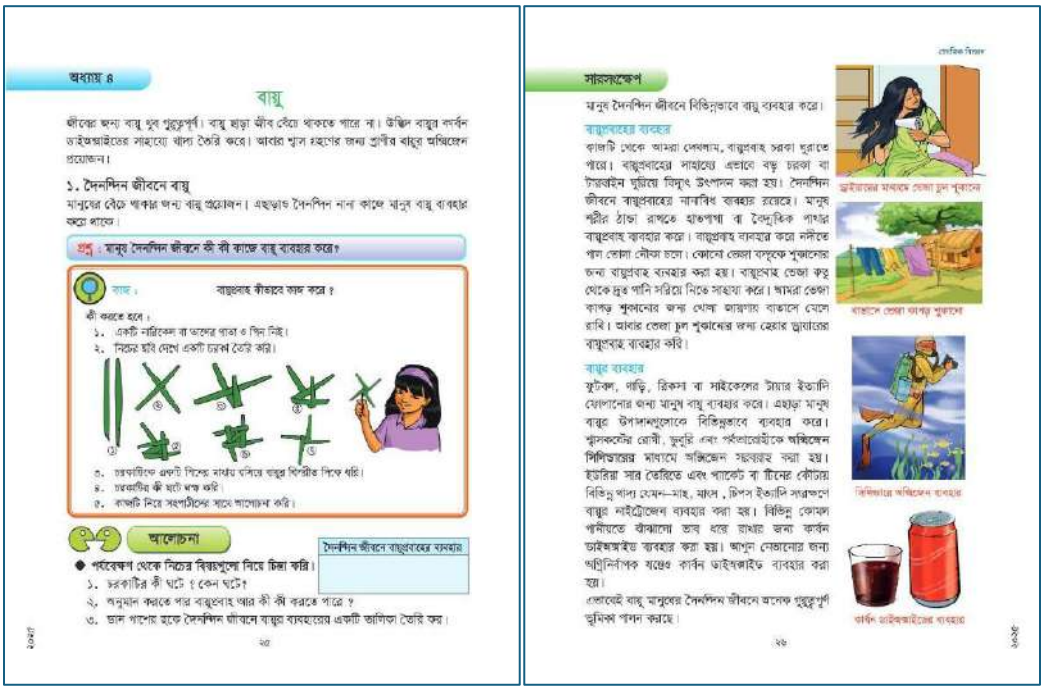
1st lesson		2nd lesson		3rd lesson	
Intended SPS	**Implemented SPS**	**Intended SPS**	**Implemented SPS**	**Intended SPS**	**Implemented SPS**
observing	×	Observing	×	Observing	×
communicating results,	×	Communicating result	×	Communicating result	×
predicting,	×	predicting	✓	predicting	×
controlling variables,	×	controlling variables	×		
Experimenting	×	experimenting	×		
interpreting data	×	inferring,	×		

During the interview, he mentioned some of the purposes of teaching science at primary level. According to him, the purposes are to make students scientific minded, to make them competent for the fourth industrial revolution, make them capable of using science in daily life and to develop their understanding of the environment. The student, according to him, will become scientific minded by observing the surroundings and by using scientific knowledge in their life. Here he mentioned observation as an important skill for students. He heard about science process skills in subject-based training but was unable to mention the skills. He asserted that the students could achieve the purposes and skills which he mentioned earlier in most of his classes. However, in some classes, he faced some challenges. Lacking scientific equipment like microscopes and models is one of the major challenges. He was unable to identify any process skills from the lessons of the textbook. Each of the lessons in 5th grade started with activity. He told us that he tries to do all the experiments in classes. Where there are other activities other than experiments, he teaches the students the concept first, then asks them to complete the activity. He believes that it makes the task easier for students. Otherwise, the students will not be able to complete the task properly because of lacking prior knowledge.

Case 2

In her first class, case 2 taught the mechanism and the use of air flow. There was an activity in that lesson where students were supposed to learn the mechanism of air flow by making a spinning wheel and eventually develop observing, communicating, inferring and predicting skills. At one stage the teacher showed the students a pre-made spinning wheel and provided

materials to the students to make the spinning wheel themselves. After making the spinning wheel, students were observing what would happens when they placed the wheel opposite the air flow. However, the teacher did not instruct them to communicate the result with their classmates. As a result, only a few students were communicating the results. The teacher was supposed to ask the students the reason for the wheel spinning which would help them in developing inferring skills. The teacher did not do that; therefore, the students had no scope to infer. After that the teacher asked them to predict more use of air flow, but before doing that activity, the teacher had lectured on the probable use of air flow. Therefore, that was not a prediction for students anymore. It happened because of a improper sequence of teaching. The teacher was supposed to make the students complete the activity first, then move towards the elaboration, but the teacher had done the opposite.


অধ্যায় ৪

বায়ু

জীবের জন্য বায়ু খুব গুরুত্বপূর্ণ। বায়ু ছাড়া জীব বেঁচে থাকতে পারে না। উদ্ভিদ বায়ুর কার্বন ডাইঅক্সাইডের সাহায্যে খাদ্য তৈরি করে। আবার শ্বাস গ্রহণের জন্য প্রাণীর বায়ুর অক্সিজেন প্রয়োজন।

১. দৈনন্দিন জীবনে বায়ু

মানুষের বেঁচে থাকার জন্য বায়ু প্রয়োজন। এছাড়াও দৈনন্দিন নানা কাজে মানুষ বায়ু ব্যবহার করে থাকে।

প্রশ্ন : মানুষ দৈনন্দিন জীবনে কী কী কাজে বায়ু ব্যবহার করে?

বায়ুপ্রবাহ কীভাবে কাজ করে ?

কী করতে হবে :

১. একটি নারিকেল বা তালের পাতা ও পিন নিই।

২. নিচের ছবি দেখে একটা চরকা তৈরি করি।

৩. চরকাটিকে একটি সিমেন্ট বসিয়ে বায়ুর বিপরীতে দিকে ধরি।

৪. চরকাটির কী ঘটে লক্ষ করি।

৫. কাজটি নিয়ে সহপাঠীদের সাথে আলোচনা করি।

আলোচনা

দৈনন্দিন জীবনে বায়ুপ্রবাহের ব্যবহার

◆ পর্যবেক্ষণ থেকে নিচের বিষয়গুলো নিয়ে চিন্তা করি।

১. চরকাটির কী ঘটে ? কেন ঘটে?

২. অনুমান করতে পার বায়ুপ্রবাহ আর কী কী করতে পারে ?

৩. তাল গাছের মতো দৈনন্দিন জীবনে বায়ুর ব্যবহারের একটি তালিকা তৈরি কর।

সারসংক্ষেপ

মানুষ দৈনন্দিন জীবনে বিভিন্নভাবে বায়ু ব্যবহার করে।

বায়ুপ্রবাহের ব্যবহার

কালটি থেকে আমরা দেখলাম, বায়ুপ্রবাহ সরাসরি ঘুরাতে পারে। বায়ুপ্রবাহের সাহায্যে এভাবে বড় চরকা বা টারবাইন ঘুরিয়ে বিদ্যুৎ উৎপাদন করা হয়। দৈনন্দিন জীবনে বায়ুপ্রবাহের নানাবিধ ব্যবহার রয়েছে। মানুষ শরীর ঠান্ডা রাখতে হাতপাখা বা বৈদ্যুতিক পাখার বায়ুপ্রবাহ ব্যবহার করে। বায়ুপ্রবাহ ব্যবহার করে নদীতে পাল তোলা নৌকা চলে। কোনো ভেজা বস্তুকে শুকানোর জন্য বায়ুপ্রবাহ ব্যবহার করা হয়। বায়ুপ্রবাহ ভেজা কাপড় থেকে দ্রুত পানি সরিয়ে নিতে সাহায্য করে। আমরা ভেজা কাপড় শুকানোর জন্য খোলা জায়গায় বাতাসে মেলে রাখি। আবার ভেজা চুল শুকানোর জন্য হেয়ার ড্রায়ারের বায়ুপ্রবাহ ব্যবহার করি।

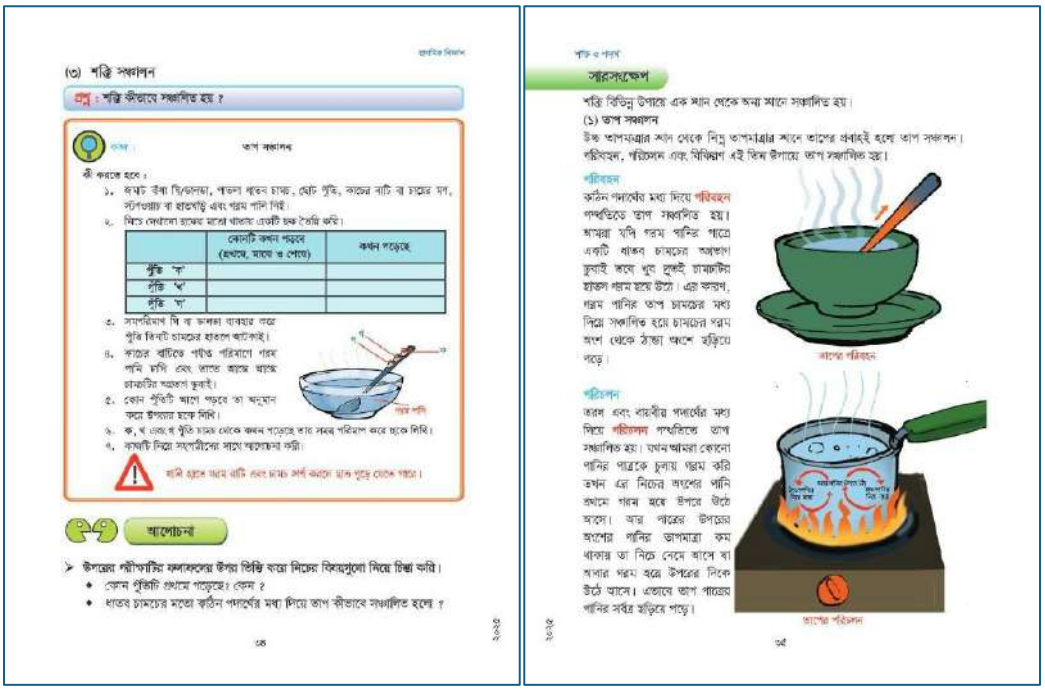
বায়ুর ব্যবহার

ফুটবল, গাড়ি, রিকশা বা সাইকেলের টায়ার ইত্যাদি ফোলানোর জন্য মানুষ বায়ু ব্যবহার করে। এছাড়া মানুষ বায়ুর উপাদানগুলোকে বিভিন্নভাবে ব্যবহার করে। শ্বাসকষ্টের রোগী, ডুবুরি এবং পর্বতারোহীকে অক্সিজেন সিলিন্ডারের মাধ্যমে অক্সিজেন সরবরাহ করা হয়। ইউরিয়া সার তৈরিতে এবং প্যাকেট বা টিনের কৌটায় বিভিন্ন খাদ্য যেমন—মাছ, মাংস, চিপস ইত্যাদি সংরক্ষণে বায়ুর নাইট্রোজেন ব্যবহার করা হয়। বিভিন্ন কোমল পানীয়তে বাঁঝালো ভাব ধরে রাখার জন্য কার্বন ডাইঅক্সাইড ব্যবহার করা হয়। আগুন নেভানোর জন্য অগ্নিনির্বাপক যন্ত্রেও কার্বন ডাইঅক্সাইড ব্যবহার করা হয়।

এভাবেই বায়ু মানুষের দৈনন্দিন জীবনে অনেক গুরুত্বপূর্ণ ভূমিকা পালন করছে।

In her second class, she taught two types of heat transmission- conduction and convection. In that class, she showed two experiments. She poured hot water into a pot and kept a tablespoon in it. Then she instructed some students to touch the tablespoon and asked if they were feeling hot or not. Again, she showed the convection process with the help of a pot, water and heat. She also asked some of the students to observe the process. In both cases only some of the students had the opportunity to observe. However, all the students were supposed to do the experiment themselves, following the procedure suggested in the textbook. Thus, they would find scope to develop some process skills-predicting, measuring, communicating, inferring.

However, because of the way teachers delivered the lesson, the students only got room to develop their observation skills.



In her third class the teacher taught water cycles. She explained the cycle with the help of a picture. There was an activity where students were supposed to do an experiment to prove the existence of water in the air. Predicting, communicating results, observing, controlling variables, experimenting were the skills embedded in that activity. However, the students did not find any scope to develop those skills as the teacher did not instruct them to complete the activity.

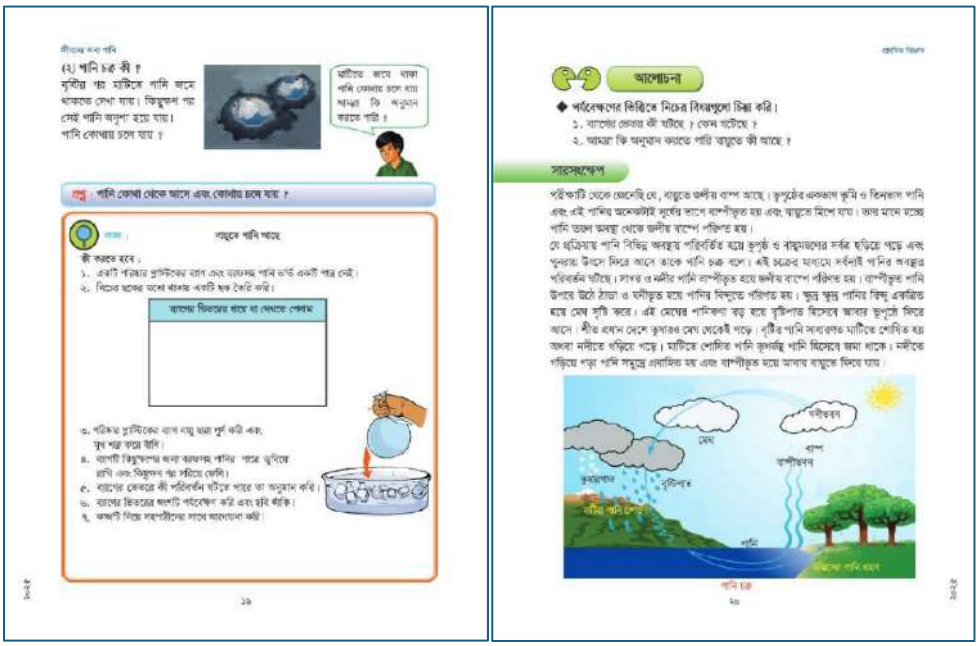


Table 6: SPS embedded and attempted in the observed lesson from Case 2.

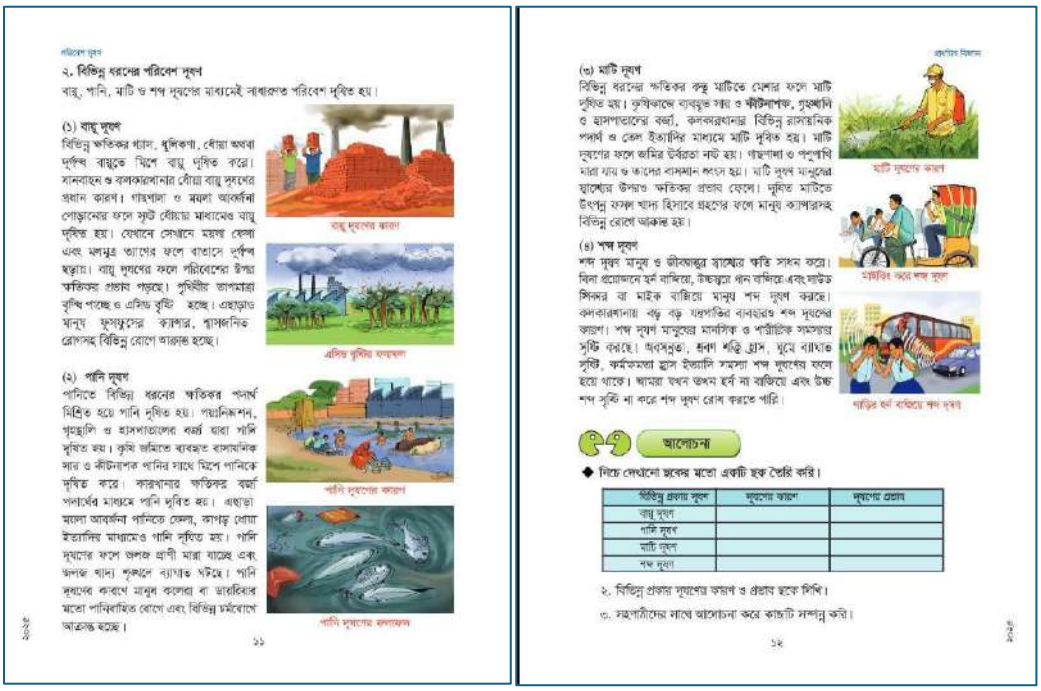
1st lesson		2nd lesson		3rd lesson	
Intended SPS	**Implemented SPS**	**Intended SPS**	**Implemented SPS**	**Intended SPS**	**Implemented SPS**
observing	✓	observing	✓	observing	×
communicating results	✓	communicating results	×	communicating results	×
inferring	×	inferring	×	experimenting	×
predicting	×	predicting,	×	Predicting	×
		measuring	×	controlling variables	×

When asked, during the interview, about the purpose of science teaching at a primary level, she said that there are some purposes. These are providing students with basic concepts regarding scientific phenomena, informing them about the use of science in their daily life and developing their understanding of information technology. When asked about scientific skills, she was unable to mention any skills or process skills. She was also unable to identify the process skills in the lessons she had taught. She asserted that she had very little experience teaching science. In her previous workplace, she never taught science. She has no training in science because of that issue. She had studied science only in her ssc. When asked if she provided students with scope to do the activities in the lessons, she acknowledged not doing the activities in each lesson. She asserted that it is difficult to get materials for doing the experiments. In case of activities other than experiments, she instructs the students to complete the activity after describing the concept herself in the lessons. She mentioned some reasons for not doing the activities at the beginning of the lessons. These are time consumption, classroom management issues, students' reluctance for not participating well enough etc. She told that, "it is easier for my students if I explain the concepts first, then ask them to complete the tables.''

Case 3

Case 3 has honors and masters in Bangla and was a student of arts in her SSC and HSC. She has fifteen years of experience in teaching science. She has received training in science twice. In her first class, she taught different types of environmental pollution to her students. She taught the causes and impact of two types of environmental pollution- air pollution and water pollution. In that lesson, there was scope for students to develop the skill- communicating results by doing an activity. They were supposed to complete a table first and then communicate

the result with their classmates. The teacher only instructed them to complete the task individually. Some students were communicating result, but there was not any formal instruction from the teacher. If there were any formal instruction from the teacher, all the students might get a better chance of developing that skill.



২. বিভিন্ন ধরনের পরিবেশ দূষণ

বায়ু, পানি, মাটি ও শব্দ দূষণের মাধ্যমেই সাধারণত পরিবেশ দূষিত হয়।

(১) বায়ু দূষণ

বিভিন্ন ক্ষতিকর গ্যাস, ধূলিকণা, ধোঁয়া অথবা দূষিত বায়ুতে মিশে বায়ু দূষিত করে। যানবাহন ও কলকারখানার ধোঁয়া বায়ু দূষণের প্রধান কারণ। গাছপালা ও ময়লা আবর্জনা পোড়ানোর ফলে সৃষ্ট ধোঁয়ায় মাধ্যমেও বায়ু দূষিত হয়। যেখানে সেখানে ময়লা ফেলা এবং মলমূত্র ত্যাগের ফলে বাতাসে দুর্গন্ধ ছড়ায়। বায়ু দূষণের ফলে পরিবেশের উপর ক্ষতিকর প্রভাব পড়ছে। পৃথিবীর তাপমাত্রা বৃদ্ধি পাচ্ছে ও এসিড বৃষ্টি হচ্ছে। এছাড়াও মানুষ ফুসফুসের ক্যান্সার, শ্বাসজনিত রোগসহ বিভিন্ন রোগে আক্রান্ত হচ্ছে।

বায়ু দূষণের কারণ

এসিড বৃষ্টির ক্ষতিকারক

(২) পানি দূষণ

পানিতে বিভিন্ন ধরনের ক্ষতিকর পদার্থ মিশ্রিত হয়ে পানি দূষিত হয়। পয়ঃনিষ্কাশন, গৃহস্থালি ও হাসপাতালের বর্জ্য দ্বারা পানি দূষিত হয়। কৃষি জমিতে ব্যবহৃত রাসায়নিক সার ও কীটনাশক পানির সাথে মিশে পানিকে দূষিত করে। কারখানার ক্ষতিকর বর্জ্য পদার্থের মাধ্যমে পানি দূষিত হয়। এছাড়া ময়লা আবর্জনা পানিতে ফেলা, কাপড় ধোয়া ইত্যাদির মাধ্যমেও পানি দূষিত হয়। পানি দূষণের ফলে জলজ প্রাণী মারা যাচ্ছে এবং জলজ খাদ্য শৃঙ্খলে ব্যাঘাত ঘটছে। পানি দূষণের কারণে মানুষ কলেরা বা ডায়রিয়ার মতো পানিবাহিত রোগে এবং বিভিন্ন চর্মরোগে আক্রান্ত হচ্ছে।

পানি দূষণের কারণ

পানি দূষণের ক্ষতিকর

১১

(৩) মাটি দূষণ

বিভিন্ন ধরনের ক্ষতিকর বস্তু মাটিতে মেশার ফলে মাটি দূষিত হয়। কৃষিক্ষেত্রে ব্যবহৃত সার ও কীটনাশক, গৃহস্থালি ও হাসপাতালের বর্জ্য, কলকারখানার বিভিন্ন রাসায়নিক পদার্থ ও তেল ইত্যাদির মাধ্যমে মাটি দূষিত হয়। মাটি দূষণের ফলে জমির উর্বরতা নষ্ট হয়। গাছপালা ও পশুপাখি মারা যায় ও তাদের বাসস্থান ধ্বংস হয়। মাটি দূষণ মানুষের স্বাস্থ্যের উপরও ক্ষতিকর প্রভাব ফেলে। দূষিত মাটিতে উৎপন্ন ফসল খাদ্য হিসাবে গ্রহণের ফলে মানুষ ক্যান্সারসহ বিভিন্ন রোগে আক্রান্ত হয়।

মাটি দূষণের কারণ

(৪) শব্দ দূষণ

শব্দ দূষণ মানুষ ও জীবজন্তুর স্বাস্থ্যের ক্ষতি সাধন করে। বিনা প্রয়োজনে হর্ন বাজিয়ে, উচ্চস্বরে গান বাজিয়ে এবং লাউড স্পিকার বা মাইক বাজিয়ে মানুষ শব্দ দূষণ করছে। কলকারখানায় বড় বড় যন্ত্রপাতির ব্যবহারও শব্দ দূষণের কারণ। শব্দ দূষণ মানুষের মানসিক ও শারীরিক সমস্যার সৃষ্টি করছে। অবসাদগ্রস্ত, শ্রবণ শক্তি হ্রাস, ঘুমে ব্যাঘাত সৃষ্টি, কর্মক্ষমতা হ্রাস ইত্যাদি সমস্যা শব্দ দূষণের ফলে হয়ে থাকে। আমরা যখন তখন হর্ন না বাজিয়ে এবং উচ্চ শব্দ সৃষ্টি না করে শব্দ দূষণ রোধ করতে পারি।

মাইকিং করে শব্দ দূষণ

গাড়ির হর্ন বাজিয়ে শব্দ দূষণ

আলোচনা

◆ নিচে দেখানো ছকের মতো একটি ছক তৈরি করি।

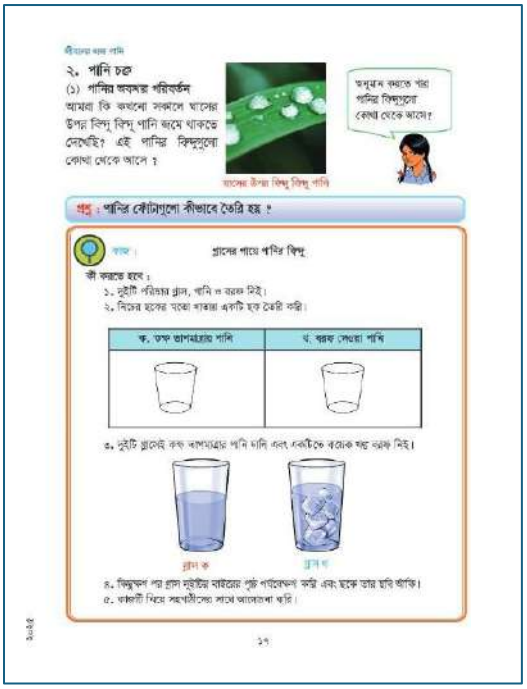
বিভিন্ন প্রকার দূষণ	দূষণের কারণ	দূষণের প্রভাব
বায়ু দূষণ		
পানি দূষণ		
মাটি দূষণ		
শব্দ দূষণ		

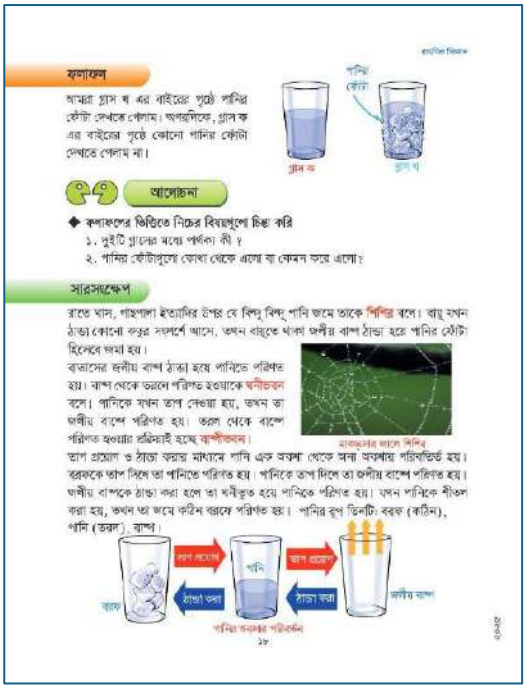
২. বিভিন্ন প্রকার দূষণের কারণ ও প্রভাব ছকে লিখি।

৩. সহপাঠীদের সাথে আলোচনা করে কাজটি সম্পন্ন করি।

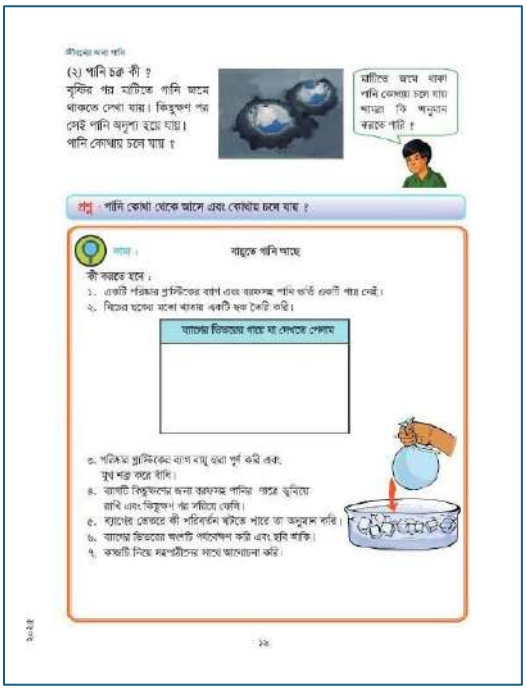
১২

In her second class, she taught various forms of water. It was the continuation of the previous lesson. In the previous class, she showed the students, as she mentioned during the interview, how did dew form outside of a glass with ice inside. The students were supposed to do the experiment themselves, but this did not happen. Now in this class, which we observed, she showed a picture of a dew and asked about the picture. Then she asked the students what they observed in the previous class what happened to the two glasses-one with and another without ice. Then she asked where the dew came from. This was an inferring opportunity for students. However, she allowed only one student to respond. Then she started explaining the process of dew formation, condition, evaporation etc.





In her third class she taught water cycle. She started by showing a picture of a water cycle and asked about the picture. Then she explained the process by herself. There was an experiment in this lesson to prove the existence of water in air. She did not attempt that activity. Therefore, students missed the opportunity to develop the process skills- predicting, communicating results, experimenting, controlling variables and interpreting. These skills were embedded in that activity.



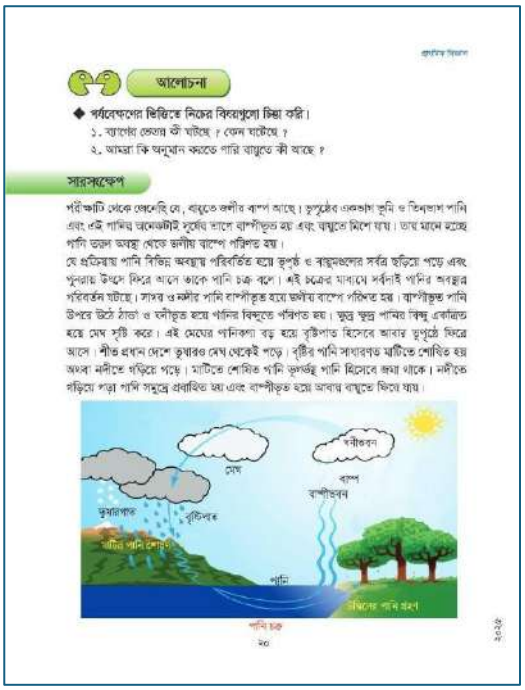


Table 7: SPS embedded and attempted in the observed lesson from Case 3

1st lesson		2nd lesson		3rd lesson	
SPS in the lesson	**Attempted**	**SPS in the lesson**	**Attempted**	**SPS in the lesson**	**Attempted**
communicating results	✓	inferring	×	communicating results	×
		experimenting	×	predicting	×
				experimenting	×
				controlling variables	×
			×	interpreting	×

She was asked during the interview about the purpose of science teaching at primary level. According to her,

> "The purpose is to make students scientific minded by eliminating superstition and by knowing the science behind each incident. The students will develop scientific minds by experimenting, observing, predicting and thinking. These are skills students will achieve. Questioning is another skill. Students will also learn about technology, basic treatments, agriculture and health".

She heard about science process skills during training but could not remember them. She is confident in achieving the targets of science teaching but in some cases, she faces problems. A Laptop and a projector provided by the government had been stolen two years ago. She told that, "Everything can't be taught by only explaining orally. I need a laptop and projector to show videos on topics like the universe, the sun, the rotation of earth etc". She also suggested visiting museums to develop students' understanding. She could not identify the process skills embedded in the lessons she taught. She asserted that she tries to attempt all the activities in the lessons. However, she thinks some activities are necessary for developing the concepts. In that she avoids some activities. In most cases, she explains the concept to students first and then asks them to complete the activity, because she believes that it is better for students' performance. Otherwise, students do not have the potential to complete the activities with their prior knowledge.

Case 4

Case 4 has honors and a master's in political science. She was a student of arts in her SSC and HSC. She has thirteen years of teaching experience in total but has been teaching science only for one and a half years. In her first class, she taught water pollution to her students. At the beginning, she took everyone to a nearby pond and asked them to observe the possible causes of pollution. The students got scope for developing their observation skills. Again, at one point, she asked everyone to write the causes, effects and prevention of water pollution in a table. She instructed them to complete the task in groups. That was an activity for developing the skill-communicating result. The students in groups discussed and completed the task. After that they presented their group work to the whole class. The teacher gave students much room for developing the 'communicating result' skill.



৩. পানি দূষণ

প্রাকৃতিক পানিতে বিভিন্ন ক্ষতিকর পদার্থ মিশে পানি দূষিত হয়। পানি দূষণ জীবের জন্য ক্ষতিকর।

পানি দূষণের কারণ

মানুষের কর্মকাণ্ডও পানি দূষণের প্রধান কারণ। কৃষিক্ষেত্রে ব্যবহৃত কীটনাশক, কলকারখানার রাসায়নিক দ্রব্য, গৃহস্থালির বর্জ্যের মাধ্যমে পানি দূষিত হয়। এছাড়া নদী বা পুকুরে গরু-ছাগল গোসল করানো এবং কাপড়চোপড় ধোয়াও করলেও পানি দূষিত হয়। পলিথিন ও প্লাস্টিকজাতীয় সামগ্রী পানিতে ফেলার কারণেও পানি দূষিত হয়।

পুকুরে গোসল করানো পানি দূষণ

মরা জীবজন্তু ফুটিয়ে পানি দূষণ রোধ

পানি দূষণের প্রভাব

পানি দূষণের ফলে জলজ প্রাণী মারা যাচ্ছে এবং জন্মও বাধা পৃথিবীর ক্ষতি হচ্ছে। এই দূষণের প্রভাব মানুষের উপরও পড়ছে। দূষিত পানি পান করে মানুষ টাইফয়েড, ডায়রিয়া বা কলেরার মতো পানিবাহিত রোগে আক্রান্ত হচ্ছে।

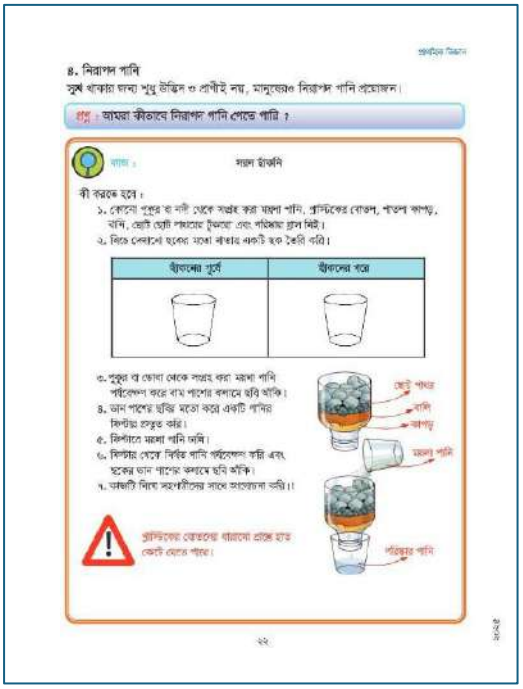
কীভাবে পানি দূষণ প্রতিরোধ করা যায় ?

কৃষিতে কীটনাশক এবং রাসায়নিক সারের ব্যবহার কমিয়ে আমরা পানি দূষণ প্রতিরোধ করতে পারি। এছাড়া রান্নাঘরের ও টয়লেটের বর্জ্য নিষ্কাশন নালায় এবং তেল না ফেলে দূষণ রোধ করতে পারি। পুকুর, নদী, হ্রদ কিংবা সাগরে মরা– আবর্জনা না ফেলে পানি দূষণ কমাতে পারি। সমুদ্রসৈকতে পড়ে থাকা মরা এবং খাল-বিল কিংবা নদীতে ভাসমান মরা আবর্জনা তুলে আমরা পানি পরিষ্কার রাখতে পারি।

আলোচনা

- আমরা কীভাবে পানি দূষণ প্রতিরোধ করতে পারি ?

১. পানি দূষণ প্রতিরোধে আমাদের করণীয় কী তা বাস্তব শিখি।
২. সহপাঠীদের সাথে আলোচনা করে কাজটি সম্পন্ন করি।



৪. নিরাপদ পানি

সুস্থ থাকার জন্য শুধু উদ্ভিদ ও প্রাণীই নয়, মানুষেরও নিরাপদ পানি প্রয়োজন।

প্রশ্ন : আমরা কীভাবে নিরাপদ পানি পেতে পারি ?

কাজ : সহজ ফিল্টার

কী করতে হবে :

১. কোনো পুকুর বা নদী থেকে সংগ্রহ করা ময়লা পানি, প্লাস্টিকের বোতল, পাতলা কাপড়, বালি, ছোট ছোট পাথরের টুকরো এবং পরিষ্কার গ্লাস নিই।
২. নিচে দেখানো ছবির মতো করে বোতলে একটি ফিল্টার তৈরি করি।

ফিল্টারের পূর্বে	ফিল্টারের পরে

৩. পুকুর বা ডোবা থেকে সংগ্রহ করা ময়লা পানি পর্যবেক্ষণ করে বাম পাশের বক্সে ছবি আঁকি।
৪. ডান পাশের ছবির মতো করে একটি পানির ফিল্টার প্রস্তুত করি।
৫. ফিল্টারে ময়লা পানি ঢালি।
৬. ফিল্টার থেকে নির্গত পানি পর্যবেক্ষণ করি এবং ফলের ডান পাশের বক্সে ছবি আঁকি।
৭. আজটি নিয়ে সহপাঠীদের সাথে আলোচনা করি।

ছোট পাথর
বালি
কাপড়
ময়লা পানি
পরিষ্কার পানি

প্লাস্টিকের বোতলের পরিবর্তে প্লাস্টিক ব্যাগ কেটে নেয়া যেতে পারে।

In her second class, she taught safe water from the chapter 'water for life'. She started by asking what safe water is. Some students responded. Then she showed some pictures and asked what these pictures are about. Then she explained some purifying process of water verbally with the help of some pictures. The students were supposed to make a simple water filter to get firsthand experience of experimenting with the process of water. Besides experimenting, they would get some scope to develop their observation, communication and controlling variables skills but that did not happen.

In her third class, the teacher taught the use of air. She started the class by asking what we use when the electricity is gone. The students replied that they use handmade fans. Then the teacher asked what we get from that handmade fan. The students replied 'air'. Then the teacher showed some pictures and asked them about these. After some responses from the students, she described the pictures. Then she provided the students with some leaves and instructed them to make a spinning wheel. The students had done so and observed how the wheels were moving by the pressure of air. The teacher did not ask why the wheels were moving. Instead, she explained to the students herself. That's how the students missed an opportunity to infer. After this the teacher instructed them to write about the other probable use of air. The students were supposed to predict. However, that's because the teacher provided the answer to this question earlier, it was not a prediction any more for the students.

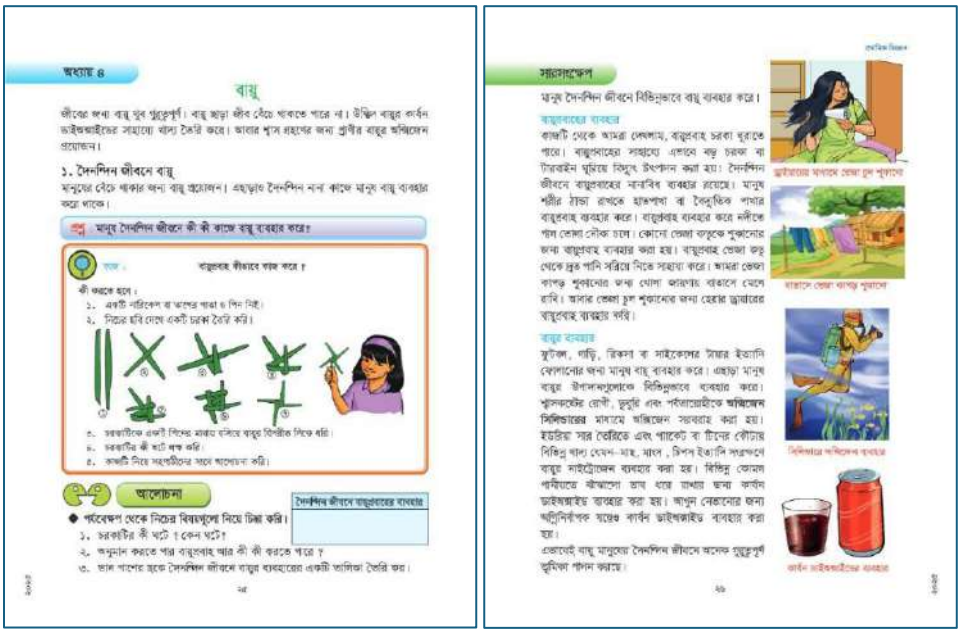


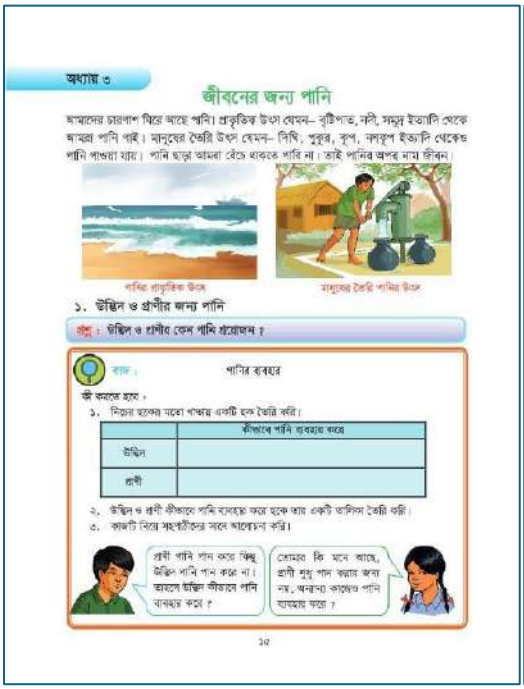
Table 8: SPS embedded and attempted in the observed lesson from Case 4.

1st lesson		2nd lesson		3rd lesson	
SPS in the lesson	**Attempted**	**SPS in the lesson**	**Attempted**	**SPS in the lesson**	**Attempted**
Observing	✓	observing	×	observing	×
Communicating result	✓	Communicating result	×	Predicting	×
		controlling variables	×	Inferring	×
		experimenting	×		

During the interview, she expressed her understanding about the purpose of science teaching at primary level. The purpose is according to her to develop the students' understanding in science so that they can use it in their life. When asked if there are any skills involved in science classes she could not mention any. She believes most her students are achieving the purpose, but some students are not capable of enough. She stated that she tries to attempt all the activities but when there are no teaching aids available some activities get missed. She ensured that she attempted the activities after developing concepts on the contents first. She explains the concept first then asks the students to complete the activities. She prefers this approach as she finds it easier. In her opinion, the students will not be able to complete the activities unless they are provided with details of the concept before.

Case 5

Case 5 has honors and masters in English. He has thirteen years of teaching experience in total but only three years of science teaching. He has received subject-based training in science. In his first class, he taught the necessity of water for plants and animals. First, she asked students 'why water is necessary for life'. Then she showed some pictures and asked them to describe them. Two students responded. After that she explained the necessities verbally to the students, then assessed students' understanding. Students were supposed to complete a table writing how plants and animals use water and then discuss with others. Therefore, there was an opportunity to develop two process skills-classify and communicating results but that did not happen.


অধ্যায় ৩

জীবনের জন্য পানি

আমাদের চারপাশ ঘিরে আছে পানি। প্রকৃতিক উৎস যেমন– বৃষ্টিপাত, নদী, সমুদ্র ইত্যাদি থেকে আমরা পানি পাই। মানুষের তৈরি উৎস যেমন– দিঘি, পুকুর, কূপ, নলকূপ ইত্যাদি থেকেও পানি পাওয়া যায়। পানি ছাড়া আমরা বেঁচে থাকতে পারি না। তাই পানির অপর নাম জীবন।

প্রকৃতিক উৎস

মানুষের তৈরি পানির উৎস

১. উদ্ভিদ ও প্রাণীর জন্য পানি

প্রশ্ন : উদ্ভিদ ও প্রাণীর কেন পানি প্রয়োজন ?

কাজ : পানির ব্যবহার

তা করতে হবে :

১. নিচের ছকের মতো পাশের একটি ছক তৈরি করি।

	কীভাবে পানি ব্যবহার করে
উদ্ভিদ	
প্রাণী	

২. উদ্ভিদ ও প্রাণী কীভাবে পানি ব্যবহার করে ছকে তার একটি তালিকা তৈরি করি।

৩. কাজটি নিয়ে সহপাঠীদের সঙ্গে আলোচনা করি।

প্রাণী পানি পান করে কিন্তু উদ্ভিদ পানি পান করে না। তাহলে উদ্ভিদ কীভাবে পানি ব্যবহার করে ?

তোমরা কি মনে করো, প্রাণী শুধু পান করার জন্য নয়, অন্যান্য কাজেও পানি ব্যবহার করে ?

১৫


সারসংক্ষেপ

জীবের জন্য পানি অত্যন্ত প্রয়োজনীয়। পানি ছাড়া জীব বাঁচতে পারে না।

উদ্ভিদ

উদ্ভিদের বেঁচে থাকার জন্য পানি প্রয়োজন। উদ্ভিদের দেহের প্রায় ৯০ ভাগ পানি। উদ্ভিদ খাদ্য তৈরিতেও পানি ব্যবহার করে। উদ্ভিদ মূলের মাধ্যমে মাটি থেকে পানির সাথে প্রয়োজনীয় পুষ্টি উপাদান শোষণ করে। এছাড়া পুষ্টি উপাদান কাণ্ড ও অন্যান্য অংশে পরিবহন করতে পানির প্রয়োজন হয়। প্রচণ্ড গরমে পানি উদ্ভিদকে সতেজ রাখতে সাহায্য করে।

সূর্যালোক
অক্সিজেন
কার্বন ডাইঅক্সাইড
খনিজ লবণ
পানি
খাদ্য তৈরিসহ নানা কাজে উদ্ভিদ পানি ব্যবহার করে

প্রাণী

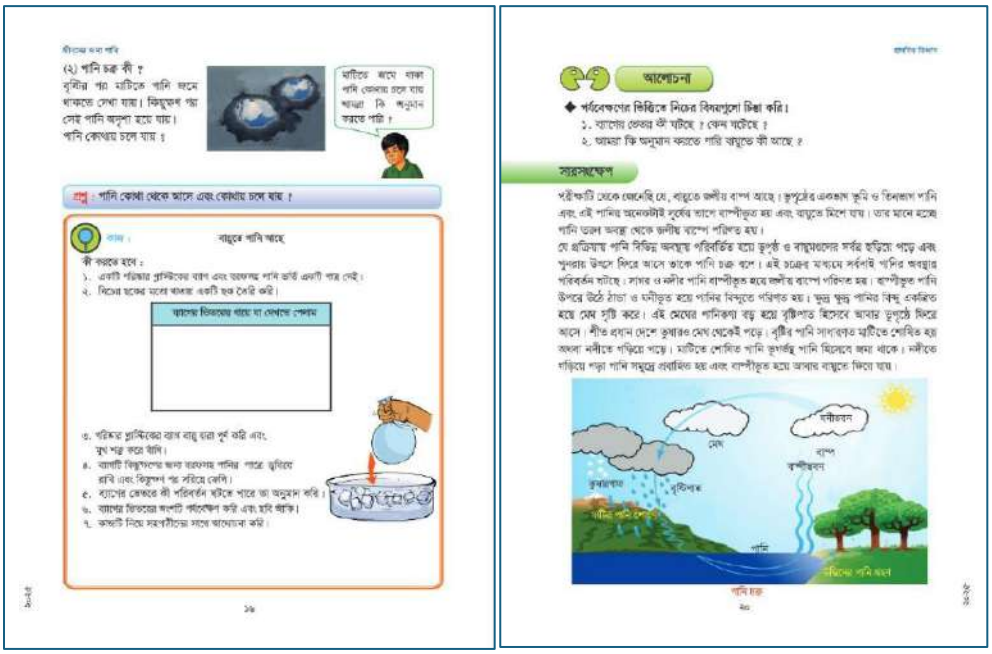
বেঁচে থাকার জন্য প্রাণীদেরও পানি প্রয়োজন। মানবদেহের ৬৩–৭০ ভাগ পানি। পানি ছাড়া কোনো প্রাণীই বেঁচে থাকতে পারে না। আমরা যখন খাদ্য গ্রহণ করি তখন পানি সেই খাদ্য পরিপাকে সাহায্য করে। পুষ্টি উপাদান শোষণ ও দেহের প্রত্যেকটি অঙ্গে পরিবহনের জন্য পানি প্রয়োজন। পানি আমাদের দেহের স্বাভাবিক তাপমাত্রা বজায় রাখতে সাহায্য করে।

দেহের বিভিন্ন অংশে পুষ্টি উপাদান পরিবহনে সাহায্য করে
দেহে পুষ্টি উপাদান শোষণে সাহায্য করে
খাদ্য পরিপাকে সাহায্য করে
দেহের তাপমাত্রাকে স্বাভাবিক রাখতে সাহায্য করে

বেঁচে থাকার জন্য আমাদের পানি প্রয়োজন

১৬

In his second class, the content was water cycle. He showed a picture of the water cycle and asked students to describe that but only allowed one student to respond. Then he explained the whole process with the help of that teacher. He asked some questions during the explanation. Then he assessed students' learning by asking more questions. He did not attempt the experiment in that lesson. That's why the students missed an opportunity to develop some important science process skills like experimenting, predicting, controlling variables.



He taught the use of air in his third class. He started the class by asking if the students could feel the air around them. Then he pointed towards the fan in the room and asked what they get from that. Then he showed a spinning wheel made of a leaf and kept it under a fan. He explained how the wheel was moving because of the air. Then he mentioned many other uses. After that he asked the students to write about the uses of the air he discussed with some extra points from students' understanding. The students were supposed to make wheels themselves and discussed how the wheels move. Observing, communicating results, predicting, inferring and experimenting were the process skills they would develop. This activity was missing in the class.

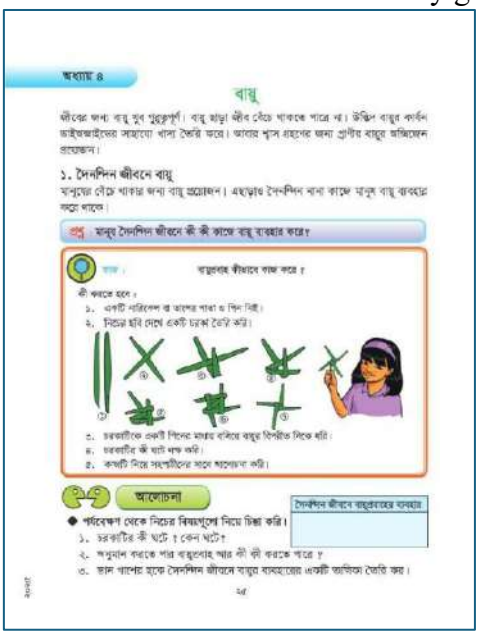


Table 9: SPS embedded and attempted in the observed lesson from Case 5.

1st lesson		2nd lesson		3rd lesson	
Intended SPS	**Implemented SPS**	**SPS in the lesson**	**Attempted**	**SPS in the lesson**	**Attempted**
Classification	×	predicting	×	Observing	×
Communicating result	×	experimenting	×	experimenting	×
		controlling variables	×	communicating results	×
			×	predicting	×
				inferring	×

The teacher expressed his view regarding the purpose of science teaching at primary level. The purpose according to him is to develop students' science concepts, their thinking and observation skills. He did not hear about any science process skills in any training and could not identify any skills from the lessons he taught. He stated that he tries to attempt all the activities in the lessons but misses some due to time constraints. Some activities according to him cannot be completed within the lesson time. That's why he ignored some activities and explained the concepts himself to the students. He acknowledged that before completing the activities, he usually develops students' science concepts. Otherwise, his students cannot complete the activities if they don't get any concept. He believes the approach to be more effective.

Cross case analysis

Teachers' effectiveness in transforming intended SPS into implemented SPS

Among the 15 classes observed, there was no activity performed in 9 classes, neither by teacher nor the students. The participant teachers were explaining the concepts themselves. Lecturing was the preferred way of teaching in those classes. In some classes, teachers used picture for explaining the concepts. In two classes, teachers demonstrated the activity themselves. The students were only observing. However, it is instructed in textbook that the students will complete the activities so that they can develop SPS. In two classes, the students attempted the lesson activities, but due to improper sequence of teaching, they missed opportunity to develop

some SPS. Therefore, it can be said that the participant teachers were ineffective in transforming the intended SPS into implemented SPS in classroom practice.

Challenges in transforming intended SPS into implemented SPS

All the participant teachers were unable to describe properly the purpose of science teaching in primary level. They described the purpose as developing science content knowledge. Developing knowledge on surrounding environment and technology were the main focus of their response. Two teachers mentioned of developing one or two process skills as the purpose. A common response from both the teachers were mentioning of observation as a purpose of science teaching. Therefore, their lack of understanding on SPS has been found as an important challenge.

Another important challenge is their behaviorist view of teaching. Four out of five participant teachers believed that they should explain the concepts first. Otherwise, their students cannot complete the activities of the lessons. One teacher entailed that, “the students in primary level are not capable enough. How could they be able to complete the activities themselves if I don’t explain the concept first”. Another teacher responded that, “When I explain the concepts first, it helps them to complete the activities. I think it is a more effective way for science classes. Therefore, this behaviorist belief of teaching is a great challenge in developing students SPS.

Chapter 5: Discussion

Discussion

This study found the basic process skills are dominated in science lessons at 5th grade. communicating results got the most focus followed by observing and inferring. Activities in the textbook have scope for developing integrated process skills like experimenting and controlling variables. Formulating hypotheses, defining operationally and formulating models are the skills neglected. These findings are consistent with the study conducted by Chakraborty and Kidman (2021).

The participant teachers were not effective in developing students' SPS. The activities in the lessons observed were not attempted by these teachers appropriately and they were not consistent in all the classes observed. There was experimental activity in nine out of the fifteen classes observed. Only three experiments were attempted in the class but not according to the instructions of the textbook. Therefore, the students missed the opportunity to develop SPS. Where there were activities other than experiments, the teachers instructed the students to complete those activities but after explaining themselves. That was not appropriate in terms of developing SPS. The participant teachers preferred to explain the contents verbally first and then asked the students to complete the activities. In seven classes, the activities were not attempted at all.

All the participant teachers viewed science knowledge development rather than process skills development as the purpose of science teaching at primary level. Although two of the teachers mentioned developing students' scientific minds but were unable to describe properly how the students would achieve that. Observation, thinking and experimenting were viewed by these teachers as a way to develop scientific minds. However, the sole purpose of science teaching at primary level in Bangladesh is to develop students' scientific literacy by developing their SPS (NCTB, 2010). All the participant teachers lack knowledge of SPS. Only two teachers mentioned observation as an important skill for students. None of the teachers were able to identify any skills except observation from the lessons in the textbook. The lessons in the 5th grade textbook are designed in such a way that the students will develop SPS as well as the concepts by doing activities themselves. However, all the participant teachers preferred to deliver the concepts themselves first and then allow the students to complete the activities. They believe this approach to be more effective than giving students scope to develop

themselves. This traditional behaviorist belief of teaching is not consistent with modern constructivism.

Conclusion

Basic science process skills are dominant in the national science textbook at 5th grade. More specifically, there is a clear emphasis on communicating results, inferring and observing. However, the scope for developing students' SPS was narrow. The participant teachers were not using the activities well enough for developing students' SPS. The students were supposed to develop their SPS by completing the activities themselves but missed the opportunity because of the teacher's tendency to explain the concepts themselves verbally. This preference of traditional approach hindered students' opportunity. They don't prefer to give scope to students to learn by doing. That's why they were not following the instructions of the textbook. Besides, the participant teachers lack knowledge and understanding of science process skills as they were unable to identify the skills embedded in the lessons disrespect of gender, teaching experience or academic qualifications.

Implications

This study has great implications for curriculum planners, writers, teacher educators and teachers. Curriculum planners and writers may consider giving emphasis on all the SPS in designing future curriculum and textbooks. Teacher educators can focus on training programs in enabling trainee teachers to develop their understanding and teaching capacity on SPS. Teachers may consider the issue and rethink their classroom practice.

Limitations

There are some potential limitations of this study. One is that the findings of this study cannot be generalized for all the teacher's teaching science in Bangladesh. We only intended to get an in-depth situation of some of the cases. Another limitation is that we gathered data only in February and April, therefore we could not observe the lessons from all parts of the textbook.

Further study

A country wide study can be done to get a generalized picture of the situation of science classes in Bangladesh. Science process skills embedded in the national textbooks across the grades may be explored. Teachers' practice in science classes across different grades is another area of study. How and to what extent the teachers are getting training on the issue may be an

interesting area. Besides, the views of policy makers, curriculum planners and writers may also be explored.

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Annex 1: observation schedule

Criteria	Yes/no	How
1. Does the teacher complete the activities of the lesson by the students?		
2. Does the teacher follow the instruction of lesson activities?		
3. Does the teacher give enough room to students for developing SPS?		
4. Does the timing of activities consistent with the intention of lesson design?		
5. Does the teaching transform into students SPS development?		

Annex 2: Interview schedule

1. What is the purpose of science teaching at primary level of Bangladesh?
2. What do you know about science process skills?
3. Do you think it is important to develop science process skills among primary students? Why do you think so?
4. Were you aware of the science process skills in the lessons you taught?
5. Do you feel any challenges in developing science process skills among primary students?
6. Do you have any suggestions to overcome those challenges?

A Study Report
On

Understanding Parental Preferences and Decision-Making in Choosing Primary School

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Understanding Parental Preferences and Decision-making in Choosing Primary School

Abstract

The study explores the factors that influence parents' choices when select primary schools in Munshiganj, Bangladesh. A mixed-method design combining a structured questionnaire and an open-ended response, was employed in the study. Data was collected from 378 respondents across all six upazilas using convenience sampling technique. Both descriptive and inferential statistics were used to explore quantitative data. Thematic analysis was adopted to examine qualitative data.

Teacher quality, school reputation, and community trends ranked highest in descriptive analysis, whereas recommendations, school fees and stipend programs ranked lowest. Inferential analysis showed that low ranked factors like cost and stipend programs had significant correlation with school choice, while highly rated factors like teacher quality and reputation had weak associations. Qualitative data underlined religious sentiment, joyful and stress-free environments, and English language as key decision drivers.

In general, the study depicts that although parents often emphasized the importance of quality when choosing a school, their final decisions were more strongly influenced by cost and ease of accessibility to institutions. To address this, the study recommends a balance between affordability and quality, strengthening existing stipend program and ensuring convenient school location for the children of certain communities.

Key words: Parental Perception, School choice, Primary Education

1. Introduction

Primary education is the foundational stage of a student's life for shaping their future by laying the groundwork for academic success, social integration and emotional well-being. Early years of schooling are considered globally as the most critical and important period of time for developing basic literacy, numeracy and social skills. Every country tries to design its primary education system in such a way that it can develop a generation who are knowledgeable and polite in behavior. Bangladesh is also giving major importance to primary education as the means of national development, social mobility and poverty reduction. Government has made significant efforts to ensure the best enrollment rate in primary school and to focus on quality primary education by taking some necessary steps. In 1972, Article 17 of the Constitution of Bangladesh included the issue of free and compulsory primary education. To implement that goal, 36,165 primary schools were nationalized and 1,57,165 teachers were nationalized in 1973. In continuation of that 26,193 registered private and community primary schools along with 1,04,000 teachers were nationalized in 2013 in order to further accelerate primary education. (ম ো ঃ আবু হারেছ et al., 2024). Government has taken many steps including free and compulsory primary education for government primary schools since 1993 (Rabbi, 2008). Along with GPS, Bangladesh has about ten types of educational institutes providing primary education (BANBEIS, 2024). The recent APSC report, 2023 of the Ministry of Primary and Mass Education (DPE, MoPME, 2024) indicates that the enrollment rate in private educational institutes is increasing at a significant rate. Though state is trying to make a positive change in elementary education of Bangladesh, disparities still exist in teacher quality, proper potential assessment system and school infrastructures. These disparities influence parents' decisions in selecting primary schools for their children.

In the context of Bangladesh especially in Munshiganj, parents' decisions in selecting primary school for their children is shaped with different factors. These include socio-economic status, educational background, occupation and geographical setting. Moreover, factors like quality of teaching, location of the school, fees of school, community recommendations and social and religious values also play a substantial role in school selection.

This study aims to explore the attitudes and perceptions of parents in Munshiganj when selecting primary schools for their children by analyzing the intention and priorities of parents from different socio-economic culture and geographical backgrounds. This research tries to find the key determinants influencing school choice in semi urban and rural areas. The findings

are expected to give an insight to the policy makers to improve primary-level educational institutions. It will also help the educators to address the inequalities and improve access to quality primary education in Munshiganj.

Literature Review

School choice has become a significant focus within the economics of education, demonstrating a rising global emphasis on parental involvement and educational reform (Bosetti, L. 2004; Masaiti et al., 2021). Proponents of school choice claim that it can improve public education by encouraging competition among schools, resulting in improved effectiveness, productivity, and service, and ultimately, a better education.(Masaiti et al., 2021). This competition encourages schools to concentrate about what parents and students are looking for and provide a wide range of offerings for different parents (Masaiti et al., 2021).

1.1 Theoretical Foundations of School Choice

Some of the literature regarding school choice focuses on Rational Choice Theory and Free Market Theory. Rational choice theory is that parents are individuals who make decisions based on particular preferences, assessments of costs, benefits, and probabilities of success for different choices (Masaiti et al., 2021). They are expected to look out for the best for their kids and can get local schools and teachers to do what they want. Some studies, on the other hand, say that parents' decisions are more complicated because they are based on a "mixture of rationalities" that includes random or chance events, personal values, and getting information from social and professional networks. Access to useful and relevant information through these networks is what makes informed decisions necessary (Bosetti, L. 2004).

According to Free Market theory, a system of school choice that fosters competition among schools for students' admission would make them more receptive to the needs and interests of parents and students by offering different programs for various types of family. This competition would also increase school productivity, effectiveness, and service, which would raise the standard of education. This approach treats families as consumers, and schools are held accountable to enrolled and potentially enrolled families. (Masaiti et al., 2021)

1.2 Key Determinants of School Choice

Parents choose schools for their children depending on various significant determinants: **Academic Quality and Performance:** Parents around the world are extremely concerned about academic quality and performance of the institute (Masaiti et al., 2021). Some recent studies show that decisions are heavily influenced by perceived learning outcomes and academic reputation. Some parents consider standardized test scores, graduation rates, and college acceptance as measures of academic quality (Alothman et al., 2024). Parents' primary consideration when selecting schools in urban Zambia was found to be academic performance (Masaiti et al., 2021). In Bangladesh, parents of students attending private kindergarten schools (PKGS) expressed greater satisfaction with academic factors than parents of students attending government primary schools (GPS) (Kamrujjaman & Obaydullah, 2021).

Moral and Religious Values: These values are crucial for many parents, as they seek schools that align with their lifestyle, religious, philosophical, and political beliefs(Bosetti L, 2004). In Saudi Arabia, moral, cultural and religious values, including gender segregation and the emphasis on Islamic religious education, emerged as predominant factors (Alothman et al., 2024).

Socio-economic Status (SES) and Parental Education: Hofflinger et al., (2020), as cited in Alothman et al., 2024 found that parents from lower socioeconomic status are more likely to prioritize proximity to school for children, whereas parents with higher socioeconomic status tend to prioritize quality and religious education. In Bangladesh, more educated parents with smaller families were observed to choose private kindergarten schools (Kamrujjaman & Obaydullah, 2021).

Location and Fees: Plenty of literature show the location of school as a significant consideration for parents when choosing a school to minimize commuting time and ensure convenience(Bosetti L, 2004). Similar study done by Alothman et al., (2024) in Saudi Arabia also shows physical location of the school is a significant factor. Alongside, traffic, and transportation were significant accessibility factors according to that study. School fees are also a crucial determinant, particularly for families with limited financial resources.

School Environment and Facilities: Parents consider the quality of the school's overall environment, including school size, cleanliness, reputation, surroundings and the school's ethos. Parents believe that a positive environment, modern facilities and diverse co-curricular

activities enhance their children's educational experience and overall wellbeing (Blake and Mestry, 2020 as cited in Alothman et al., 2024). In Bangladesh, parents of both GPS & PKGS going children emphasized the safe environment and physical facilities of the school as dominating elements, while PKGS parents are more satisfied with their school's environment and cleanliness compared to GPS parents (Kamrujjaman & Obaydullah, 2021).

Beside all the dominents parents consider more factors like smaller class sizes. It's be been a significant preference for positive impact on learning in different study (Shin and Chung, 2009 as cited in Alothman et al., 2024). In Bangladesh, parents of PKGS students were tend to be more satisfied than parents of GPS students. Teacher quality and cordiality are crucial factors for parents. Parents consider qualifications, professionalism, and a supportive teaching approach. Private kindergarten school teachers are more approachable compared to govt. primary school (GPS) teachers (Kamrujjaman & Obaydullah, 2021).

Parents, especially those who have limited access to professional network, influenced by the recommendations of family and friends (Bosetti, L. 2004). Child wellbeing that includs happiness, psychological security, soft skills and critical thinking plays an important role in parents' decision (Alothman et al., 2024).

Last but not the least, social standing and respect inspire parents' decisions in selecting institutions as private or prestigious institutions can serve as a symbol of status and enhance family standing. In the context of Bangladesh, rich families tend to consider PKGS partly due to this issue (Kamrujjaman & Obaydullah, 2021).

1.3 Research Gap

Although many studies have looked at why parents choose certain schools—focusing on academic quality, reputation, moral values, socio-economic status, location, and facilities, - very few have explored these decisions in semi-urban or rural areas of Bangladesh, like Munshiganj. Most local research tends to highlight broad national trends or compare urban schools.

Also, there is a noticeable lack of studies that combine both numbers and personal stories to understand the deeper reasons behind school choice. Important factors such as religious beliefs, emotional comfort, teacher dedication, and cultural values are often overlooked, even though they came through strongly in this study.

This research aims to fill that gap by:

- Taking a closer look at the Munshiganj district, where such studies are rare,
- Listening to both the numbers and the personal stories through a mixed-method approach, and
- Highlighting the social and cultural values that genuinely shape how parents make school choices for their children.

2. Research Objectives

- To find out the factors of parental preferences in choosing primary schools.
- To determine which factors have the greatest, moderate, and least influence on parents' decisions in selecting a primary school.

3. Methodology

3.1 Research Design

In this study, we have mainly adopted both quantitative and qualitative approaches to explore and examine the parental perception in choosing primary schools in Munshiganj District, Bangladesh. We administered a structured questionnaire comprising closed-ended Likert-scale and multiple-choice questions to collect respondents' socio-economic, cultural, educational, and demographic information, while one open-ended question in the survey questionnaire was included to supplement to capture more profound insights into parental preferences and reasoning.

3.2 Study Area

All six Upazilas of Munshiganj district—Munshiganj Sadar, Tongibari, Louhajang, Sirajdikhan, Sreenagar, and Gazaria were selected to ensure a comprehensive understanding of regional, socio-economic and demographic diversity of the entire district.

3.3 Population and Sampling

The population of this study includes all parents and guardians of primary school-going children residing in Munshiganj. To ensure representation from all regions and socio-economic groups of people, a proportionate number of respondents from all six upazilas based on the

total number of primary school-going children were selected. The convenience sampling technique was adopted to address respondents from all groups.

The sample size was determined using Cochran's Formula ($n_0 = \frac{Z^2.p\ (1-p)}{e^2}$) for infinite population to define sample size where Z-Score (Z) is 1.96 for 95% of confidence level, proportion (p) is 0.5 and margin of error is 0.05. According to the formula, the required sample size was 386; however, 378 valid responses were collected after excluding incomplete or erroneous data

The exact number of population and guardians, was unknown to us. So, we considered the total number of primary enrolled student of Munshiganj. According to the IPEMIS database of DPE the total number of students in Munshiganj was 156849 by March 2025. The number of pupils varies by upazila. So, the total number of primary enrolled students was first divided into strata (upazilas), and data were collected proportionally from each upazila based on the student population. We collected data from 59 respondents from Gazaria, 43 from Lauhajang, 70 from Sirajdikhan, 112 from Sadar, 69 from Srinagar, and 48 from Tongibari, based on the number of pupils in each upazila. Within each upazila, data collectors used a random selection method to select a guardian. Then they approached other guardians by the recommendation of the previous one in a snowball manner. In this case, the data collectors prioritized availability, ease of access, or willingness to participate.

Due to the unknown size of the target population, this study adopted a non-probability sampling method. Although this method was appropriate under the circumstances, it inherently limits the representativeness of the sample and, consequently, the generalizability of the findings. Moreover, practical constraints such as limited time, restricted access to participants, and resource limitations further shaped the sampling strategy

3.4 Ethical Considerations

The study strictly adhered to ethical research standards. Participants were clearly informed about the objectives of the study prior to their participation, and their voluntary consent was obtained before any data was collected. They were assured that all information provided would remain confidential and would be used solely for academic and research purposes.

To ensure privacy, no personally identifiable information was collected. Participants were also informed that their responses would not be disclosed to any third party under any

circumstances. The study posed no physical, psychological, or social risk to the respondents, as it focused exclusively on exploring parental perceptions in choosing primary schools for their children.

3.5 Data Collection Tools and Techniques

This study employed a structured questionnaire with closed-ended questions. Likert scale was used to quantify respondents' preferences. One open-ended question was included to share subjective opinions or motivations of respondents that might not be expressed by predetermined answers, the questionnaire was created to address important areas like respondents' demographic information, residence, socio-economic condition, etc. The questionnaire was designed to cover key areas such as:

- Demographic information of parents
- Information of the students
- Factors influencing school choice (e.g., academic quality, distance, reputation, fees, extracurricular activities)
- Perceptions and priorities regarding school choice

3.6 Data Collection Procedure

Field data collection was conducted by trained data collectors under the supervision of the research team. Each data collectors were assigned to a specific area of a Upazila to collect data from guardians using face-to-face interviews or by distributing printed questionnaires, depending on feasibility and respondent preference. Within the assigned area, data collectors used random selection method to select a guardian. Then they approached other guardians by the recommendation of the previous one in a snowball manner. The data collectors prioritized availability, ease of access, or willingness to participate. So, a stratified convenience sampling technique was employed in this research to collect data.

4. Data Analysis

4.1 Descriptive Insights

Choosing the right school for a child is a multifaceted decision influenced by various factors, including socioeconomic status, location, and educational priorities. The analyzed data provides a detailed understanding of the factors influencing parents' decisions when selecting

schools for their children. Based on the responses from N=378 participants here is the interpretation of the key findings:

The demographic characteristics of 378 parents who participated in the study are summarized below:

Income Range

Majority of the respondents are from Middle-Income Brackets. 78.3% of respondents earn between 0–3,60,000 BDT annually, with the largest group (30.2%) in the 1,80,000–3,60,000 BDT range. Only 4.8% earn above 7,00,000 BDT annually, which indicate that most of the parents are from middle- and lower-income groups.

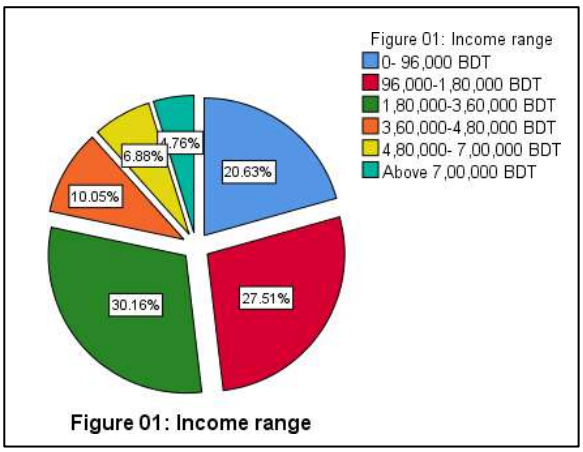


Figure 01: Income range

Residential Background

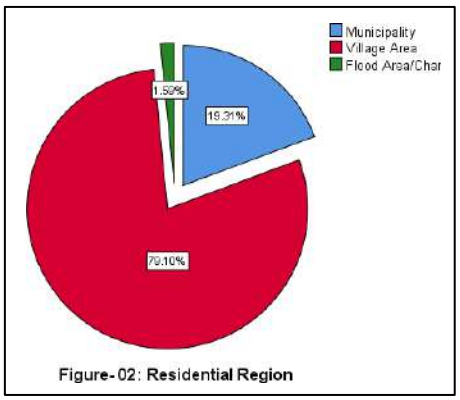


Figure-02: Residential Region

Rural Dominance: 79.1% of the respondents live in village areas, while 19.3% live in municipalities. Only 1.6% live in flood or char areas, indicating potential accessibility challenges.

Educational Background of Parents

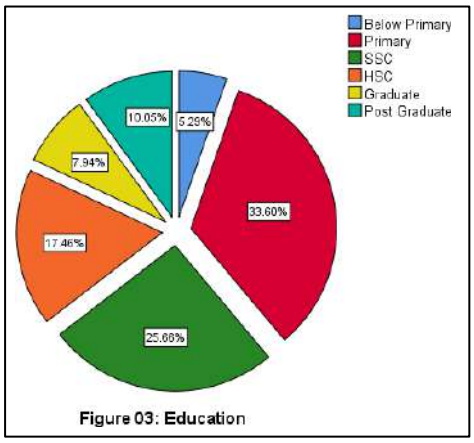


Figure 03: Education

According to the collected data 33.6% parents have completed their primary-level education, and 25.7% have SSC qualifications. Only 10.1% hold post-graduate degrees, and 7.9% completed their graduation. which may influence their school selection priorities. Based on the data it's clear that parents having Primary and Secondary Educational qualification are dominant in this study.

Type of School Chosen

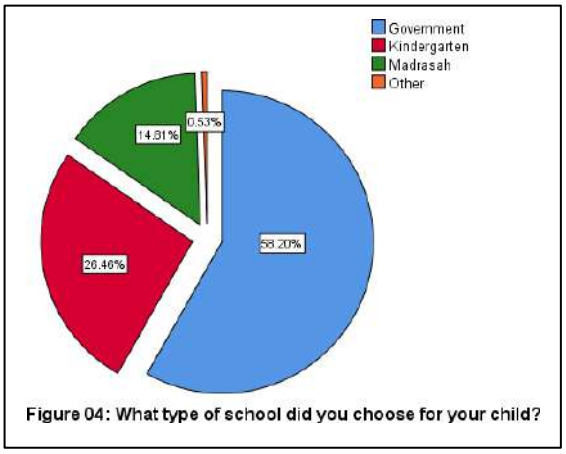


Figure 04: What type of school did you choose for your child?

Parents' most common choice was government primary schools (58.2%) for their children. It may be due to affordability and accessibility drive this preference. Kindergartens and Madrasahs cater to consecutively 26.5% and 14.8% parental preferences. Only 0.5% chose schools categorized as "Other."

Comprehensive Analysis of Factors Influencing School Selection Decisions

Descriptive Statistics

	N	Mean	Std. Deviation
3.1.3. Teachers' quality was an important factor in selecting the school.	377	4.05	.846
3.1.4. Reputation of the school influenced your decision.	378	4.03	.898
3.2.3. Community trend influenced your choice of school.	378	4.03	.896
3.1.8. Teaching learning quality	378	3.95	.917
3.1.6. Medium of instruction played a vital role in your decision.	378	3.91	.868
3.1.5. The school's infrastructure (buildings, classrooms, playground, washroom, etc.) affected your choice.	378	3.82	1.054
3.1.9. The adequate number of teachers at the school influenced your decision.	378	3.80	1.059
3.1.1. The location of the school was a significant factor in your decision-making.	378	3.76	1.398
3.1.10. The duration of contact hour influences your choice.	378	3.58	1.007
3.1.7. Extracurricular activities were influential component in choosing school.	378	3.52	1.015
3.2.2. Your socioeconomic status played a role in your school selection.	378	3.21	1.239
3.3.1. You chose the school because You wanted to develop moral values in your child.	378	3.14	1.240
3.2.1. Recommendations from your family, friends, or neighbors influenced you to select the school.	378	2.93	1.281
3.1.2. The cost of the school influenced your decision.	378	2.89	1.442
3.1.11 The stipend program influenced your opinion.	378	2.87	1.457
Valid N (listwise)	377		

Table 01: *Mean and Standard Deviation of Factors*

Table 01 shows the statistical description of parents' tendency for choosing school for their children. The factors influencing school choice were evaluated based on their Mean scores and standard deviation, where a higher Mean indicates greater influence and lower Std deviation indicates low variation around the mean.

Strongly influencing factors

Reputation and Academic Quality of School

The most influential factor in choosing a school is teachers' quality, with a mean score of 4.05 and standard deviation of 0.846, indicating that parents highly prioritize the quality of teachers. Schools with strong reputations and community trends are highly influential factors, each having a mean score of 4.03 and standard deviations of 0.896 and 0.898 respectively. Parents also consider teaching learning quality as a very significant factor, with a mean of 3.95 and std deviation of 0.917. A mean score of 3.91 and std. deviation of 0.868, means the medium of instruction plays a vital role in the decision-making for choosing a school. Infrastructure (like buildings, classrooms, playgrounds, and washrooms) and a sufficient number of teachers also significantly impact decisions, with mean scores of 3.82 and 3.80, respectively. Proximity to home or workplace and duration of contact hours at school are major considerations of parents, with mean score 3.76 and 3.58 respectively. Their standard deviation scores are 1.398 and 1.007.

Moderately Influencing Factors

Extracurricular activities and Moral value are considered in moderately important factors for choosing school with mean score 3.52 and 3.14 respectively. Their std deviation is 1.015 and 1.240. So, it means those are emphasized by parents moderately than previous factors.

Less Influencing Factors

Socioeconomic status played a role with a mean of 3.21 and std deviation 1.239. Recommendations from family, friends, or neighbors had a mean influence of 2.93 and std deviation 1.239, meaning they have less importance to the parents. Stipend Programs with mean = 2.87, SD = 1.457 and Cost of the School with mean score = 2.89, SD = 1.442 are less influential factor in the chart. Parents consider these factors less important for choosing school for their children.

4.2 Inferential Analysis of Factors

Correlation Coefficient among Factors

Correlation table

Factor	ρ	p	Interpretation
Income range (SED-2)	0.022	.666	No significant relationship
Education (SED-3)	0.073	.158	No significant relationship
Residential region (SED-4)	−0.011	.825	No significant relationship
Cost of the school (3.1.2)	−0.359	.000	Strong negative relationship;
Location of the school (3.1.1)	−0.266	.000	Moderate negative relationship;
Medium of instruction (3.1.6)	0.047	.367	Moderate positive relationship;
Teacher quality (3.1.3)	−0.179	.000	Weak negative relationship;
School reputation (3.1.4)	−0.006	.000	Weak negative relationship;
Recommendations (3.2.1)	0.180	.000	Weak positive relationship;
Extracurricular activities (3.1.7)	−0.147	.004	Weak negative relationship;
Teaching-learning quality (3.1.8)	−.033	.525	Weak positive relationship;
Stipend program (3.1.11)	−.585	.000	Weak positive relationship;
School Infrastructure (3.1.5)	−.210	.000	moderate negative association
Number of Teachers (3.1.9)	.002	.963	
Duration of Contact hour (3.1.10)	.200	.000	Weak positive relationship;

Table 2: *Spearman's Correlation Between Choosing School Type and other Influencing Factors*

According to Spearman's correlation analysis in table-2 socio-demographic characteristics, including income range (ρ = 0.022, p =.666), education (ρ = 0.073, p =.158), and residence region (ρ = −0.011, p =.825), do not significantly influence the type of school in this study. On the other hand, there are a number of important institutional elements. Moderate-to-strong negative correlations with school cost (ρ = -0.359, p =.000) and location (ρ = -0.266, p =.000) indicate these factors have less influence on the school choice. Additionally, extracurricular activities (ρ = −0.147, p =.004), school reputation (ρ = −0.006, p =.000), and teacher quality (ρ = −0.179, p =.000) has negative correlations that suggest less focus in choosing school types. Conversely, there are positive correlations between the contact hours (ρ = 0.200, p =.000) and recommendations from friends, family, and neighbors (ρ = 0.180, p =.000), highlighting the significance of social influence. The stipend program (ρ = -0.585, p =.000) has a significant

negative correlation, whereas school infrastructure (ρ = -0.210, p =.000) shows a moderately negative correlation. Overall, these findings suggest that parents' decision of choose school for their children greatly influenced by some institutional characteristics and social factors than their socio-economic condition.

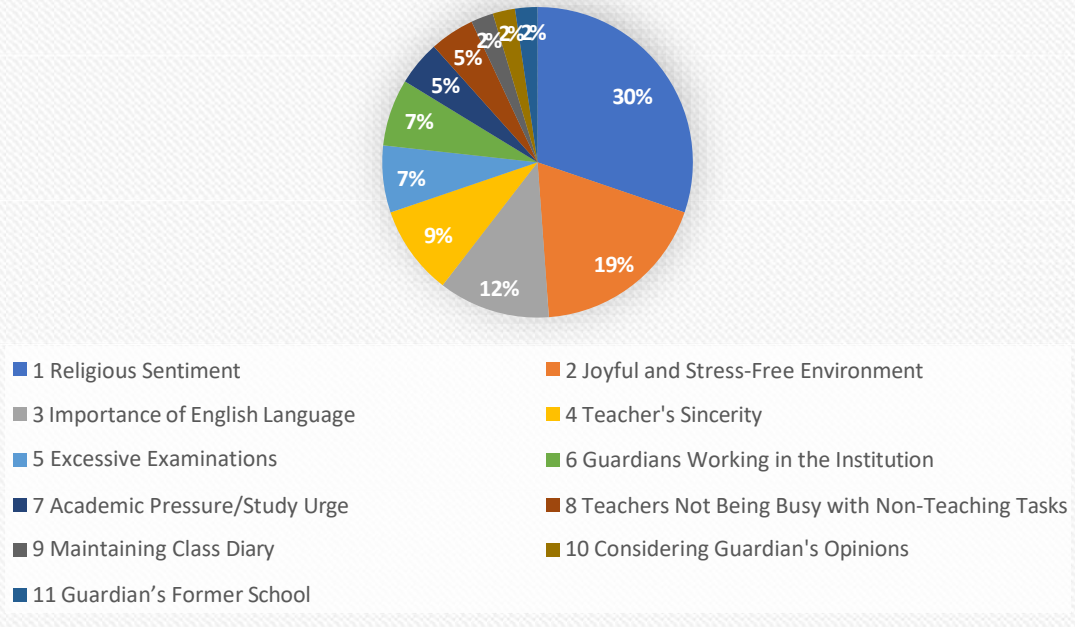
4.3 Thematic Analysis of Qualitative response in the Item 3.4

This study collected qualitative data on various factors that influence parents' choices when selecting a primary school. The data were analyzed thematically, and the results are presented in the following table:

Table 03: Theme based factors table and Frequency

No.	Theme	Frequency	Percentage (%)
1	Religious Sentiment	13	30.23%
2	Joyful and Stress-Free Environment	8	18.60%
3	Importance of English Language	5	11.63%
4	Teacher's Sincerity	4	9.30%
5	Excessive Examinations	3	6.98%
6	Guardians Working in the Institution	3	6.98%
7	Academic Pressure/Study Urge	2	4.65%
8	Teachers Not Being Busy with Non-Teaching Tasks	2	4.65%
9	Maintaining Class Diary	1	2.33%
10	Considering Guardian's Opinions	1	2.33%
11	Guardian's Former School	1	2.33%
	Total	**43**	**100%**

Figure 05: Frequency of factors accordin to Parests' Openion



The table 03 presents the thematic distribution of parental perceptions regarding factors that influence the selection of primary schools in Munshiganj. The data were categorized into 11 distinct themes, based on responses collected from participants, with the corresponding frequencies and percentages.

The most dominant theme was Religious Sentiment, which accounted for 30.23% of the total responses (13 out of 43). This indicates that a significant portion of parents prioritize the presence of religious values or teachings within the school environment when choosing a school for their children.

The second most prominent theme was Joyful and Stress-Free Environment (18.60%), showing that parents highly value a positive and pressure-free learning atmosphere.

Importance of English Language emerged as the third key factor (11.63%), highlighting that many parents are conscious of their children's English language proficiency and prefer schools that emphasize English learning.

Themes such as Teacher's Sincerity (9.30%) and Excessive Examinations (6.98%) indicate that parents also consider the quality and dedication of teachers, while expressing concern about too much emphasis on testing.

Another notable theme was Guardians Working in the Institution (6.98%), suggesting that familiarity, trust, or convenience may lead some parents to choose schools where they or family members are employed.

Less frequently mentioned, but still relevant themes include:

- Academic Pressure/Study Urge (4.65%)
- Teachers Not Being Busy with Non-Teaching Tasks (4.65%)
- Maintaining Class Diary (2.33%)
- Considering Guardian's Opinions (2.33%)
- Guardian's Former School (2.33%)

Overall, the findings demonstrate that parents consider both academic quality and moral/environmental aspects when selecting a primary school. Religious values, emotional

well-being, and English proficiency appear to be the most influential factors in the decision-making process.

5. Major Findings

When we compare the descriptive and inferential results, some clear gaps emerge between what parents say matters most and what actually influences their school choices. For example, parents gave the highest importance to teacher quality but the statistical analysis showed it had only a weak negative link with the final). School reputation followed a similar pattern—rated very high high but showing only a weak negative relationship. On the other hand, the cost of the school, which parents rated relatively low in importance, turned out to have a strong negative effect, meaning higher costs made them much less likely to choose the school. Even more striking, the stipend program—rated lowest of all was found to play a significant role in influencing decisions. In short, while parents talk about valuing quality factors like good teachers and strong reputations, their actual choices are shaped more by practical and financial realities such as school fees, location, and the availability of financial aid. This shows that although educational ideals are important in principle, affordability and accessibility often take priority when the final decision is made.

6. Discussion & Conclusion

The study on parental preferences and decision-making in choosing primary schools in Munshiganj, reveals parents' decisions in choosing primary schools for their children are a complex interplay of various factors. They consider academic quality and school environment over financial considerations.

The most significant factors for parents from quantitative aspects are-

- The quality of teachers is the most important aspect, followed by community trends and school reputation.
- The quality of teaching and learning, the medium of instruction, the infrastructure of the school (buildings, classrooms, playgrounds, restrooms), and the adequate number of teachers are other important elements.
- Location of the school from home/workplace and duration of contact hours also play a major role.

extracurricular activities and the desire to develop moral values in their children are also considered moderately important factors by parents.

Socioeconomic status, recommendations from family, friends, or neighbors, stipend programs, and the fees of the school have the least influence in parents' decision-making.

According to qualitative data, the most common influencing factor to the parents, is religious sentiment. This is followed by the importance of English language competency and a happy and stress-free atmosphere in the school. Concerns about too many tests and the earnestness of the teachers are also mentioned.

Despite existing disparities in teacher quality, assessment systems, and infrastructure, the large enrollment in government primary schools (58.2%) indicates that affordability and accessibility drive preferences for middle- and lower-income families, making these schools a common choice. Overall, parents balance academic quality and reputation with moral, emotional, and practical aspects when choosing a school for their children.

7. Recommendations

7.1 For Schools and Policymakers

Since teacher quality is the most important factor, policymakers should prioritize on teacher training to improve pedagogical knowledge and classroom procedures. They should also ensure that sufficient number of teachers are hired to draw in parents. To reduce accessibility gaps, schools should prioritize improving their facilities, including buildings, classrooms, playgrounds, and restrooms, especially in rural areas. Schools should also start awareness campaigns regarding their quality indicators to help parents make decision. The stipend program should be reviewed and strengthened targeting to reach low-income families. Schools should be constructed in locations that are more easily accessible to students.

7.2 For Future Research

- Can conduct further qualitative research for better understanding why and how factors, such societal trends, have such influence on parental choices.
- Can examine regional differences in school quality and access to pinpoint particular issues and areas that could use improvement.

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ANNEXURE- 01

Questionnaire for parents (Translated version)

প্রাথমিক বিদ্যালয় নির্বাচনে অভিভাবকদের সিদ্ধান্ত গ্রহণ ও মনোভাব অনুসন্ধান

অভিভাবকদের সাক্ষাৎকারের প্রশ্নাবলী

[এই গবেষণায় সংগৃহীত তথ্য শুধুমাত্র *"প্রাথমিক বিদ্যালয় নির্বাচনে অভিভাবকদের সিদ্ধান্ত গ্রহণ ও মনোভাব অনুসন্ধান"* শীর্ষক গবেষণার জন্য ব্যবহার করা হবে। উত্তরদাতাদের ব্যক্তিগত তথ্য গোপন রাখা হবে। গবেষণার অর্থায়নকারী কর্তৃপক্ষের বিধি অনুযায়ী নির্দিষ্ট সময়ের জন্য উত্তরপত্র সংরক্ষণ করা হবে এবং নির্দেশনা অনুসারে সময়ান্তে ধ্বংস করা হবে।]

অংশ-১: উত্তরদাতার তথ্য

১.১: জনসংখ্যাতাত্ত্বিক তথ্য

১.১.১: **লিঙ্গ:** □ পুরুষ □ মহিলা □ অন্যান্য

১.১.২: **বয়স:** □ ১৬-২০ বছর □ ২১-৩০ বছর □ ৩১-৪০ বছর □ ৪০+ বছর

১.১.৩: **উপজেলা:** □ সদর □ টঙ্গীবাড়ী □ সিরাজদিখান □ লৌহজং □ গজারিয়া □ শ্রীনগর

১.২: আর্থ-সামাজিক তথ্য

১.২.১: **পেশা:** □ চাকরিজীবী □ ব্যবসায়ী □ দিনমজুর □ কৃষক □ প্রবাসে কর্মরত□ অন্যান্য

১.২.২: **বার্ষিক আয়ের পরিসীমা:** □ ০ - ৯৬,০০০ টাকা □ ৯৬,০০০ - ১,৮০,০০০ টাকা □ ১,৮০,০০০ - ৩,৬০,০০০ টাকা □ ৩,৬০,০০০ - ৪,৮০,০০০ টাকা □ ৪,৮০,০০০ - ৭,০০,০০০ টাকা □ ৭,০০,০০০+ টাকা

১.২.৩: **শিক্ষাগত যোগ্যতা:** □ প্রাথমিক সম্পন্ন হয়নি □ প্রাথমিক □ এসএসসি □এইচএসসি □ স্নাতক □ স্নাতকোত্তর

১.২.৪: **এলাকার ধরণ:** □ পৌর এলাকা □ গ্রামাঞ্চল □ চরাঞ্চল

১.২.৫: **ধর্ম:** □ ইসলাম □ সনাতন □ খ্রিস্টান □ বৌদ্ধ □ অন্যান্য

অংশ-২: শিশু-সংক্রান্ত তথ্য

২.১. শিশু/শিক্ষার্থীর সাথে আপনার সম্পর্ক-

□ মা □ বাবা □ বৈধ অভিভাবক

২.২. আপনার সন্তান কোন শ্রেণিতে পড়ে?

□ প্রাক-প্রাথমিক (৪+ বয়স) □ প্রাক-প্রাথমিক (৫+ বয়স) □ প্রথম শ্রেণি □ দ্বিতীয় শ্রেণি □ তৃতীয় শ্রেণি □চতুর্থ শ্রেণি □ পঞ্চম শ্রেণি

২.৩: আপনার সন্তানের বয়স কত?

☐ ৪-৫ বছর ☐ ৬-৭ বছর ☐ ৮-৯ বছর ☐ ১০-১১ বছর ☐ ১১+ বছর

২.৪: আপনি আপনার সন্তানের জন্য কোন ধরনের বিদ্যালয় নির্বাচন করেছেন?

☐ সরকারি ☐ কিন্ডারগার্টেন ☐ মাদ্রাসা ☐ এনজিও স্কুল ☐ অন্যান্য

২.৫: আপনার সন্তান কতদিন ধরে এই বিদ্যালয়ে পড়ছে?

☐ ১ বছরের কম ☐ ১-৩ বছর ☐ ৩ বছরের বেশি

অংশ-৩: প্রভাবক-সংক্রান্ত তথ্য

৩.১: প্রতিষ্ঠান সম্পর্কিত প্রভাবক

৩.১.১: বিদ্যালয়ের অবস্থান আপনার সন্তানকে বিদ্যালয়ে দেয়ার সিদ্ধান্ত গ্রহণে গুরুত্বপূর্ণ বিষয় ছিল।

☐ সম্পূর্ণ একমত নই ☐ একমত নই ☐ নিরপেক্ষ ☐ একমত ☐ সম্পূর্ণ একমত

৩.১.৫: বিদ্যালয়ের অবকাঠামো (ভবন, শ্রেণিকক্ষ, খেলার মাঠ, টয়লেট ইত্যাদি) আপনার পছন্দকে প্রভাবিত করেছে।

☐ সম্পূর্ণ একমত নই ☐ একমত নই ☐ নিরপেক্ষ ☐ একমত ☐ সম্পূর্ণ একমত

৩.১.৪: বিদ্যালয়ের সুনাম আপনার সিদ্ধান্তকে প্রভাবিত করেছে।

☐ সম্পূর্ণ একমত নই ☐ একমত নই ☐ নিরপেক্ষ ☐ একমত ☐ সম্পূর্ণ একমত

৩.১.২: বিদ্যালয়ের খরচ আপনার সিদ্ধান্তকে প্রভাবিত করেছে।

☐ সম্পূর্ণ একমত নই ☐ একমত নই ☐ নিরপেক্ষ ☐ একমত ☐ সম্পূর্ণ একমত

৩.১.১১ বিদ্যালয়ের উপবৃত্তি কার্যক্রম আপনার মতামতকে প্রভাবিত করছে।

☐ সম্পূর্ণ একমত নই ☐ একমত নই ☐ নিরপেক্ষ ☐ একমত ☐ সম্পূর্ণ একমত

৩.১.৮. বিদ্যালয়ের শিখন-শিক্ষণ পদ্ধতি আপনার সন্তানের বিদ্যালয় নির্বাচনে গুরুত্বের সাথে বিবেচনা করেছেন।

☐ সম্পূর্ণ একমত নই ☐ একমত নই ☐ নিরপেক্ষ ☐ একমত ☐ সম্পূর্ণ একমত

৩.১.৬. বিদ্যালয় নির্বাচনের ক্ষেত্রে শিক্ষার মাধ্যম আপনি গুরুত্বের সাথে বিবেচনায় রেখেছে।

☐ সম্পূর্ণ একমত নই ☐ একমত নই ☐ নিরপেক্ষ ☐ একমত ☐ সম্পূর্ণ একমত

৩.১.৩: শিক্ষকদের মান বিদ্যালয় নির্বাচনের ক্ষেত্রে গুরুত্বপূর্ণ ছিল।

☐ সম্পূর্ণ একমত নই ☐ একমত নই ☐ নিরপেক্ষ ☐ একমত ☐ সম্পূর্ণ একমত

৩.১.৯ বিদ্যালয়ের পর্যাপ্ত শিক্ষক সংখ্যা আপনার সিদ্ধান্তকে প্রভাবিত করেছে।

☐ সম্পূর্ণ একমত নই ☐ একমত নই ☐ নিরপেক্ষ ☐ একমত ☐ সম্পূর্ণ একমত

৩.১.৭. বিদ্যালয় নির্বাচনে সহশিক্ষা কার্যক্রম গুরুত্বপূর্ণ প্রভাবক ছিল।

☐ সম্পূর্ণ একমত নই ☐ একমত নই ☐ নিরপেক্ষ ☐ একমত ☐ সম্পূর্ণ একমত

৩.১.১০ শ্রেণি কার্যক্রমের সময়সীমা বিদ্যালয় নির্বাচনে আপনাকে প্রভাবিত করছে।

☐ সম্পূর্ণ একমত নই ☐ একমত নই ☐ নিরপেক্ষ ☐ একমত ☐ সম্পূর্ণ একমত

৩.২: সামাজিক ও সাংস্কৃতিক প্রভাব

৩.২.১: পরিবার, বন্ধু বা প্রতিবেশীদের সুপারিশ সন্তানের বিদ্যালয় নির্বাচনে আপনার সিদ্ধান্তকে প্রভাবিত করেছে।

☐ সম্পূর্ণ একমত নই ☐ একমত নই ☐ নিরপেক্ষ ☐ একমত ☐ সম্পূর্ণ একমত

৩.২.২: আপনার আর্থ-সামাজিক অবস্থা বিদ্যালয় নির্বাচনে ভূমিকা রেখেছে।

☐ সম্পূর্ণ একমত নই ☐ একমত নই ☐ নিরপেক্ষ ☐ একমত ☐ সম্পূর্ণ একমত

৩.৩: নৈতিক ও ধর্মীয় প্রভাবক

৩.৩.১: আপনি এই বিদ্যালয় নির্বাচন করেছেন কারণ আপনি আপনার শিশুর মধ্যে নৈতিক মূল্যবোধ গড়ে তুলতে চান।

☐ সম্পূর্ণ একমত নই ☐ একমত নই ☐ নিরপেক্ষ ☐ একমত ☐ সম্পূর্ণ একমত

৩.৩.২: আপনার ধর্মীয় বিশ্বাস বিদ্যালয় নির্বাচনকে প্রভাবিত করেছে।

☐ সম্পূর্ণ একমত নই ☐ একমত নই ☐ নিরপেক্ষ ☐ একমত ☐ সম্পূর্ণ একমত

৩.৪: অন্যান্য প্রভাবক

৩.৪.১: উপর্যুক্ত বিষয়গুলো ছাড়াও আপনার সন্তানের জন্য বিদ্যালয় নির্বাচন করতে আরো যেসকল বিষয় বিবেচনা করেছেন সে সম্পর্কে লিখুন।

ANNEXURE- 02

Qualitative data collected from parents and guardians in the item 3.4 of questionnaire

N=378, n=80

1.	I think the teaching method in primary school is important for children.
2.	Children are taught with joy in government schools, so I chose a government primary school for my child.
3.	The head teacher and assistant teachers treat children with sincerity.
4.	In kindergarten, more emphasis is given to studies, and there are more exams, which I think improves the quality of children.
5.	In kindergarten, since time is short, children get time to rest and play when they come home. Since there are enough teachers, they can teach properly.
6.	Since the school hours are short, the parent can bring the child home with them. Also, the child is busy due to excessive reading.
7.	I want to make him a Hafeza.
8.	1. He has been admitted to the nearest government primary school as per his father's decision. 2. The child's cousin and sister study in the same school, so transportation facilities have taken precedence.
9.	The mother herself is a teacher in the same school
10.	The quality of reading is good at a low cost.
11.	1. The mother is of Islamic ideology, so she enrolled her child in a nearby madrasa school. It is easy to reach the child as it is close to home. 2. 2. The pressure of studying in kindergarten is high and the mother thinks that her child is not suitable for taking that pressure.
12.	The guardian was a former student of the said school. She chose that institution out of that liking.
13.	1. The father studied in primary school and is currently working in a government job. The father believes that a stress-free learning environment exists in primary schools. 2. She appreciated the fact that qualified teachers are currently being appointed.
14.	Some of the children of the neighbors also study in the same government primary school. For safety in transportation.
15.	Very important importance is given to the Arabic language along with the English language. Children are encouraged to follow religious rules.
16.	A son was admitted to a madrasa and the other to kindergarten. According to the mother, she will teach handwriting and then send him back to the madrasa.
17.	There is no other reason.
18.	The mother has considered various religious perspectives and will teach in the madrasa.
19.	The use and application of the English language is taught and taught with great importance.
20.	The father and mother want the child to memorize the Quran.
21.	To make the child a person according to religious ideals.
22.	The child is still small, so they have given him to this nearby school. In the future, they will take him elsewhere.

23.	I want to educate my child in religious education. So I have admitted him to a nearby madrasa.
24.	Writing class readings in the diary.
25.	Giving importance to the guardian, giving priority to their opinions, good behavior.
26.	1. Teaching with sheets 2. Grammar is taught. 3. General knowledge is taught.
27.	My child's cousins study in that school, due to which there is the advantage of going together. Since the school is near the house, it is comparatively safe.
28.	I think the teaching and learning techniques of government schools, co-curricular activities and teaching with fun will help my child to be well educated.
29.	School roads, toilets, clean drinking water, teachers' behavior, the way other students talk, the behavior of other parents, etc.
30.	My child will learn the Quran and receive religious education.
31.	1. The students' stay or learning time at school needs to be reduced. 2. The school needs more teachers.
32.	To check how much the student has learned in school, evaluation is done weekly, monthly and on specific days.
33.	The number of teachers in the school should be increased. The school hours should be reduced.
34.	Teachers do not have to do any extra work. So they work more time with the students.
35.	Close to home. The school environment is attractive and safe.
36.	Reading and writing are good. The teachers are quite sincere.
37.	Lessons are given in a joyful atmosphere. There is no extra pressure of studying.
38.	Lessons are given by trained and qualified teachers.
39.	It would be better if Bengali and English grammar books were available.
40.	I would feel more secure if there were boundary walls and gates in the schools.
41.	Teachers teach with sincerity. No vehicles have to cross the road to go to school.
42.	I am sending my child to a madrasa for religious and Islamic education. So that he can become a person of complete faith.
43.	The teachers in this school are trained. Students receive education in a fearless environment.
44.	My house is near the school. I can always take care of my child with special needs. The teachers take care of my child with motherly love.
45.	The teachers do not have any additional government work in the school. The teachers can give enough time to the students. The students stay in the school from 8 to 12 taka. They have to stay in the school for less time.
46.	The school is near my house and religious teachers teach Arabic in this school. Since the number of teachers is high, there is no hindrance in the class activities.
47.	There is no fee. No other expenses are required for admission. The teachers in the school teach with enough sincerity. The most important thing is that I work hard to send my child to school.
48.	A Guardian is the teacher of a Primary school
49.	1. The distance from home to school is short and the communication system is good. 2. There is no pressure of additional textbooks. 3. No worries about paying salaries. 4. 4. There is a stipend facility.

50.	1. The distance from home to school is short and the communication system is good. 2. The quality of reading and writing is good. 3. Free textbooks are distributed at the beginning of the year. 4. Stipend facilities are provided. 5. There are various sports and recreational facilities.
51.	1. The distance from home to school is short and the communication system is good. 2. The quality of reading and writing is good. 3. Skilled and experienced teachers.
52.	1. The distance from home to school is short and the communication system is good. 2. Textbooks are distributed free of charge at the beginning of the year. 3. Stipend facilities are provided.
53.	1. Good and reputable educational institution. 2. Skilled and experienced teachers. 3. The school is located in a pleasant environment.
54.	1. Opportunity to study and get textbooks free of charge. 2. Good provision of mid-day meal. 3. Skilled and experienced teaching staff
55.	**1.** Well-developed communication system. **2.** Opportunity to study free of cost. **3.** Good quality of education
56.	1. Opportunity to study and get new textbooks free of charge. 2. Provision of mid-day meal 3. Skilled and experienced teaching staff .
57.	1. The transportation system to the school is good. 2. There is no pressure of extra books 3. Textbooks are provided free of cost 4. No worries about paying salaries.
58.	1. Free study and free new books Available. 2. Skilled and experienced teachers . 3. Beautiful and spacious playground.
59.	1. Pleasant and safe environment. 2. Spacious playground at the school . 3. Teaching through multimedia . 4. Opportunity to study without pay .
60.	1. Near the residence. 2. Communication system is good. 3. Reputable educational institution. 4. Skilled and experienced teaching staff .
61.	1. The school is located close to home. 2. The quality of education is good. 3. Class activities are conducted by trained teachers .
62.	**1.** leading educational institution known for outstanding results. **2.** Located in a natural and pleasant environment. **3.** The school is relatively close to the residence.
63.	1. Good result in Primary Education Completion exam. 2. Renowned educational institution. 3. Opportunity to get stipend .

	4. Opportunity to study without pay .
64.	1. The distance from home to school is short and Communication is good. 2. The quality of education is good. 3. Free books are distributed.
65.	1. The distance from home to school is short and communication The business is good. 2. Teaching by trained and qualified teachers 3. Class Teaching is explained through practical materials and multimedia . 4. Both continuous and terminal assessments are conducted. 5. Various sports and recreational activities are arranged.
66.	1. relative is working as a teacher 2. Will be safe in the company of close ones.
67.	The availability of school-owned transport ensures convenient commuting.
68.	Special emphasis is given to English.
69.	1. Relation with school staff. 2. It will be easy to take care. 3. Get security.
70.	1. To make the child proficient in Arabic learning. 2. To educate in complete religious education.
71.	1. Transportation convenience. 2. Security.
72.	Science and math are given greater value.
73.	To motivate students to attend school and enhance their interest.
74.	To educate in Arabic language.
75.	1. Will be educated in religious education. 2. Will show interest in practicing veiling.
76.	Will be good in Arabic.
77.	will be good in English
78.	Special importance to English.
79.	Will be able to recite The Holy Quran well.
80.	Transportation facilities.

ANNEXURE- 03

Correlation Table

			P2.4: What type of school did you choose for your child?	SED-1: Occupation	SED-2: Income range	3.1.1. The location of the school was a significant factor in your decision-making.	3.1.2. The cost of the school influenced your decision.	3.1.3. Teachers' quality was an important factor in selecting the school.	3.1.4. Reputation of the school influenced your decision.	3.1.5. The school's infrastructure (buildings, classrooms, playground, washroom, etc.) affected your choice.	3.1.6. Medium of instruction played a vital role in your decision.	3.1.7. Extracurricular activities were influential component in choosing school.	3.1.8. Teaching learning quality	3.1.9. The adequate number of teachers at the school influenced your decision.	3.1.10. The duration of contact hour influence your choice.	3.1.11 The stipend program influenced your opinion.	3.2.1. Recommendations from your family, friends, or neighbors influenced you to select the school.		3.2.2. Your socioeconomic status played a role in your school selection.	3.2.3. Community trend influenced your choice of school.	3.3.1. You chose the school because You wanted to develop moral values in your child.
Spearman's rho	P2.4: What type of school did you choose	Correlation Coefficient	1.000	.005	.022	-.266**	-.359**	-.179**	.006	-.210**	.047	-.147**	-.033	.002	.200**	-.585**	.180**	-.082	.167**	.406**

	for your child?	Sig. (2-tailed)	.	.916	.666	.000	.000	.000	.902	.000	.367	.004	.525	.963	.000	.000	.000	.113	.001	.000
		N	378	378	378	378	378	377	378	378	378	378	378	378	378	378	378	378	378	378
	SED-1: Occupation	Correlation Coefficient	.005	1.000	-.130*	.250**	.096	.106*	.095	.134**	.153**	.094	.118*	.095	.094	.032	.022	.058	.069	.066
		Sig. (2-tailed)	.916	.	.011	.000	.061	.040	.065	.009	.003	.069	.021	.065	.069	.538	.673	.257	.181	.199
		N	378	378	378	378	378	377	378	378	378	378	378	378	378	378	378	378	378	378
	SED-2: Income range	Correlation Coefficient	.022	-.130*	1.000	-.182**	-.185**	.112*	.129*	.065	-.014	.130*	.060	.095	-.089	-.192**	.019	-.002	-.026	-.129*
		Sig. (2-tailed)	.666	.011	.	.000	.000	.030	.012	.205	.783	.011	.245	.066	.086	.000	.710	.969	.615	.012
		N	378	378	378	378	378	377	378	378	378	378	378	378	378	378	378	378	378	378
	3.1.1. The location of the school was a significant factor in your	Correlation Coefficient	-.266**	.250**	-.182**	1.000	.279**	.158**	.023	.115*	.020	.144**	-.007	.099	.167**	.197**	-.049	.152**	-.085	.088
		Sig. (2-tailed)	.000	.000	.000	.	.000	.002	.658	.025	.699	.005	.888	.055	.001	.000	.346	.003	.099	.088

decision-making.	N	378	378	378	378	378	377	378	378	378	378	378	378	378	378	378	378	378	378
3.1.2. The cost of the school influenced your decision.	Correlation Coefficient	-.359**	.096	-.185**	.279**	1.000	.018	-.181**	.051	-.083	.002	-.080	.031	-.101	.586**	.027	.447**	-.112*	-.035
	Sig. (2-tailed)	.000	.061	.000	.000	.	.725	.000	.322	.109	.973	.120	.546	.050	.000	.596	.000	.029	.498
	N	378	378	378	378	378	377	378	378	378	378	378	378	378	378	378	378	378	378
3.1.3. Teachers' quality was an important factor in selecting the school.	Correlation Coefficient	-.179**	.106*	.112*	.158**	.018	1.000	.605**	.488**	.355**	.336**	.396**	.366**	.197**	.066	-.030	.123*	.243**	.033
	Sig. (2-tailed)	.000	.040	.030	.002	.725	.	.000	.000	.000	.000	.000	.000	.000	.200	.562	.017	.000	.528
	N	377	377	377	377	377	377	377	377	377	377	377	377	377	377	377	377	377	377
3.1.4. Reputation of the school influenced your decision.	Correlation Coefficient	.006	.095	.129*	.023	-.181**	.605**	1.000	.492**	.441**	.342**	.364**	.382**	.289**	-.111*	-.069	.006	.343**	.070
	Sig. (2-tailed)	.902	.065	.012	.658	.000	.000	.	.000	.000	.000	.000	.000	.000	.031	.178	.903	.000	.173
	N	378	378	378	378	378	377	378	378	378	378	378	378	378	378	378	378	378	378

	3.1.5. The school's infrastructure (buildings, classrooms, playground, washroom, etc.) affected your choice.	Correlation Coefficient	-.210**	.134**	.065	.115*	.051	.488**	.492**	1.000	.382**	.468**	.297**	.471**	.285**	.135**	-.093	.076	.244**	-.061
		Sig. (2-tailed)	.000	.009	.205	.025	.322	.000	.000	.	.000	.000	.000	.000	.000	.009	.072	.141	.000	.238
		N	378	378	378	378	378	377	378	378	378	378	378	378	378	378	378	378	378	378
	3.1.6. Medium of instruction played a vital role in your decision.	Correlation Coefficient	.047	.153**	-.014	.020	-.083	.355**	.441**	.382**	1.000	.439**	.485**	.373**	.283**	-.098	.011	.023	.335**	.109*
		Sig. (2-tailed)	.367	.003	.783	.699	.109	.000	.000	.000	.	.000	.000	.000	.000	.057	.834	.650	.000	.034
		N	378	378	378	378	378	377	378	378	378	378	378	378	378	378	378	378	378	378
	3.1.7. Extracurricular activities	Correlation Coefficient	-.147**	.094	.130*	.144**	.002	.336**	.342**	.468**	.439**	1.000	.428**	.378**	.173**	-.030	-.041	.100	.118*	-.072

were influential component	Sig. (2-tailed)	.004	.069	.011	.005	.973	.000	.000	.000	.000	.	.000	.000	.001	.566	.425	.051	.022	.161
in choosing school.	N	378	378	378	378	378	377	378	378	378	378	378	378	378	378	378	378	378	378
3.1.8. Teaching learning quality	Correlation Coefficient	-.033	.118*	.060	-.007	-.080	.396**	.364**	.297**	.485**	.428**	1.000	.410**	.181**	-.103*	-.019	.053	.284**	-.019
	Sig. (2-tailed)	.525	.021	.245	.888	.120	.000	.000	.000	.000	.000	.	.000	.000	.046	.711	.304	.000	.706
	N	378	378	378	378	378	377	378	378	378	378	378	378	378	378	378	378	378	378
3.1.9. The adequate number of teachers at	Correlation Coefficient	.002	.095	.095	.099	.031	.366**	.382**	.471**	.373**	.378**	.410**	1.000	.326**	-.052	.014	.154**	.265**	-.029
the schoold influenced your	Sig. (2-tailed)	.963	.065	.066	.055	.546	.000	.000	.000	.000	.000	.000	.	.000	.311	.784	.003	.000	.577
decision.	N	378	378	378	378	378	377	378	378	378	378	378	378	378	378	378	378	378	378
3.1.10. The duration of contact hour	Correlation Coefficient	.200**	.094	-.089	.167**	-.101	.197**	.289**	.285**	.283**	.173**	.181**	.326**	1.000	-.099	.181**	.144**	.168**	.286**

influence your choice.	Sig. (2-tailed)	.000	.069	.086	.001	.050	.000	.000	.000	.000	.001	.000	.000	.	.055	.000	.005	.001	.000
	N	378	378	378	378	378	377	378	378	378	378	378	378	378	378	378	378	378	378
3.1.11 The stipend program influenced your opinion.	Correlation Coefficient	-.585**	.032	-.192**	.197**	.586**	.066	-.111*	.135**	-.098	-.030	-.103*	-.052	-.099	1.000	.104*	.418**	-.145**	-.071
	Sig. (2-tailed)	.000	.538	.000	.000	.000	.200	.031	.009	.057	.566	.046	.311	.055	.	.043	.000	.005	.166
	N	378	378	378	378	378	377	378	378	378	378	378	378	378	378	378	378	378	378
3.2.1. Recommendations from your family, friends, or neighbors influenced you to select the school.	Correlation Coefficient	.180**	.022	.019	-.049	.027	-.030	-.069	-.093	.011	-.041	-.019	.014	.181**	.104*	1.000	.268**	-.110*	.231**
	Sig. (2-tailed)	.000	.673	.710	.346	.596	.562	.178	.072	.834	.425	.711	.784	.000	.043	.	.000	.032	.000
	N	378	378	378	378	378	377	378	378	378	378	378	378	378	378	378	378	378	378
3.2.2. Your socioeconomic status played a	Correlation Coefficient	-.082	.058	-.002	.152**	.447**	.123*	.006	.076	.023	.100	.053	.154**	.144**	.418**	.268**	1.000	-.056	.178**

	role in your school selection.	Sig. (2-tailed)	.113	.257	.969	.003	.000	.017	.903	.141	.650	.051	.304	.003	.005	.000	.000	.	.274	.001
		N	378	378	378	378	378	377	378	378	378	378	378	378	378	378	378	378	378	378
	3.2.3. Community trend influenced your choice of school.	Correlation Coefficient	.167**	.069	-.026	-.085	-.112*	.243**	.343**	.244**	.335**	.118*	.284**	.265**	.168**	-.145**	-.110*	-.056	1.000	.288**
		Sig. (2-tailed)	.001	.181	.615	.099	.029	.000	.000	.000	.000	.022	.000	.000	.001	.005	.032	.274	.	.000
		N	378	378	378	378	378	377	378	378	378	378	378	378	378	378	378	378	378	378
	3.3.1. You chose the school because You wanted to develop moral values in your child.	Correlation Coefficient	.406**	.066	-.129*	.088	-.035	.033	.070	-.061	.109*	-.072	-.019	-.029	.286**	-.071	.231**	.178**	.288**	1.000
		Sig. (2-tailed)	.000	.199	.012	.088	.498	.528	.173	.238	.034	.161	.706	.577	.000	.166	.000	.001	.000	.
		N	378	378	378	378	378	377	378	378	378	378	378	378	378	378	378	378	378	378

**. Correation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Report of Five Small Field Researches Conducted by NAPE

- Exploring Teachers' Understanding of Play-based Pedagogy at the Pre-primary Level in Government Primary Schools in Dhaka City
- Exploring Primary Education Practitioners' Understanding of Inclusive Education in Bangladesh
- Primary Teachers' Attitude Toward the Implementation of Basic Training (BTPT)
- Exploring Primary Teachers' Practice for Developing Science Process Skills Among 5th Grade Students in Bangladesh
- Understanding Parental Preferences and Decision-Making in Choosing Primary School

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