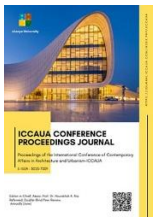

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Reclaiming Childhood: A School for Growth After Displacement

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Abstract

This study explores the capacity of space to facilitate resilience for post-displaced children in Bangladesh. This resilience is designed to result from two main strategies: *Recovery* and *Long-term Growth*. With the rapid increase in internal migration, the current education system and spaces must adapt to accommodate internally displaced (IDP) children. Through literature review, field surveys, workshops, migration pattern mapping, curriculum analysis, context analysis, pedagogical spatial characteristic analysis, and learning behavior analysis, eight design principles have been derived to make space act as *"The Third Teacher"* in the context of Bangladesh. Despite rural-to-urban migration being the majority among IDP children, there is a gap in understanding their needs in educational and public spaces. This study gathers demographic data, needs, and aspirations, translating them into guidelines for Recovery and Long-term growth in educational spaces for IDP and host community children who have their whole lives ahead of them after displacement.

Keywords: Internal displacement; Post-migration children; Climate change; Educational space; Child centric design; Bangladesh.

1. Introduction

Around the world, there are millions of children whose lives are being dramatically shaped by migration and displacement. Many have been forced by their communities by urgent circumstances that threaten their well-being – such as conflict, violence, or disasters. Some will cross borders, continents, and oceans; some will move within their home country. (Allen et al., 2023) Internally displaced persons (IDPs) are "Persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized State border" (Economic and Social Council of United Nations, 2001). A slow-onset disaster is defined as one that emerges gradually over time. Slow-onset disasters can be associated with, for example, drought, desertification, or rising sea levels. Displacement is more complicated to identify in such contexts, as population movements exist over a continuum between voluntary and forced movements, which evolve over time as the situation changes. Monitoring of slow-onset displacement is further complicated because several factors may combine to contribute to the displacement, making it difficult to attribute the displacement to one cause. (United Nations and European Union, 2020) Disasters – mostly storms and floods – were the leading cause of most new internal displacements of children in 2024. Around the globe, an estimated 23.3 million new displacements of children occurred in 2024: 8.9 million due to conflict and violence, and over 14.5 million tied to disasters. (UNICEF, 2025) Asia accounted for a third (11.3 million) of all internally displaced children. (UNICEF, 2023) Bangladesh ranked fourth on the list of countries with the highest number of children displaced by various natural disasters between 2016 and 2021. (UNICEF, 2023) It is important to note that many migrants move from rural to urban areas compared to other categories of movements. (Md Masud Parves Rana & Irina N. Ilina, 2021) The study aims to understand the changing demographics of the primary stakeholder group due to internal displacement in Bangladesh, to better meet their needs for recovery and long-term growth. The objectives of the paper are as follows:

1. Understanding the current shift in demography in Bangladesh in the urban areas due to Internal Displacement.
2. Establishing "Education" as a means of recovery and long-term growth among Internally Displaced Children.
3. Recommending the Conceptual Framework to use as an efficient tool for designing Educational Institutions for these children

2. Methods and Materials

The study is organized into five parts. The first part reviews the existing literature on Internal Displacement to better understand internal child displacement, post-displacement migration patterns, and the practical design principles a designer needs to design an impactful educational institution. The second part analyzes the curriculum and routine

guidelines of Bangladesh under NCTB 2025. The third part holds workshops with children who have faced internal displacement to understand their wants and needs. The workshops used open-ended questions and discussions with children from the target demographic, emphasizing making them feel heard and seen rather than targeted. It also provides guidance on implementing the conceptual framework in real schools. The fourth part considers all the given information to rationalize the conceptual framework. The fifth part proposes a conceptual framework that designers can use as a tool for making preliminary design decisions.

By combining the five parts, the study aims to develop a clear understanding grounded in existing knowledge and to integrate the opinions of internally displaced children further, providing a practical guide for creating educational institutions that meet their recovery and long-term growth needs. Cross-referencing the relevant studies, government regulations, and the needs and wants of children, a set of guidelines and spatial suggestions can be developed to aid in designing schools for growth post-displacement.

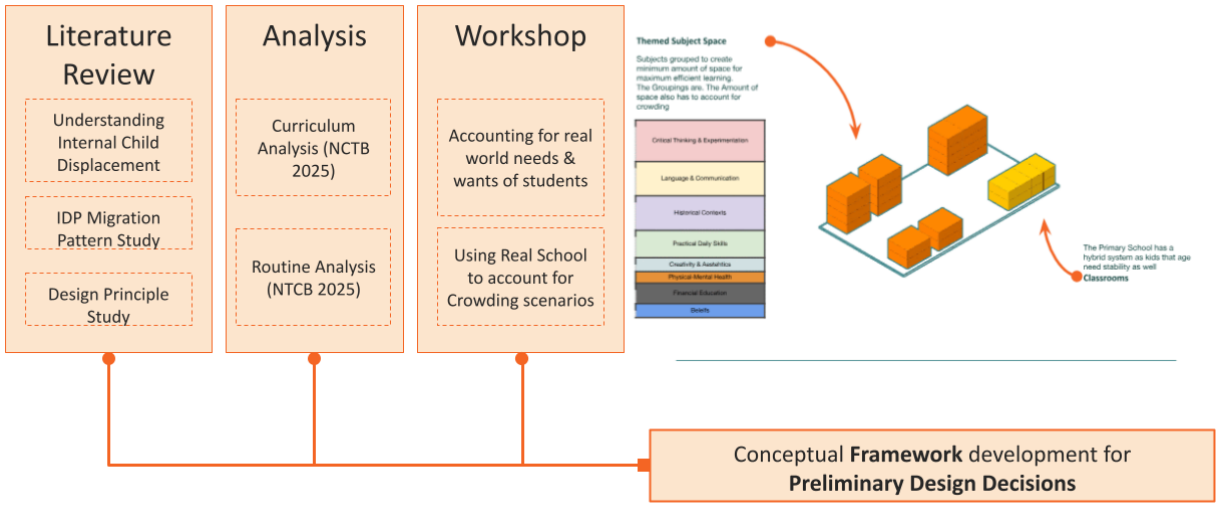

Figure 1. Structure of the Study (Developed by the Authors).

3. Literature Review

3.1 Who are Internally Displaced Children?

Established in 1998, the Guiding Principles on Internal Displacement are unanimously recognized by States and Governments as a key international framework to protect internally displaced persons (IDPs). Two central, internationally agreed upon components of the definition put forth by the principles are: (1) internally displaced persons movement is coerced or involuntary, as opposed to economic or voluntary migration, and (2) internally displaced persons remain within State borders, unlike refugees. (Economic and Social Council of United Nations, 2001)Child displacement occurs as part of broader waves of human migration. Owing to their vulnerable position, children are more vulnerable to exploitation and harm during migration. (Cordeiro, 2024)

3.2 Forms of Child Displacement

Internal Displacement: IDPs are persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights, or natural or human-made disasters, and who have not crossed an internationally recognized state border. (United Nations and European Union, 2020)

Planned Displacement: Though there is no universally recognized definition for planned displacement (or planned 'relocation'), the phrase is commonly used to define situations in which governments deliberately plan and execute the movement of communities away from their residential location and into a new area. (Cordeiro, 2024) Evacuation is not preventive and may not be sufficient in cases where people need to be relocated out of high-risk areas or cannot return to the place of original residence, when such areas are repeatedly stricken by disasters(UNHCR, 2012)

Unaccompanied Children: An unaccompanied child is a person who is under the age of eighteen, unless, under the law applicable to the child, majority is, attained earlier and who is "separated from both parents and is not being cared for by an adult who by law or custom has responsibility to do so. (Economic and Social Council of United Nations, 2001)

Refugee: According to the United Nations Convention in 1951, a refugee is someone who is unable or unwilling to return to their country of origin owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion. The border-crossing element differentiates a refugee from other categories of migrants and displaced persons. (Cordeiro, 2024)

3.3 Drivers of Child Displacement

To provide a healthy upbringing and quality of life for children's lives, their rights need to be respected and protected by caretakers and society. Without rights, children are at risk of exploitation, violence, and health risks. (Øverland and Nag, 2023)

Conflict, violence, and civil unrest: The total number of children displaced by conflict and violence rose to 48.8 million by the end of 2024, with large populations of children driven from home in places around the world(UNICEF, 2025)

Climate change and disasters: There were 43.1 million internal displacements of children linked to weather-related disasters over a six-year period – the equivalent of approximately 20,000 child displacements per day. Almost all – 95 percent – of recorded child displacements were driven by floods and storms. (Children Displaced in a Changing Climate | UNICEF, 2023) Persecution and targeting: Aside from regional or nation-wide wars and conflicts, children may be forced to flee their homes for safety when they, their families, or their communities are facing persecution. (Cordeiro, 2024) Disruption and separation: Children may also experience displacement due to communal disruption, including planned displacement where governments relocate communities for infrastructure or development projects. (Cordeiro, 2024)

3.4 Risks and Vulnerabilities Associated with Child Displacement

Abuse and exploitation: Displacement removes children from familiar environments, increasing their exposure to abuse and exploitation. Displaced children often face barriers in accessing essential services such as healthcare, legal identity, and education. Additionally, cultural, religious, and linguistic differences may hinder their ability to integrate into new environments, further heightening their vulnerability to harm and exploitation. (Cordeiro, 2024) Children who are forcibly displaced face an elevated risk of child, early, and forced marriage. The breakdown of social structures and the absence of protective networks in new environments can increase their exposure to such practices (Cordeiro, 2024) Forced displacement is frequently accompanied by economic hardship. Loss of livelihoods and income may compel families to rely on child labor as a survival strategy, often at the expense of children's education (Cordeiro, 2024)

3.5 Statistics of Internal Displacement

At the end of 2024, there were an estimated 33.8 million internally displaced children around the globe. Asia accounted for a third (11.3 million) of all internally displaced children. (UNICEF, 2025) Bangladesh ranked fourth on the list of countries with the highest number of children displaced by various natural disasters between 2016 and 2021. (UNICEF, 2023) Bangladesh is one of the countries most affected by climate change due to its location on one of the world's largest deltas. Bangladesh ranks 15th out of 163 countries in UNICEF's children's climate risk index in 2021.(Fumiyo Kagawa & UNICEF, 2022) From 1990 to 2018, riverine floods and cyclones caused over 150,000 deaths, affected more than 150 million people, and caused over US$12 billion worth of damage in Bangladesh. (Children on the Move: A Rapid Assessment and Policy Issues of Bangladesh, (UNICEF and GED, 2021))

According to the Internal Displacement Monitoring Center (IDMC) data, about 7 million people (including about 3 million children) were displaced in Bangladesh during 2008-2018. (UNICEF and GED, 2021) Some 12 million children living in and around the river systems face increasing life-threatening flood risk. Another 4.5 million children living in coastal areas are repeatedly affected by powerful cyclones. (Fumiyo Kagawa & UNICEF, 2022) Streets and slums are two of the most visible evidence of rural-urban migration of children and are especially triggered by poverty. Four million people are estimated to live in around 5,000 urban slums in Dhaka. (UNICEF and GED, 2021)

According to data by UNICEF Bangladesh regarding the situation of children

- **Population:** 169.8 million
- **Children (aged 0-17 years):** 56.9 million (33%)
- **Infants (aged 0-11 months):** 3.4 million
- **Children under five years of age (aged 0-59 months):** 16.3 million
- **School-aged children (aged 6-17 years):** 37.6 million
  Source-(UNICEF Bangladesh, 2025)
  Children seriously exposed to climate hazards: 20 million (Simon Ingram, 2019)
- Bangladesh ranks 15th among 163 countries where children are at the most risk of climate change. (UNICEF, 2021)
- Children's well-being is at risk due to exposure to climate-related and environmental shocks and hazards such as coastal flooding, riverine flooding, air pollution, soil and water pollution, vector-borne diseases, and heatwaves, and underlying vulnerabilities in areas such as health, nutrition, water, sanitation and hygiene, poverty and social protection, and education. (UNICEF, 2023)

3.6 Migration Pattern

As many as 19 coastal districts and those along the major riverbanks (Padma, Meghna, and Jamuna) face the highest levels of disaster risk. (Md Masud Parves Rana & Irina N. Ilina, 2021) It is important to note that many migrants move from rural to urban areas in comparison to other categories of movements

Table 1. Categories of internal migration (per 1000 population), 1991–2011. (Md Masud Parves Rana & Irina N. Ilina, 2021).

Destination	1991	2004	2011
Rural Destinations	45.2	33.7	57.2
Rural to rural	34.2	29.9	52.6
Urban to rural	11.0	3.8	4.6
Urban Destinations	561.5	312.0	267.3

Urban to urban	43.6	47.9	44.4
Rural to urban	517.9	264.1	222.9

As the report suggests, Dhaka and Chittagong districts were the major destinations to which almost two-thirds of migrants moved. Dhaka alone captures 42% of the total lifetime in-migrants. Bangladesh was in sixth position in the world according to the size of slum populations, at 30.4 million. (Mike Davis, 2006) A survey entitled 'Census of Slum Areas and Floating Population 2014′ conducted by the Bangladesh Bureau of Statistics (BBS) reported that there were 13,938 slums in Bangladesh. (Bangladesh Bureau of Statistics, 2014) The following shows the distribution of slums in the administrative divisions of Bangladesh. Dhaka division has the largest (46.56%) amount of slum population in comparison to other divisions.

Table 2. Distribution of slums in Bangladesh. (Md Masud Parves Rana & Irina N. Ilina, 2021).

Division	Total slums	Percentage of slums
Barisal	205	1.47
Chattagram	3305	23.71
Dhaka	6489	46.56
Khulna	1684	12.08
Rajshahi	421	3.02
Rangpur	422	3.03
Sylhet	1412	10.13
Total	13,938	100

A changing climate undermines children's health, safety, education, and wellbeing, and diminishes their prospects for a better future. ("Bangladeshi children raise their voices and call for climate action on World Children's Day | UNICEF Bangladesh," 2020) Without targeted interventions, it is likely that many more children will reside in high-density urban communities by 2050, where access to water, health care and education is suboptimal and where exposure to violence and environmental hazards will put their well-being at risk. (UNICEF, 2024)

3.7 How the current system fails the Internally Displaced Children

Children's access to education is disrupted when schools are destroyed by natural disasters or used as temporary shelters. Not only major disasters but also small-scale and recurrent events (e.g., regular high tides and heavy rains). (Fumiyo Kagawa & UNICEF, 2022) Its urban centers are characterized by the concentration of wealth in specific pockets and among specific groups, creating socioeconomic and spatial inequalities that drive urban poverty, segregation, and marginalization. Many poor people, including IDPs, live in rapidly expanding but unplanned, unregulated, and underserved settlements in peri-urban areas. (IDMC, 2019) Urban IDPs tend to prioritize education over other services because it is transferrable to human capital that may be key to rebuilding their lives. During urban crises, however, schools may be used as emergency shelters. They may also be damaged or destroyed during conflicts or disasters. Ensuring education for displaced children as well as those from host communities should be a priority. (IDMC, 2019) In practice, this goal is undermined by the existence of special schools and of special classes within mainstream schools and by residential and other geographical disparities. (UNESCO, 2021) While enrolment in separate schools is the most easily identified form of segregation, statistics on intermediate arrangements, such as mainstream classes with special support or special and mainstream schools on shared premises, are rarely available. (UNESCO, 2021) Number of IDPs who have returned, been resettled, or locally integrated but who may still have vulnerabilities linked to their displacement (IDMC, 2019). Students can be physically in a class but not belong to it socially. Learners can be subject to humiliating treatment, whether they belong to a specific group or not. (UNESCO, 2021)

3.8 Why focus on Education

Education is a human right. The right to education is enshrined in Article 26 of the UN's Universal Declaration of Human Rights from 1948. The declaration of advocates for free and compulsory primary education is important. (United Nations, (United Nations, 1989))

Article 28 of "Convention on the Rights of the Child" States Parties recognize the right of the child to education, and with a view to achieving this right progressively and on the basis of equal opportunity, they shall, in particular: (a) Make primary education compulsory and available free to all; (b) Encourage the development of different forms of secondary

education, including general and vocational education, make them available and accessible to every child, and take appropriate measures such as the introduction of free education and offering financial assistance in case of need; (c) Make higher education accessible to all on the basis of capacity by every appropriate means; (d) Make educational and vocational information and guidance available and accessible to all children; (e) Take measures to encourage regular attendance at schools and the reduction of drop-out rates. (United Nations, 1989)
Schools give displaced children and young people access to vital services such as healthcare and psychosocial support. Schools are important places for them to receive help. (Roald Høvring & Norwegian Refugee Council, 2023) Displaced people have to establish themselves in a new place without a network of family and friends and need to deal with their trauma and stress. And they often struggle to find work and support their families. This makes school especially important. (Roald Høvring & Norwegian Refugee Council, 2023)

3.9 How can space facilitate Education?

Teachers are at the point where there are too many things that teachers need to do. There are too many problems to solve. And it is not possible, at least in the system and structure we have now, to do all those things. (Dr. Justin Sung, 2023a) One of the core concepts is the techniques that transition the role of an educator from what is traditionally an educator-dependent relationship to an educator-inspired relationship. (Dr. Justin Sung, 2023a) But learners right now and in the future will benefit from having higher-order thinking and higher-order learning skills. (Dr. Justin Sung, 2023) See Figure 2 to see the learning levels from Bloom's revised taxonomy.

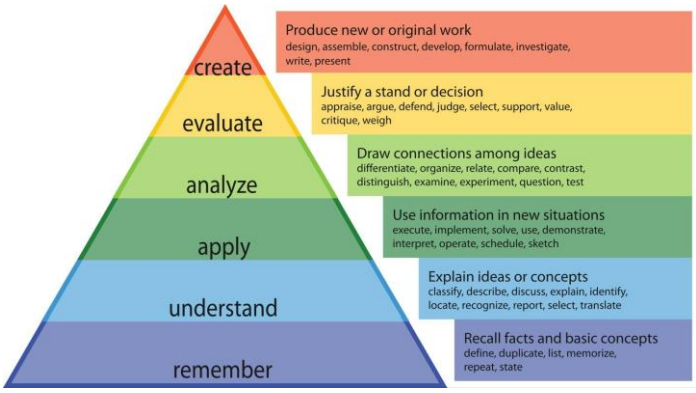

Figure 2. Bloom's revised taxonomy is organized as a pyramid of learning levels with explanations of each (Wikipedia, 2026). "Apply, Analyze, Evaluate, create" is considered Higher Order Learning; "Remember, understand" is considered Lower Order Learning in this case.

The way learning can be facilitated is for desired behaviors to be easy to repeat. (Dr. Justin Sung, 2023b) If we are looking for new pedagogical practices, we must have facilities that will enable those to happen. (Cannon Design et al., 2010) A learner who can self-regulate monitors their own learning. They can see what they are doing. They can see where things are going wrong. And now the role of the educator is not simply to be the one on whose progress this student's progress depends, but rather the role of the educator is to inspire and motivate and encourage, to direct, to guide, and to lead the student while they are the ones who are pushing. (Dr. Justin Sung, 2023a)

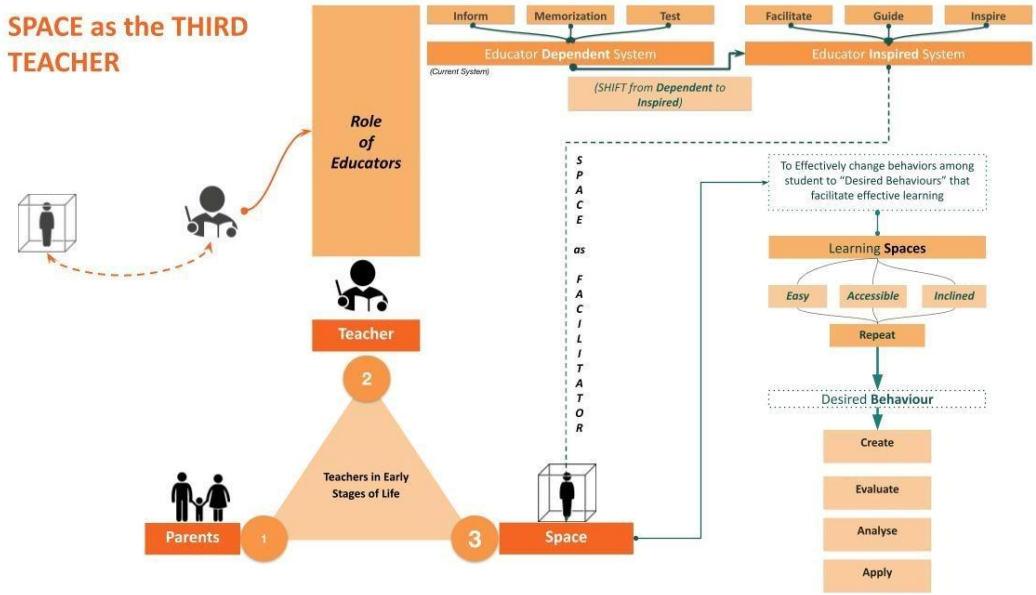

Figure 3. Variables to meet for space to become the Third Teacher (Developed by the Author).

4. Spatial Characteristics of Learning

According to the book "The Third Teacher," the spatial characteristics of space to become the Third Teacher are as follows-

4.1 Basic Needs

World Health Organization (WHO) has a wider concept of health and defines mental health as: "A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." (Øverland and Nag, 2023) Put safety before studying. Children are ready to learn only when they are safe and secure, so address those needs before considering any other aspect of a child's environment. (Cannon Design et al., 2010) For a child, their primary needs are food, water, and sleep. Once the physiological needs have been addressed, the next level is safety and security needs. (Cannon Design et al., 2010)Teachers and students, as well as architects and designers, have ideas about their ideal learning environment. (Cannon Design et al., 2010). It is important to provide a safe and loving environment, and it is equally crucial that a whole health approach is adopted for children to ensure the optimal development conditions for children." (Øverland and Nag, 2023)

4.2 Body

One of the cornerstones of our Montessori approach is respecting the children's need to move and giving them the freedom to do so. Developing control of movements, balance, and whole-body and hand-eye coordination are all essential in supporting healthy growth and development. (Maria Montessori Institute, 2024) A learning space that can be reconfigured on a dime will engage different kinds of learners and teachers(Cannon Design et al., 2010) Locate play space anywhere and everywhere, from rooftop terraces to indoor atriums. (Cannon Design et al., 2010) Kids who play outside are happier, better at paying attention, and less anxious than kids who spend more time indoors. (Danielle Cohen, 2024) Naturalize play spaces. Allowing grass and leafy plants to flourish in play spaces will provide endless opportunities for play and discovery. (Cannon Design et al., 2010)

4.3 Mind

Free teachers from the traditional desk at the front of the classroom and encourage new settings for teaching and learning. (Cannon Design et al., 2010) There is all of this research around how to teach better, how to deliver a better lesson, how to be more personalized or tailored in your instruction and methodology to make sure that your pedagogy is as research-based as it could be. But it is getting overwhelming. (Dr. Justin Sung, 2023a) Most of today's classrooms are designed with the teacher at the center. But if the classroom is focused on the learner instead, then learning becomes paramount. (Cannon Design et al., 2010)Change up the locations of regular activities so children can explore new surroundings with their bodies and their minds. (Cannon Design et al., 2010)Spark cognitive development by providing students of all ages with places to test new skills. This applies to lifelong learning. (Cannon Design et al., 2010)Transport the community, the landscape, and faraway places into the classroom with visuals and objects that call them to mind. (Cannon Design et al., 2010)

4.4 Senses

Empowering students through sensory experiences that engage in all senses is essential, thereby redefining the educational landscape. (Juan Alberto Almirón Cuentas and David Hugo Bernedo-Moreira, 2024) Educational change concerning the significance of the sensory realm is urgently needed to enable us to discover ourselves as complete physical and mental beings ... an unbiased and full understanding of human existence is a prerequisite for dignified life. — Juhani Pallasmaa, architect (Cannon Design et al., 2010)The garden instills in children the understanding that learning is not confined to the four walls of a classroom and paves the way for them to discover the universe. (Schools, 2024) Growing and preparing fruit and vegetables on school grounds educates children's senses of taste, touch, and smell. (Cannon Design et al., 2010) Create a multi-sensory setting with surfaces that are smooth and rough, wet, and dry, opaque, bright, translucent, and transparent. Have features that change over time (wood, stone, flowers, fabrics) or remain unchanged (glass, steel). (Cannon Design et al., 2010) It is crucial to transform the way architecture is conceived in education, moving away from an eye-centric approach to include a broader range of sensory experiences. (Juan Alberto Almirón Cuentas and David Hugo Bernedo-Moreira, 2024)

4.5 Community

Experts describe transformative learning as a cumbersome process rife with conflict, but with the careful facilitation of this conflict through collective care between teachers, community members, and learners, stronger social bonds, social cohesion, and sense of belonging can emerge. (Christina Kwauk and Olivia M Casey, 2022) Those heading up the planning process for a new school will get off on the right foot by inviting every potential user and stakeholder from the start. (Cannon Design et al., 2010) Building a new school is an opportunity to make friends with other community services, such as libraries and recreational facilities, and even make a new home together on a single campus. (Cannon Design et al., 2010) The community has interests not just in school development, but primarily to improve quality in the framework of forming social roles through various forms of participation in early childhood education institutions." (Eravia Veronica, 2020) The rich cultural traditions of a school's students offer design opportunities. Embracing them is a mark of respect that tells students that where they come from matters as much as where they are going. (Cannon Design et al., 2010) A great school gives its neighbors a park to hang out in, a goal to aspire to, a building to be proud of, and a standard to maintain. (Cannon Design et al., 2010)

4.6 Sustainable Schools

By introducing students to sustainability principles from an early age, education helps create a culture that cares about the environment and society in the future." (Nasir et al., 2024) Making school infrastructure transparent, displaying the flows of water and waste, teaches kids the workings of the real world. (Cannon Design et al., 2010) Hands-on experience is a powerful teacher. Encourage students who want to convert their school to sustainable practices and let them go for it. (Cannon Design et al., 2010) Many families are trying to shift to more sustainable habits. Aligning the school's goals with those of the families it serves creates a wide community of support for a sustainable school. (Cannon Design et al., 2010)

4.7 Learning for All

Many children with disabilities have moderate impairments that are often not visible or easily diagnosed. Disabled children include those with learning difficulties, speech difficulties, physical, cognitive, sensory, and emotional difficulties. (Cannon Design et al., 2010) Injecting a learning space with playfulness and humor creates a warm and welcoming atmosphere. (Cannon Design et al., 2010) The process, as well as the outcome, of building an accessible playground can bridge all sorts of community divides. (Cannon Design et al., 2010)Schools that are engaging, vibrant, and great places to foster a sense of belonging that is important for all kids, especially those at risk. (Cannon Design et al., 2010)

4.8 Rewired Learning

It is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail. – Abraham Maslow (Cannon Design et al., 2010) Consult with kids. Survey students about what they would like to study, then design spaces that let them learn what they want to learn. (Cannon Design et al., 2010) Give students space – studios, workshops, and laboratories – where they can test ideas for practical applications. (Cannon Design et al., 2010)

5. Analysis

5.1 Curriculum Analysis

The following table shows the number of textbooks students have in each class. M= Mandatory, O=Optional. Subjects with adjacent qualities have been grouped together to create "Blocks." Each block is named after the core idea of the textbooks, as defined by the curriculum. It is important to note that some subjects (Physical and Mental Health) have hands-on classes in Primary school without having textbooks. Source-(Board (NCTB), (NCTB, 2026))

Table 3: Textbook Analysis Pre-primary to High-School.

NCTB (2025) *https://nctb.portal.gov.bd/site/page/d01e72b0-8ecd-4c81-bffd-c9e117b7fdad/-*		**Pre-Primary**		**Primary School**					**High School**					**Blocks**
	Class (M= Mandatory; O= Optional)	**4+ Yr**	**5+ Yr**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
M	My Book		1											Day Care & Pre-Primary
M	Writing Practice		1											
M	Math			1	1	1	1	1	1	1	1	1	1	Critical Thinking & Experimentation
O	Math											1	1	
M	Science					1	1	1	1	1	1	1	1	
O	Science											1	1	
O	Science											1	1	
O	Science											1	1	
M	Bangla			1	1	1	1	1	1	1	1	1	1	Language & Communication
M	Bangla								1	1	1	1	1	
M	Bangla								1	1	1	1	1	
M	English			1	1	1	1	1	1	1	1	1	1	
M	English								1	1	1	1	1	
M	Bangladesh & Global Studies					1	1	1	1	1	1	1	1	Historical Contexts
O	Bangladesh & Global Studies											1	1	

												1	1		
O	Minority Studies								1	1	1	1	1		
O	Civics											1	1		
M	Career Studies								1	1	1	1	1	Practical Daily Skills	
O	Agriculture								1	1	1	1	1		
O	Home Economics								1	1	1	1	1		
M	ICT								1	1	1	1	1		
M	Art								1	1	1	1	1	Creativity & Aesthetics	
O	Music								1	1	1	1	1		
M	Physical Education								1	1	1	1	1	Physical-Mental Health	
O	Economics											1	1	Financial Education	
O	Finance											1	1		
O	Business											1	1		
M	Religion					1	1	1	1	1	1	1	1	Beliefs	
O									1	1	1	1	1		
Total Books		**2**		**24**					**110**						
Years		2		5					5					-	
Hours Per Shift (Double Shift)		2	2.5	4		4-5			6-7						

From this table, we can see that, according to the NCTB 2025 curriculum, pre-primary has 2 books, Primary School has 24 books, and High School has 110 books. Students spend 2, 5, and 5 years at each school, respectively. They also spend 2-2.5 hours in pre-primary, 4-5 hours in Primary, and 6-7 hours in High School for 5 days a week.

5.2 Routine Analysis

Table 4: Each subject has a specific frequency at which they need to be taught weekly. Two shifts - Necessary instructions for using session routines for general education institutions are given below.

Two-shift, Primary School (General Instructions)- NCTB 2025

Subject	**Class 1 & Class 2**	**Class 3- Class 5**
Bangla	5 days a week	5 days a week
Mathematics	5 days a week	5 days a week
English	4 days a week	4 days a week
Religious Education	2 days a week	3 days a week
Arts/ Music	1 day a week.	1 day a week
Physical and Mental Health Education	1 day a week	1 day a week
Science	x	3 days a week
Bangladesh and World Introduction (BAOB)	x	2 days a week

Integrated studies	1 day a week.	x
Reading and writing skill development/supplementary reading material practice/co-curricular activities	1 day a week.	1 day a week

Two-shift, High School (General Instructions)- NCTB 2025

Subject	**Class 6-Class 9**	**Class 10**
Bangla	4 days a week	5 days a week
English	4 days a week	5 days a week
Science	4 days a week	3 days a week
Math	4 days a week	4 days a week
History	4 days a week	3 days a week
Career Studies	2 days a week	1 day a week
Information & Communication Technology	2 days a week	2 days a week
Religion	2 days a week	2 days a week
Physical and Mental Health Education	2 days a week	1 day a week
Art / Music	2 days a week	x
General Optional	x	3 days a week
Optional according to the division	x	3 days a week

Source-(Directorate of Primary Education, 2025),(Directorate of Secondary and Higher Education, 2025)

6. Workshop

(82 Participants Recorded till 30 April 2025)

The workshop had questionnaires made with open-ended questions. For the last question, there was an option to write or draw what their dream school would look like. Studies suggest that a participatory, democratic approach to education is a key pathway to the acquisition of knowledge." (Christina Kwauk and Olivia M Casey, 2022) Integrate climate change impact and vulnerability indicators into existing data collection tools/mechanisms and reporting tools/mechanisms. (Fumiyo Kagawa & UNICEF, 2022)

6.1 General Demographic Information

65.9% of the participants were students of New Bosila Government Primary School, and 34.1% were students of Bosila Government High School. Of the 82 participants, 56.1% were Female and 43.6% were Male. Ages ranged from 9 to 19 years old, with the highest amount being 15-year-olds. Students from classes 3 through 10 were a part of the workshops.

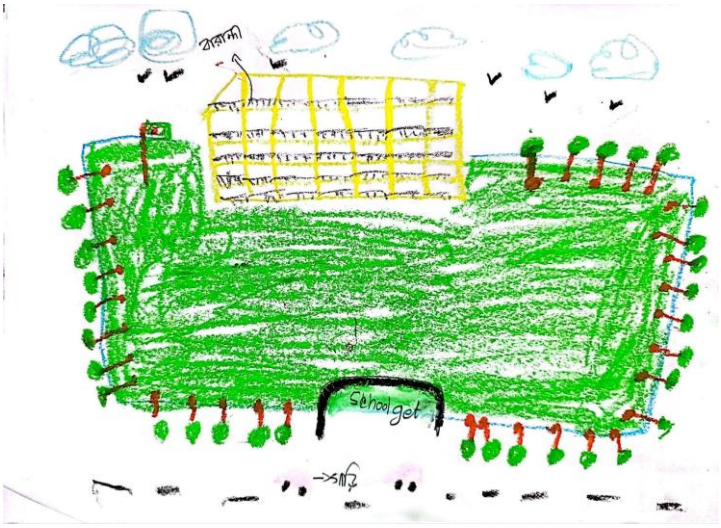

Figure 4. Drawing their "Dream School" by a student (F, 15y). She wants her school to be surrounded by greenery and have colorful classes.

6.2 Finding the Internally Displaced Children

36.6% of the participants were originally from the Dhaka division. 23.2% from Barishal, 12.2% from Khulna, 8.5% from Chittagong, 8.5% from Rajshahi, and the remaining 11% from the Rangpur and Sylhet divisions. In the figure, 15 of 82 participants were from Dhaka zilla, while 67 were from outside the city. Of the 67 participants, 15 were from Bhola. 3 from Chadpur, 3 from Pabna, 3 from Barishal, 3 from Bagerhaat. Surveying which zilla in the division they are from. From the analysis, we can see that they are primarily from flood-prone areas in the country, which are among the most vulnerable to climate change. Only 8.5% of the participants were locals of Bosila, while 12.2% have been living there for 1 year, 9.8% for 3 years, and 9.8% for 5 years.

Figure 5. Drawing of their "Dream School" by a student (M, 16y). He wanted his school to be able to float so it would not get destroyed by floods ever again.

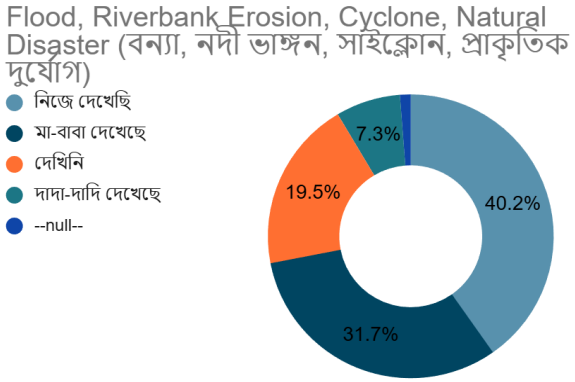

Figure 6. (Developed by the Authors) Surveying if they faced effects of natural calamities (I faced it myself- 40.2%; Parents faced it- 31.7%; Grandparents faced it- 7.3%; Did not face it- 19.5%).

6.3 Relationship with their School

Surveying aspects of their school they like (Playing- 37.8%; Learning- 36.6%; Spending time with friends- 23.2%). Surveying aspects of their school, they do not like do not uncleanliness- 23.3%; Violence-19.5%; Quarrel-23.2%) Surveying what the children do in their leisure we found, 12 Participants- Playing Sports, 11 Participants- Drawing, 11

Participants- Using their phones, 10 Participants- Watching TV, 8 Participants- Reading Books, 7 Participants- Listening to music, 6 Participants- Gardening, 5 Participants- Spending time with friends, 4 Participants- Using their computer, 2 Participants- Helping around the house, 2 Participants- Helping parents, 2 Participants- Studying. Surveying the frequency of their sports participation, we found that 33 of the 82 participants played sports daily, 21 played 1-2 times/week, 16 played 3-5 times/week, and 11 did not play sports. Surveying where the children spent their leisure time, we found that 45 of the 82 participants spent their time in the school field, 17 at home, and 6 beside the riverbank.

6.4 What the Children want from their School

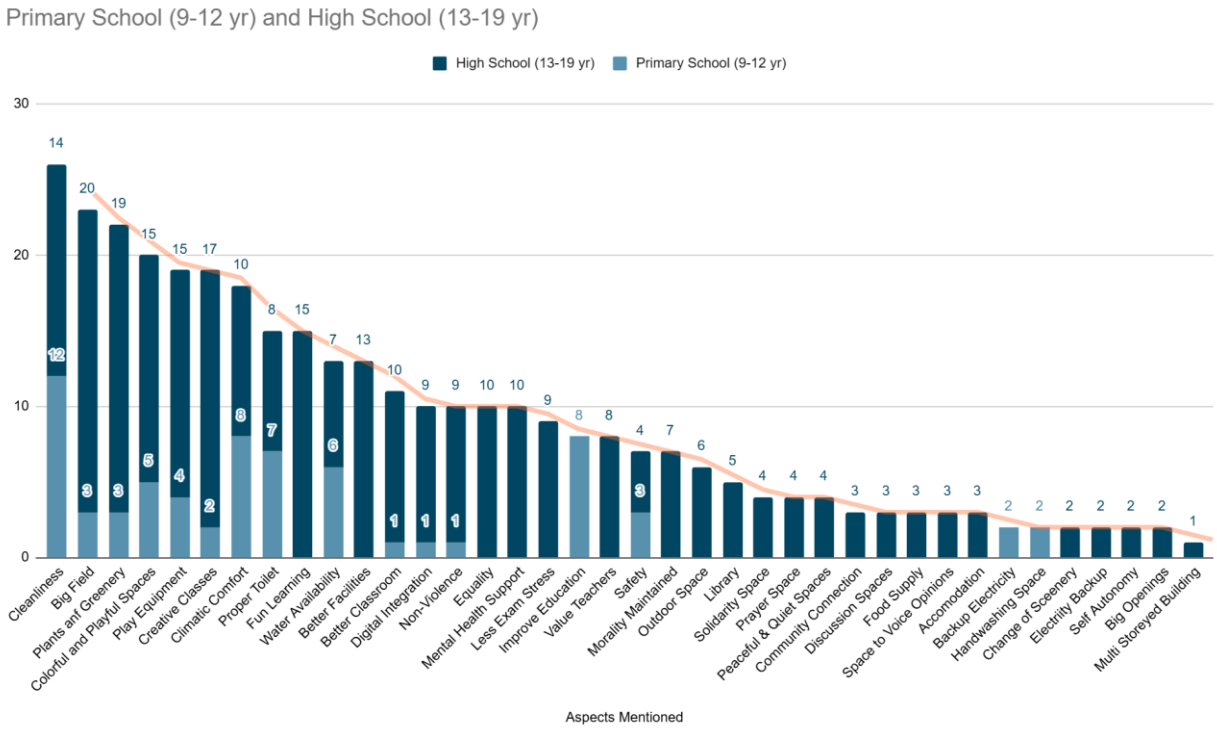

Figure 7. (Developed by the Authors) Based on the aspects the students mentioned, this hierarchy of children's wants has been created. The most frequently mentioned aspects were Cleanliness, Big Field, Plants and Greenery, Colorful and Playful spaces, Creative classes, Climatic comfort, and Proper Toilet.

7. Discussion

By cross-referencing the routine and space limitations, we can derive a generic formula to calculate the amount of space required to accommodate the hybrid teaching style. Based on the subject blocks, there is a minimum required space. To test whether the amount of space is sufficient, we can overlay the class routines to see whether the minimum spacing allows students to ample room. From cross-referencing to the given information, we can see that the required base spaces are sufficient to accommodate the students of Bosila Primary School. In this case, crowding does not need to be accounted for. Now to do the same for Bosila Government High School. By cross-referencing the routine and space limitations, we can derive a generic formula to calculate the amount of space required to accommodate the new teaching style. From cross-referencing the information, we can see that the required base spaces are sufficient to accommodate the students of Bosila Primary School. In this case, crowding does not need to be accounted for.

Table 5: Taking the necessary number of spaces and cross-referencing with the combined routine again, we can see that, under these conditions, we need to account for crowding among the students at this school.

Day	Class	Sec		P1	P2	P3	P4	Break	P5	P6	P7	P8	Minimum Viable Space	BLOCKS
Sunday	6	A	Assembly	His & S.Sci	Math	Bangla	-		Science	ICT	English	-		
	6	B		Bangla	-	Career	His & S.Sci		PE	-	Math	ICT		
	7	A		Math	English	Science	-		His & S.Sci	PE	Art & Culture	-		
	7	B		Career	His & S.Sci	English	-		Math	Bangla	ICT	-		
	8	A		Science	-	His & S.Sci	Bangla		Religion	Math	-	Career		
	8	B		English	PE	Religion	Math		His & S.Sci	-	Bangla	Science		
	9	A		Religion	Science	-	-		English	Art & Culture	His & S.Sci	Bangla		
	9	B		-	ICT	-	English		Bangla	Career	-	Science		
	10	A		His & S.Sci	Religion	Optional	-		ICT	Bangla	Science	English		
	10	B		ICT	English	Math	Science		Optional	Science	Career	PE		
				2	2	2	2	0	2	2	2	2	2	Language & Communication
				2	2	2	2	0	2	2	2	2	2	Critical Thinking & Experimentation
				2	1	1	0	0	1	2	2	2	2	Practical Daily Skills
				2	1	1	1	0	2	0	1	0	2	Historical Contexts
				0	0	0	0	0	0	1	1	0	1	Creativity & Aesthetics
				0	1	0	0	0	1	1	0	1	1	Physical and Mental Health

*Note: **"Language & Communication"** and **"Historical Context"** need expansion based on Overcrowding*

8. Conclusion

From the study and discussion, the following methods can be used to accurately account for how much space a school that is designed for growth, not only for the internally displaced children but also for every child attending, can be calculated. Using the necessary space number as a base and accounting for crowding by overlaying the routines to map out the activity for each period yields an accurate estimate of the minimum space needed for the children's most efficient learning.

Table 6: Space amount recommendations based on Study, accounting for crowding. Pre-Primary and Primary School

Blocks	Pre-Primary		Primary School				
	Total Books per Block	*Note*	Total Books Per Subject	Total Books per Block	Number of Spaces		Note
					Necessary	For Crowding	
Day Care & Pre-Primary	**2**		0 0	**0**			
Critical Thinking & Experimentation	**0**	*Flexible Space (3:4)*	5 3	**8**	**2**	x	Math Space, Science Space, Outdoor Space; 9x12 (3:4)
Language & Communication	**0**		5	**10**	**2**		***Classrooms; 6x9 (2:3)***

			5				
Historical Contexts	**0**		3	**3**	**2**		
			0				
			0				
Practical Daily Skills	**0**		0	**0**	**1**	x	
			0				
			0				
			0				Play & learn; 9x12 (3:4)
Creativity & Aesthetics	**0**		0	**0**	**1**	x	
			0				
Physical-Mental Health	**0**		0	**0**	**0**		
			0				
Financial Education	**0**		0	**0**	**x**		
			0				
Beliefs	**0**		3	**3**	**x**		
			24				
-			*Note: All Books are Mandatory for the Primary Stage*		**4**		**Necessary Block Specific Spaces Needed**

Table 7: Space amount recommendations based on Study, accounting for crowding. High-School

Blocks	**High School**				
	Total Books Per Subject	**Total Books per Block**	**Number**		**Note**
Day Care & Pre-Primary	**0**		**Necessary**	**For Crowding**	
	0				

Critical Thinking & Experimentation	7 11	**18**	**2**		Math-Physics, Chemistry-Biology; 9x12 (3:4)
Language & Communication	15 10	**25**	**1**	**1**	Bangla - English; 9x12 (3:4)
Historical Contexts	9 5 2	**16**	**1**	**1**	Social Science; 9x12 (3:4)
Practical Daily Skills	5 5 5 5	**20**	**2**		Handiwork, Digital; 9x12 (3:4)
Creativity & Aesthetics	5 5	**10**	**2**		Art, Acoustic; 9x12 (3:4)
Physical-Mental Health	5	**5**	**1**		Equip. Storage
Financial Education	2 2 2	**6**	**2**		***Classrooms; 6x9 (2:3)***
Beliefs	10	**10**			
-	**110** *Note: Combination of Mandatory & Optional Books*		**10**		**Necessary Block Specific Spaces Needed**

After combining the analysis parts to create a framework that can give the proper number of spaces for a real school in Bangladesh to function, the characteristic of the space needs to be determined as well. Based on the necessary literature study and workshop data, recommendations for Spatial Characteristics for the spaces based on the study are given.

- Ensuring the physiological needs of children when designing a space so that students can be prepared to learn without external worries to their safety.
- Creating flexible and active learning environments through design elements and furniture that support physical activity, exploration, and discovery.
- Incorporating nature into education through outdoor areas, gardens, and landscaping.
- Using a range of sustainable materials to support sensory and cognitive development.
- Decentering space around teachers to focus more on student centric layouts.
- Facilitating community engagement by involving all necessary stakeholders in the planning process and creating connections between students and locals.
- Encouraging sustainability by engaging children in learning about the environment and aligning school practices with environmentally conscious practices as part of the design.
- Making space inclusive by creating spaces with diverse cognitive, sensory, and physical abilities.

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Conflicts of Interest
The authors report no conflicts of interest.

Data Availability Statement
The data supporting the findings of this study, including survey data, drawings, workshop outputs, literature databases, and coding scripts, are available from the corresponding author upon reasonable request. Certain materials related to workshop participants are not publicly available due to confidentiality and privacy considerations.

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Reference List
Allen, R., Lajom, E., Lindt, N., & You, D. (2023). *Children on the Move: Key terms, definitions and concepts*. International Data Alliance for Children on the Move (IDAC).

Bangladesh Bureau of Statistics. (2014). *Slum Census 2014*. বাংলাদেশ পরিসংখ্যান ব্যুরো. http://bbs.gov.bd/pages/static-pages/6922df13933eb65569e1faf0

NCTB, জাতীয় শিক্ষাক্রম ও পাঠ্যপুস্তক. (2026). *National Curriculum and Textbook Board (NCTB)*. Bangladesh National Information Portal. জাতীয় শিক্ষাক্রম ও পাঠ্যপুস্তক বোর্ড (এনসিটিবি). http://nctb.gov.bd/

Cannon Design, VS Furniture, & Bruce Mau Design. (2010). *The Third Teacher: 79 ways you can use design to transform teaching & learning*.

Christina Kwauk & Olivia M Casey. (2022). *A new green learning agenda*. Center for Universal Education at Brookings.

Cordeiro, V. C. (2024). Displaced children. *Humanium*. https://www.humanium.org/en/displaced-children/

Danielle Cohen. (2024). Why Kids Need to Spend Time in Nature. *Child Mind Institute*. https://childmind.org/article/why-kids-need-to-spend-time-in-nature/

Directorate of Primary Education. (2025). *Single and Double Shift Routine for Class 1 to Class 5*.

Directorate of Secondary and Higher Education. (2025). *Single and Double Shift Routine for Class 6 to Class 10*.

Dr. Justin Sung. (2023a, October 6). *Professional Development 1.0: The Impossible Problem of Education* [Video recording]. https://www.youtube.com/watch?v=gg2EVRYHknE

Dr. Justin Sung. (2023b, October 6). *Professional Development 2.0: Enablers of Learning* [Video recording]. https://www.youtube.com/watch?v=lWcG88FaKiU

Economic and Social Council of United Nations. (2001). *Guiding Principles on Internal Displacement (Handbook)* (2004th ed.). United Nations Publication. (Original work published 2001)

Eravia Veronica. (2020). *The Importance of Community Engagement in Education Management in Early Childhood*

Education in 4.0 Era. https://doi.org/10.2991/assehr.k.200715.023
Fumiyo Kagawa & UNICEF. (2022). *The Heat is On! Towards a Climate Resilient Education System in Bangladesh*. UNICEF.
Garden Montessori Schools. (2024, December 20). *Learning Garden Montessori School—Where Learning Is a Way of Life*. https://www.gardenmontessorischools.com/blog/learning-garden-montessori-school
Germanwatch. (2021, January 25). *Global Climate Risk Index 2021—World | ReliefWeb*. https://reliefweb.int/report/world/global-climate-risk-index-2021
IDMC. (2019). *GRID 2019 Global Report on Internal Displacement*.
Javier Sierra & Ángela Suárez-Collado. (2021). *Understanding Economic, Social, and Environmental Sustainability Challenges in the Global South*. https:// doi.org/10.3390/su13137201
Juan Alberto Almirón Cuentas & David Hugo Bernedo-Moreira. (2024). *Multisensory Design in Education: How Architecture Enhances the Learning Experience*. https://doi.org/10.56294/la2024104
Karen Reidy & UNICEF. (2020). *Bangladeshi children raise their voices and call for climate action on World Children's Day | UNICEF Bangladesh*. https://www.unicef.org/bangladesh/en/stories/bangladeshi-children-raise-their-voices-and-call-climate-action-world-childrens-day
Maria Montessori Institute. (2024, December 6). Why Movement is So Important for Children's Development. *Maria Montessori Institute*. https://www.mariamontessori.org/news/why-movement-is-so-important-for-childrens-development/
Marin Amin. (2024). *UNICEF: Bangladesh fourth in child displacement due to natural disasters*. Dhaka Tribune. https://www.dhakatribune.com/bangladesh/337398/unicef-bangladesh-fourth-in-child-displacement
Md Masud Parves Rana & Irina N. Ilina. (2021). *Climate change and migration impacts on cities: Lessons from Bangladesh*.
Mike Davis. (2006). *Planet of Slums*.
Nasir, Gina B. Garcia, Bernadette Ortinero-Gallardo, & Ma Cristina Dominguez Ravela. (2024). *Sustainability in the World of Education Steps Towards a Green Future*.
Øverland, K., & Nag, H. E. (2023). Children's basic needs: How do we create resilience in children, so they can thrive and sustain positive development? In *Change Agents* (pp. 33–54). Scandinavian University Press. https://doi.org/10.18261/9788215057903-23-02
Roald Høvring & Norwegian Refugee Council. (2023, August 10). *10 reasons why we must invest in education for displaced children*. https://www.nrc.no/shorthand/stories/10-reasons-why-we-must-invest-in-education-for-displaced-children/index.html
Simon Ingram. (2019). *A Gathering Storm- Climate Change Clouds the Future of Children in Bangladesh*. UNICEF.
UNESCO. (2021). *Global Education Monitoring Report 2021 – Central and Eastern Europe, the Caucasus and Central Asia – Inclusion and education: All means all*.
UNHCR. (1997). *Guidelines on Policies and Procedures in dealing with Unaccompanied Children Seeking Asylum*.
UNHCR. (2012). *UNHCR-Displacement and Disaster Risk Reduction*.
UNICEF. (2021). *The climate crisis is a child rights crisis- Introducing The Children's Climate Risk Index*.
UNICEF. (2023a). *Analysis of the CCRI for Least Developed Countries*.
UNICEF. (2023b). *Children displaced in a changing climate | UNICEF*. https://www.unicef.org/reports/children-displaced-changing-climate
UNICEF. (2024, November 20). *The State of the World's Children 2024 | UNICEF*. https://www.unicef.org/reports/state-of-worlds-children/2024
UNICEF. (2025). Child Displacement and Refugees. *UNICEF DATA*. https://data.unicef.org/topic/child-migration-and-displacement/displacement/
UNICEF Bangladesh. (2025). *Data on the situation of children in Bangladesh | UNICEF Bangladesh*. https://www.unicef.org/bangladesh/en/data-situation-children-bangladesh
UNICEF & General Economics Division (GED). (2021). *Children on the Move: A Rapid Assessment and Policy Issues of Bangladesh*.
United Nations. (1951). *Convention relating to the Status of Refugees*.
United Nations. (1989). *Convention on the Rights of the Child*.
United Nations & European Union. (2020). *International Recommendations on Internally Displaced Persons Statistics (IRIS)*.
Wikipedia. (2025). *Maslow's hierarchy of needs*. https://en.wikipedia.org/wiki/Maslow%27s_hierarchy_of_needs#/media/File:Maslow's_Hierarchy_of_Needs_Pyramid_(original_five-level_model).png
Wikipedia. (2026). Bloom's taxonomy. In *Wikipedia*. https://en.wikipedia.org/w/index.php?title=Bloom%27s_taxonomy&oldid=1341429846