



UNIVERSAL DESIGN APPROACH OF MAINSTREAM  
PRIMARY SCHOOLS FOR THE CHILDREN WITH  
PHYSICAL DISABILITIES (CwPDs) IN BANGLADESH:  
A STUDY IN NAOGAON DISTRICT, RAJSHAHI  
DIVISION

BY

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A thesis submitted in fulfillment of the requirement for the  
degree of Master of Science (Built Environment)

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## **ABSTRACT**

The objectives of this study are firstly to understand how the parents and the primary schools are handling Children with Physical Disabilities (CwPDs), secondly to identify the challenges faced by the CwPDs particularly during school hours and thirdly the application of Universal Design Guidelines (UDG) suitable to mainstream primary school is also a significant aspect of this study. The study highlighted the need for barrier-free access for the CwPDs. This research is conducted in one of the 64 districts (Naogaon) in Bangladesh. The methodology is based on access audit checklists, case studies, observations and interviews of the CwPDs and their parents. The findings from the 38 case studies which indicate the need for understanding multi-dimensional factors such as lack of awareness among people and authority in providing facilities for the CwPDs. It is evident from the access audit checklist that the provision of accessible features like pathways, main entrances, ramps, corridors, toilets, had not to be made to fulfil the needs of CwPDs. This study also indicates that the compliance towards UDG for accessible design is not being applied in general. Despite having scope for specialized teaching and care services for the CwPDs, the mainstream primary schools fail to draw the attention of the relevant authorities. This study recommends for ensuring adequate support materials coupled with all of the technical assistance. All these can be made consistent with Universal Design Approach (UDA) of mainstream primary school for the CwPDs in any developing country like that of Bangladesh. This holds to both for rural and urban areas for their built environment.

## ملخص البحث

تهدف هذه الدراسة أولاً إلى فهم كيفية تعامل الوالدين، والمدارس الابتدائية مع الأطفال ذوي الإعاقات البدنية (CwPDS)، وثانياً لتحديد التحديات التي تواجهها CwPDS خاصةً خلال ساعات الدوام المدرسي، وثالثاً تطبيق إرشادات التصميم العالمي (UDG) المناسبة للمدرسة الابتدائية بوصفها جانباً مهماً من هذه الدراسة. سلطت الدراسة الضوء على الحاجة إلى الوصول بدون عوائق إلى CwPDS. قد تم إجراء هذا البحث في إحدى المقاطعات الـ 64 (Naogaon) في بنغلاديش. تعتمد المنهجية على قوائم مراجعة التدقيق في الوصول، ودراسات الحالة، والملاحظات، والمقابلات مع CwPDS وأولياء أمورهم. أسفرت نتائج 38 حالة فردية عن الإشارة إلى الحاجة لفهم عوامل متعددة الأبعاد، مثل قلة الوعي بين الناس، والسلطة المسؤولة عن توفير المرافق لـ CwPDS. ويتضح من قائمة مراجعة تدقيق الوصول أن توفير ميزات الوصول مثل المسارات، والمداخل الرئيسية، والمنحدرات، والممرات، والمراحيض المجهزة لهم، لم تَفِ باحتياجات CwPDS. وتُشير هذه الدراسة أيضاً إلى أن الامتثال لـ UDG لتصميم يسهل الوصول إليه لا يتم تطبيقه بشكل عام. على الرغم من وجود مجال لخدمات التعليم والرعاية المتخصصة لأصحاب العمل، إلا أن المدارس الابتدائية الرئيسية لم تستقطب انتباه السلطات المعنية. توصي هذه الدراسة بضممان وجود مواد الدعم الكافية إلى جانب توفير كل المساعدات التقنية لهم. كل هذا يمكن أن يتناسب مع منهج التصميم العالمي (UDA) للمدرسة الابتدائية المتبع لذوي الحاجات الخاصة CwPDS في أي دولة نامية مثل بنغلاديش. وهذا ينطبق على كل من المناطق الريفية والحضرية على البيئة المبنية.

## APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion, it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a thesis for the degree of Master of Science (Built Environment).

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## LIST OF ABBREVIATIONS

APSC	Annual Primary School Census
ADA	Americans with Disabilities Acts
BANBEIS	Bangladesh Bureau of Educational Information and Statistics
BBS	Bangladesh Bureau of Statistics
BRAC	Bangladesh Rural Advancement Committee
CS	Community School
CwDs	Children with Disabilities
CwPDs	Children with Physical Disabilities
DPE	Directorate of Primary Education
DPEO	District Primary Education Officer
EAHM	Ebtedayee Attached to High Madrashah
EBM	Ebtedayee Madrashah
EECE	Ebtedayee Education Completion Exam
GPS	Government Primary School
KG	Kindergarten
LCs	Learning Centres
LGED	Local Government Engineering Department
M&E	Monitoring and Evaluation (Division)
MOC	Ministry of Commerce
MoE	Ministry of Education
MoPME	Ministry of Primary and Mass Education
MoSW	Ministry of Social Welfare
NER	Net Enrolment Rate
NGO	Non-Government Organization
NIR	Net Intake Rate
NNPS	Newly Nationalized Primary School
Non-KPI	Non-Key Performance Indicators
NRNGPS	Non-Registered Non-Government Primary School
NSA	National Student Assessment
PAHS	Primary Attached to High School
PECE	Primary Education Completion Examination
PEDP II	Second Primary Education Development Programme
PEDP III	Third Primary Education Development Programme
PPE	Pre Primary Education
PTI	Primary Training Institute
PwDs	People with Disabilities
RNGPS	Registered Non-Government Primary School (currently NNPS)
ROSC	Reaching Out-of-School Children
UD	Universal Design
UDA	Universal Design Approach
UDG	Universal Design Guidelines
UNESCO	United Nations Education Scientific and Cultural Organization
WHO	World Health Organization

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 INTRODUCTION**

This chapter explored the necessities of the Children with Physical Disabilities (CwPDs) to highlight the attitudes of society, institutes, and government towards disability. The fundamental elements of Universal Design (UD) explored in the context of the architectural issues affecting CwPDs in Bangladesh and UD principles. This chapter introduces significant characteristics of the research, i.e., the research background, problem statements, research objectives, research questions, research methodology, scope and limitations and the significance of the study. The findings would be particularly helpful for the CwPDs, institutes, government, professionals and the built environment in the building industry.

### **1.2 RESEARCH BACKGROUND**

The current population of Bangladesh is over 166 million as of August 2018, based on the most recent United Nations estimates. The gender ratio of male and female of the total population was 1.020. There are 1,020 males per 1,000 females in Bangladesh. This male female ratio appears to be higher than the global gender ratio (Country Meters Information, 2018). There is no precise information on the accurate number of People with Disabilities (PwDs) in Bangladesh (<http://dpi.org/>). Nevertheless, the PwDs in Bangladesh indicated 15 percent according to the World Bank estimation (WHO, 2011).

The Bangladesh government approved first wide-ranging legislation on disability, i.e., the Bangladesh People with Disability Welfare Act 2001 in April 2001. In 2002, the National Action Plan for PwDs proclaimed as a mandate from the Prime Minister's office. The National Action Plan stipulates that ought to be done to grasp the objectives of the Disability Welfare Act in 5 areas, like education, health, employment, accessibility, and transportation (Bhambani, and Voss, 2003). The first National Policy for the disabled was approved in 1995 by the government. The policy has integrated the disability into the country's development plan. The action plan was retrieved from the policy in 1996 (Ackerman et al., 2005).

However, the legislation of Disability Welfare Act was approved in 2001. To fulfil the need for and creation of opportunities, the government of Bangladesh is now bearing in mind to the adjustment of the law for the PwDs (Rahman and Ohmori, 2014). Noman and Anisuzzaman (2011) indicate that CwPDs should be mainstreamed with the provision of just facilities within the school include changing the perception of parents, teachers and other concerned people to provide training among the teachers on inclusive education, provide accessible materials and implication of existing policies. The Ministry of Education and the Ministry of Primary and Mass Education are to provide the education of all children within the country to fulfil the aim of Universal Primary Education. It is assumed that numbers of CwPDs are getting enrolled in mainstream school when the National Education Policy 2010 approved.

Universal Design (UD) is a globally practiced approach that also can be practiced in Bangladesh. The UD is for everyone. The Universal Design Approach (UDA) provides useful regulation on the universal design of the buildings, places, and facilities for everyone. The built environment ought to be barrier-free and accessible to



all including those with physical mobility, visual impairment, hearing impairment, and the aged. Centre for Excellence in Universal Design (2012) states that UD places differing human qualities at the mind of the transformation of design. Therefore, the buildings and environments can be designed to address the issues of all users. Consequently, it covers all persons heed to their age and the individuals with specific physical, tactile, emotional well-being or scholarly capacity or inability.

It is expected that the design ought to be “inclusive” for all people despite some exclusiveness. World Health Organization (WHO) statistics indicates that at least 10% of the industrialized world’s population has several forms of disability. The issues related to the incorporate decreasing vision and mobility restrictions such as sticks, walking frames, wheelchairs, and hearing difficulties. A well-designed barrier-free and accessible buildings are less valuable if the user cannot use it properly (Kwan, 2003).

The intention of UD is concerned about access and furthermore making a more comprehensive and disabled-friendly environment in the school. The schools based on taking UD principles will be fascinating because they will enable children to learn, create, and make interesting things. Space, light, materials and even shading can influence color thereby affecting the way education is experienced. Schools can make fantastic utilization of these components in making structures and grounds which the needs and cravings of the students and staff (HEART, 2013).

It is essential to develop the need for inclusion of the CwPDs in the mainstream school setting. Of course, inclusive educational space requires the inclusion of children with all types of disabilities. Bangladesh shows concern for only special school for the CwPDs. It also needs to oversee the mainstream school as well. This research

investigates the existing school environment and facilities for the CwPDs and suggests the UD requirements for inclusive school design (UNESCO, 1994).

The United State has founded an entire lawful system in ensuring PwDs from segregation in work and access to administrations and offices for level with open doors as an issue of civil rights (Kose, 2010; Manley, 1996). However, from the United Nations, the start of the United Nations International Year of PwDs in 1982 took place once during the international decade of PwDs between 1983 and 1992 (Kose, 2010; Parker, 2001b). It has influenced promotional issues in the Asia - Pacific region. The development also began with the consolidation of the Disability Discrimination Act 1995 as a legal measure based on rights to achieve social thinking for PwDs in the UK.

Bangladesh does confront with the issues of PwDs in the country. The principal issues are not highlighted yet. The circumstance of PwDs in the rural and urban areas are not similar in Bangladesh (UPR, 2013). This research will outline the developments for the CwPDs and will argue that the quest for 'education for all' is an essential element in the struggle for a rational society. This study specifically focused and elaborated on the aspect of UD and improved facilities for the CwPDs in mainstream school complex. This is to suggest a design improvement for the inclusive design of the study. The government of Bangladesh is still dealing with the privileges of PwDs.

### **1.3 PROBLEM STATEMENT**

At present, there are exists lack of comprehensive empirical studies to determine inclusive education in the mainstream primary education system for the CwPDs in Bangladesh. There are some micro studies that recommend a frequency rate of disability. Bangladesh government is promoting inclusive education in its Education

and Development Plan Phase-I from 1997-2002. Phase III continued in 2007, but the school buildings are still inaccessible (UPR, 2013). Besides, Bangladesh has the building code that determines accessibility for all people including PwDs. The National Building Code 2008 is considered to be promoting disability-friendly environment. However, the code's rules and guidelines are still not well practiced during construction phase of both government and private school buildings (UPR, 2013).

It is obvious that there are less educational institute with accessible physical infrastructure and other facilities. It means there is the need for ensuring inclusive education for all in Bangladesh. The inaccessible physical infrastructure of educational institutes is merely depriving the CwPDs of one of their fundamental human rights, i.e., rights to education. The government of Bangladesh is also not quite aware of the issue of inclusive education in the mix method education system for the CwPDs.

Universal access is an inseparable part of UD. It is considered to overcome physical barriers. Physical barriers in the built environment need to find the hidden barriers to universal access. For instance, one of these barriers to the accessible school building is insufficient and unsuitable facilities for all users of the CwPDs (Salmi, 2007).

#### **1.4 RESEARCH OBJECTIVES**

The following objectives are to investigate the situation of CwPDs in education and to identify ways of overcoming the situation –

- 1) To understand how the parents are handling CwPDs for joining the mainstream primary school.

- 2) To identify the challenges faced by CwPDs particularly during school hours in the mainstream primary schools.
- 3) To study the application of Universal Design Guidelines (UDG) suitable to mainstream primary school.

## **1.5 RESEARCH QUESTIONS**

The following questions are identified as necessary for this study -

- 1) How the parents handling CwPDs to join the mainstream primary school?
- 2) What are the challenges faces by CwPDs particularly during school hours in the mainstream primary schools?
- 3) How to implement Universal Design Guidelines (UDG) suitable to mainstream primary school?

## **1.6 RESEARCH METHODOLOGY**

The available literature on the CwPDs in the mainstream primary school and related studies is reviewed. This study carried out the fieldwork assessing case studies in Bangladesh to identify barriers and issues that need to be resolved concerning accessibility for the CwPDs. The qualitative research techniques used for the study are the case studies through access audit, direct observations, and interviews with the CwPDs and their parents.

Table 1.1: The Matrix of the Research Framework

<b>Research Objectives</b>	<b>Research questions</b>	<b>Research Methodology</b>	<b>Data Analysis</b>
1. To understand how the parents are handling CwPDs for joining the mainstream primary school.	1. How the parents handling CwPDs to join the mainstream primary school?	<ul style="list-style-type: none"> <li>• Case Study through Access Audit</li> <li>• Direct observation</li> <li>• Interview with the CwPDs and their parents.</li> </ul>	Qualitative Method
2. To identify the challenges faced by CwPDs particularly during school hours in the mainstream primary schools.	2. What are the challenges faces by CwPDs particularly during school hours in the mainstream primary schools?	<ul style="list-style-type: none"> <li>• Case Study through Access Audit</li> <li>• Direct observation</li> <li>• Interview with the CwPDs and their parents.</li> </ul>	Qualitative Method
3. To study the application of Universal Design Guidelines (UDG) suitable to mainstream primary school.	3. How to implement Universal Design Guidelines (UDG) suitable to mainstream primary school.	<ul style="list-style-type: none"> <li>• Literature review</li> <li>• Universal Desdign Guidelines</li> </ul>	Qualitative Method

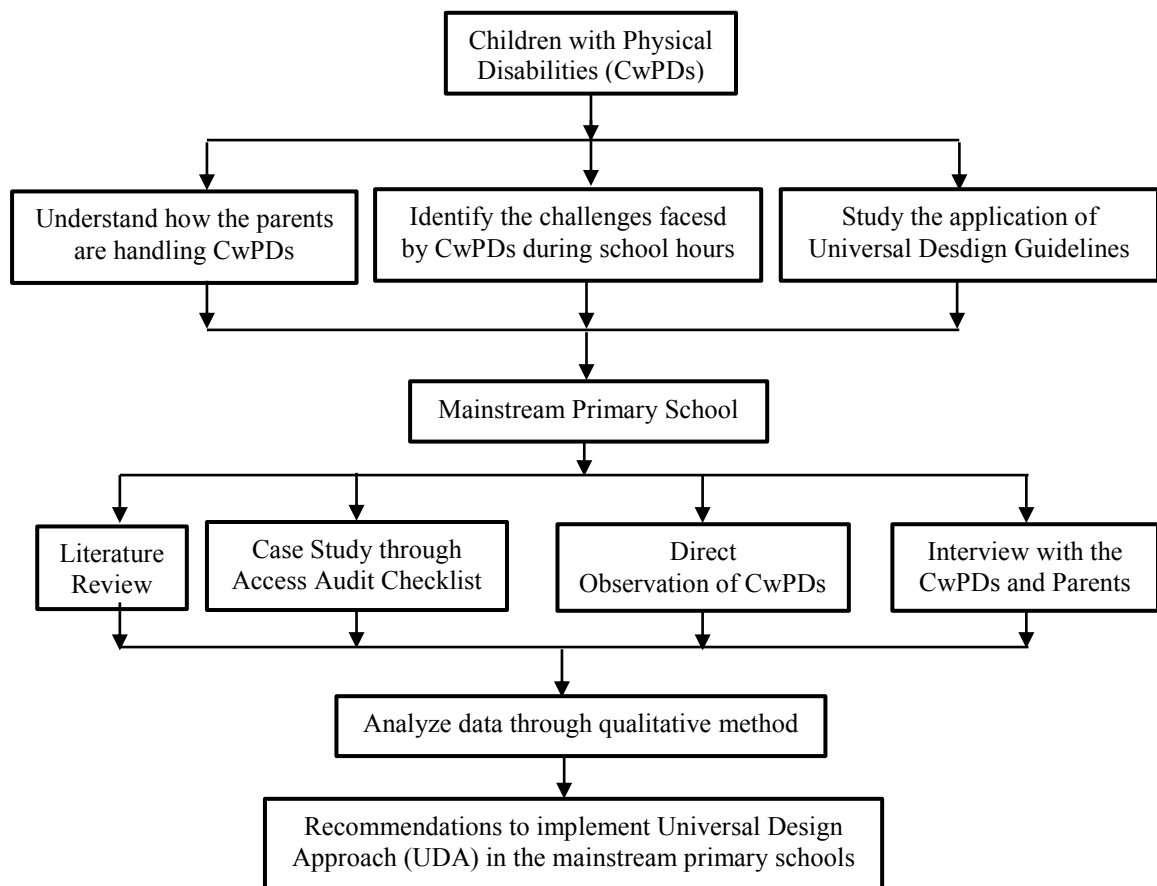


Figure 1.1: Conceptual Research Framework

## 1.7 SCOPE AND LIMITATIONS OF THIS STUDY

This research undertook literature reviews on CwPDs and UD approach in the friendly school environment. The case studies are meant to evaluate the design parameters for the CwPDs, non-disabled children and their parents. The conditions of the mainstream primary schools and implication of building codes and standards for the CwPDs are examined to identify primary design aspects that are beneficial to them. On the other hand, the sole limitation of the research is that it does not include any demand alteration of the existing school environment.

## **1.8 SIGNIFICANCE OF THE STUDY**

The significance of this study refers how to evaluate the existing facilities in the mainstream primary schools for the CwPDs, non-disabled children and their parents. This study will also look into the opportunities for specialized care for the CwPDs in the mainstream primary school. There are teachers and students who will also provide specialized care services and facilities for the CwPDs with the educational support materials and other technical assistance required for participating at the mainstream primary school.

## **1.9 STRUCTURE OF THESIS**

The first chapter begins with a background study and explains successively the problem statements, research questions, research objectives, scope and limitation of the study, the meaning of the study and the thesis outline. The second chapter deals with demography of Bangladesh, background of study area, education system in Bangladesh the national literacy policy of Bangladesh, national legislation and policies, and the disability situation in Bangladesh. Based on the existing knowledge available, an attempt will be made to find out the research gap and methodology of the study at the end of this chapter. The third chapter studies on Universal Design Approach (UDA). The methodology of the research is discussed in chapter four. Chapter five discussed case study analysis. Conclusion & recommendations are made in Chapter six.

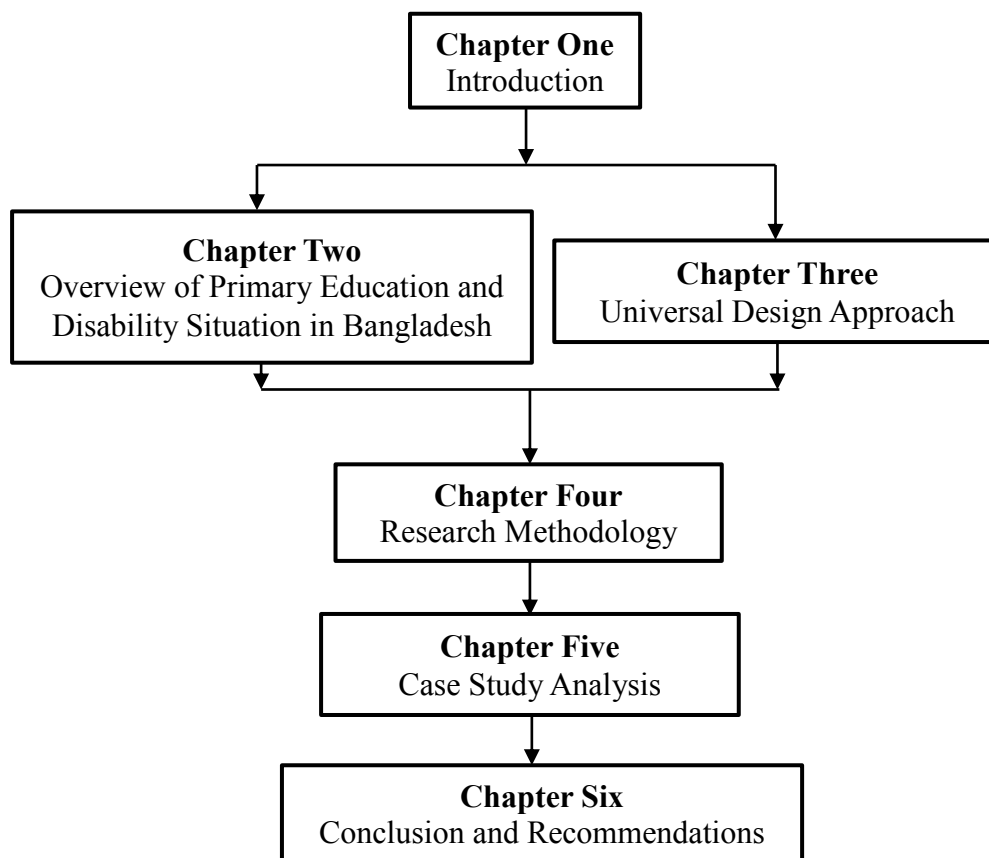


Figure 1.2: Thesis Structure

## 1.10 CONCLUSION

To conclude, this chapter has focused on the background of the research and described the problem statement, research questions, research goals, scope and limitation of the study, the meaning of the study and the thesis outline. This chapter also emphasis many issues and gaps facing in the school environment. The prospect for more a widely conceived UDA aims at diminishing some challenges. However, the practice of UD is in very early stage to tackle the issues in the mainstream primary schools in Bangladesh. This research aims to evaluate the facilities provided for the CwPDs and support the parents to the mainstream primary schools.