

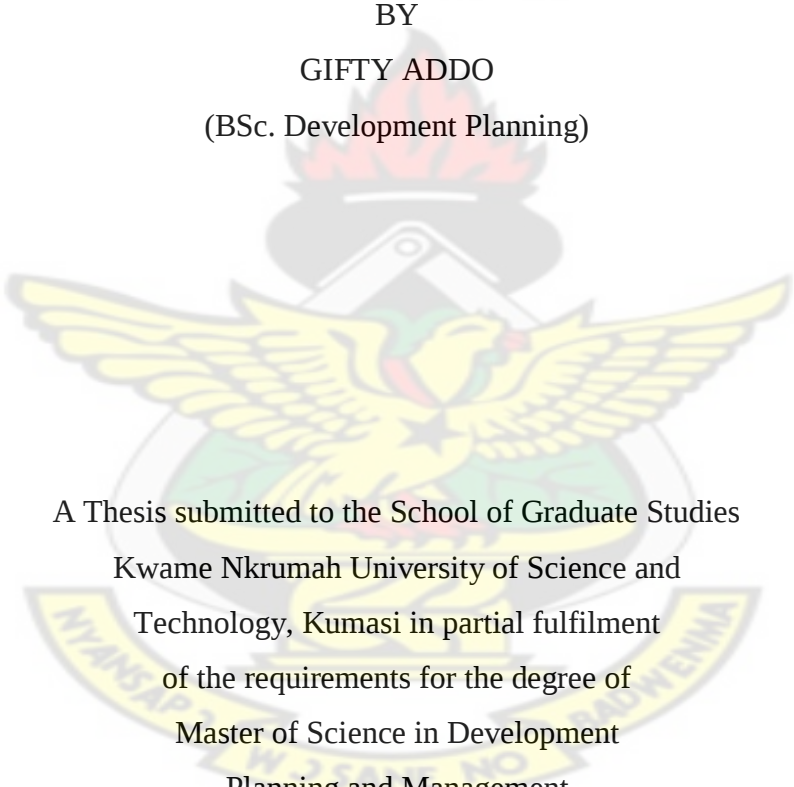
**ANALYSIS OF BARRIERS TO CHILDREN WITH MOBILITY IMPAIRMENT IN
BASIC EDUCATION IN ACCRA METROPOLIS**

KNUST

BY

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(BSc. Development Planning)



A Thesis submitted to the School of Graduate Studies
Kwame Nkrumah University of Science and
Technology, Kumasi in partial fulfilment
of the requirements for the degree of
Master of Science in Development
Planning and Management

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DECLARATION

I hereby declare that this submission is my own work towards the degree in MSc Development Planning and Management, and that to the best of my knowledge it contains neither materials previously published by another person or materials that have been accepted for the award of any other degree by the University or any other University except due acknowledgment has been made in the text.

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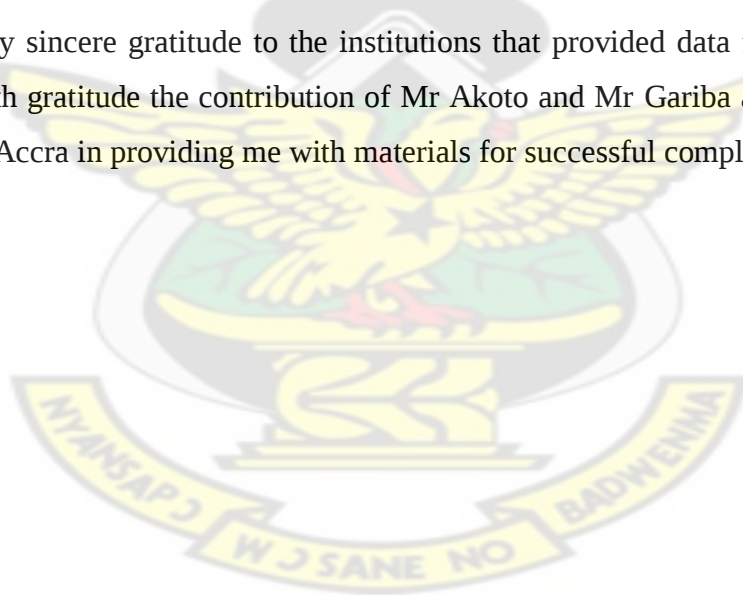
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DEDICATION

This work is dedicated to my father Mr Evans Boi Addo of blessed memory, and my mother Joana Ossei Baafour, who believes that the greatest investment of all is to invest in the education of their children.

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ABSTRACT

Despite the provisions made in the 1992 Constitution on the rights of disabled persons and the passage of the Persons with Disability Act 715 by the Parliament of Ghana in 2006, little has been done to enhance access to basic education for people with disabilities. The expectation was that, existing basic educational facilities would be retrofitted and made physically accessible to the disabled in order to create equal opportunities for pupils living with disabilities.

This research uses descriptive-exploratory design to investigate the level of accessibility of the educational facilities at the basic schools in Accra. Surveys were conducted with relevant institutions with the use of interview guides. In all thirty-three pupils in twenty-two schools were surveyed and ten disabled drop-out children were surveyed as well. Fifty facilities within ten schools, one from each sub-metro were later audited using international standards, building codes, regulations and guidelines as benchmarks for assessments.

The research revealed that despite the progress made with the help of philanthropist organisations and Parent Teacher's Association (PTA), most basic schools pupils with mobility impairment still encountered barriers such as discrimination, steps, narrow doorways and desk space, lack of seats for wheelchair users, lack of space for manoeuvring, open gutters and slippery floors. The audit showed that ramps constructed in many schools did not meet the minimum international standards. These findings point to the need for an extensive civic education for the general public on disability issues and funding to retrofit public buildings. Also, it is recommended that at least one entrance per facility should be accessible to PWDs by school authorities in Accra. The Ministry of Education should revise the teacher training materials to reflect inclusive education methods and adequate information on children with disabilities. The government should increase expenditure and budget allocation on inclusive education in Accra.

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ACRONYMS

AMA	Accra Metropolitan Assembly
AusAID	Australian Agency for International Development
DFID	Department for International Development
DMBE	Design Manual for a Barrier Free Environment
EFA	Education for All
GES	Ghana Education Service
IE	Inclusive Education
MOESS	Ministry of Education, Science and Sports
OECD	Organisation for Economic Co-operation and Development
PWD	Pupils with Disability
SpED	Special Education Division
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
WHO	World Health Organisation



CHAPTER ONE

BACKGROUND TO THE STUDY ON CHILDREN WITH DISABILITIES

1.1 Introduction

Education is a lifelong process which contributes to human capital formation and a key determinant of personal well-being and welfare (OECD, 2010). At the basic level, education does not only comprise of reading and writing but involves acquiring knowledge, building one's attitude and motivating a child to develop to become beneficial to the society (UNESCO, 2000). Every child has an equal right to attend school because education is important for all children, but even more so for children with disabilities, whose social and economic opportunities may be limited.

According to United Nations Development Programme (2009), all disabilities that affect movement and posture of a person are termed as physical disabilities. This encompasses mobility, visual and hearing impairment, chronic diseases, spinal cord injury and traumatic brain injury. Disability as a human condition has gained increasing attention in recent times. As the World Health Organisation (2011) pointed out, almost everyone at some point in their lives will encounter either temporary or permanent impairment. Disability may be acquired from birth or as a result of an accident, illness, malnutrition, and drug or alcohol abuse. It partially or completely limits a person's ability to carry out the normal functions of life and can be seen in people with difficulty in seeing, moving, hearing, speaking, learning, feeling in the feet and hands, people with strange or unusual behaviour and individuals with fits.

Approximately 10 percent of the world's total population are impaired in one way or the other out of which 500 million are mobility impaired (Baser 2008, cited in Danso et al., 2011). Moreover, about 10 percent of the world's children have significant impairment. 80 percent of these children live in developing countries (UNICEF, 2007). The World Bank cited by Calderbank (2009) estimates that out of the 115 million children worldwide who are not in school, 30 to 40 percent are children with disabilities. Similarly, United Nations Children's Fund (UNICEF, 2013) estimates that, 10 percent of disabled children worldwide get access to education and 5 percent of that are able to complete school. According to the Education For All (EFA) Global Monitoring Report (2010) children with disabilities are one of the main groups which are widely excluded from quality education. Global goal of

achieving universal access to basic education cannot be realised if disabled children are not included (UNICEF, 2013). Lack of education for a person with disability does not only encompass being able to get to school or to afford the school, but also of accessibility and suitability of the school to attend to their needs (Grut and Ingstad, 2006). According to Uslu (2008), the needs of the disabled are as important as the abled; therefore it is essential to incorporate their physical accessibility requirements in the planning and designing stages of construction. Physical accessibility implies making public places open to every individual, irrespective of their special need to give equal opportunities to all (Yarfi, 2011).

In Ghana, people with disabilities in ancient years were abused by neglect, superstition and exploitation (Anderson, 2004). In the views of Avoke and Avoke (2004), people with disabilities were perceived to be possessed with evil spirits, who bear curses and anger from gods for breaking taboos by their parents or families. As a result children with disabilities were either formally excluded from the mainstream education system or receive less favourable treatment than other children (Yekple and Avoke 2006).

However, in recent years there has been growing drive towards full inclusion. This was seen in the enactment of the Disability Rights Bill which was passed into law in the year 2006. The Disability Act is the legal framework which addresses the needs of persons with disability and also promotes their rights in the country. More so, as follow up to the international clarion calls towards inclusive education due to its numerous benefits (Stainback & Stainback, 1996; Winzer, 2005; D'Alonzo, Giordano & Vanleeuwen, 1997) and in line with the Salamanca Declaration which recognises the need to work towards "school for all" (UNESCO, 1994), Ghana established pilot inclusive education in ten districts within three regions, and upon its success, extend it to other regions (Agbenyega, 2007).

The three (3) regions include Greater Accra Region, Central Region and Eastern Region, however in the Greater Accra Region, Amasaman, Ada and Accra Metro were chosen for the pilot study. These projects led by Professor Ainscow in 1996 had an objective to fully implement inclusive education by 2015 (Yekple & Avoke, 2006). As Gadagbui (2009) pointed out, inclusive education is a process which ensures that children with and without disabilities have equal access to participate in basic education using the same facilities within the school settings. Educational facilities include classroom, canteen, playground, washroom, libraries among others. It is critical to make these facilities accessible to Pupils with Disabilities (PWDs) to prevent their exclusion.

This study assesses the progress the Accra Metropolitan Assembly (AMA) has made in addressing the needs of the disabled in basic schools. The question is whether AMA has made substantial efforts in meeting the physical accessibility needs of pupils with mobility impairment at the basic level of education.

1.2 Problem Statement

The Ghana Statistical Service (2012) estimates that, at least 8 percent out of the estimated population 9,760,724 Ghanaian children are disabled in one way or the other. Although the right to education is internationally recognized, it is not completely fulfilled in Ghana. There is a reluctance to recognize the competences of children with disabilities in educational institutions.

In relation to Article 6 and 7 of the Disability Act (Act 715), it was expected that existing basic educational facilities that provided public services would be restructured to be accessible to the disabled, in order to create equal opportunities for pupils living with disabilities in society. However, ten (10) years after the commencement of the pilot study, the main idea behind this law is yet to be experienced in the piloted schools as inadequate physical accessibility of the built environment for the mobility impaired is still being experienced in schools (Amos-Abanyie et al., 2012). Most educational institutions still discriminate against children with mobility impairment due to lack of knowledge, funds, misinformation, large class size and socio-economic values towards disability (Agyare-Kwabi, 2013). Moreover, most teachers believe inclusive education creates more work for them and express negative perception about inclusive education. This implies that for inclusive education to be attained in the country there is the need to ensure sensitization of citizens and institutions on disability.

Preliminary investigation suggests that distance from schools is also a major constraint for the mobility impaired pupil in Accra. These children apply a lot of energy when walking, the farther the location of the school, the more discouraged they are to attend school. Some have to resort to boarding buses which are not user friendly to school (Theunynck, 2009). Moreover, educational facilities such as the washrooms, canteens and playing grounds in most cases are disability unfriendly. Mobility impaired children have to be supported by their friends and teachers whenever they want to use these facilities making them always

dependent on others. This cause absenteeism and finally leads to school drop-out among disabled children in Accra.

In view of this, the study aims to analyse the physical barriers that hinders Children with Disabilities (CWDs) from participating in basic education.

1.3 Research Objectives

The research seeks to analyse physical barriers in basic schools in Accra which limit the educational opportunities of mobility impaired pupils. The study is intended to sensitise the general public to the needs of PWDs in educational facilities in Accra.

From afore, the study will specifically achieve the following objectives:

1. To identify and the barriers that impede integration of PWD's at the basic level.
2. To assess the extent to which the physical needs of the disabled has been included in the educational facilities at the basic level.
3. To recommend measures to promote physical access of PWDs in Accra basic schools.

In order to meet the goals and attain the above objectives, the following research questions are addressed.

1.4 Research Questions

1. What physical barriers impede integration of PWDs at the basic level in Accra?
2. To what extent has the physical needs of the disabled been integrated in the educational facilities at the basic level?
3. What measures could be put in place promote physical access of PWDs in ACCRA basic schools?

1.5 The Scope and Justification of the Research

Education is a fundamental human right, set forth in the Universal Declaration of Human Rights and the International Human Rights Covenants. The Right to Education is essential and indispensable for the exercise of all other human rights and for development (Grut and Ingstad, 2006). In Article 24, the CRPD stresses the need for governments to ensure equal access to an “inclusive education system at all levels” and provide reasonable

accommodation and individual support services to persons with disabilities to facilitate their education (7).

Achieving the education for all targets and Millennium Development Goals will be impossible without improving access to and quality of education for children with disabilities. The EFA Global Monitoring Report 2007 estimates that the majority of children with disabilities in Africa do not go to school at all, and of the 72 million primary aged children worldwide that are out of school, one third have disabilities. The Millennium Development Goal of Universal Primary Education stresses attracting children to school and ensuring their ability to thrive in a learning environment that allows every child to develop to the best of their abilities. The second MDG goal cannot be achieved in Ghana without addressing the accessibility needs of pupils with disabilities at the basic level.

This research focuses on Accra because it was one of the metros selected to implement the pilot inclusive education in 2006. It also functions as both a regional capital and the national capital of the Republic of Ghana. Being the national capital, it links the country to the rest of the world. There is also a high demand for amenities and essential services due to its high population. It is however expedient to assess the extent of implementation of the Disability Act in Basic education because it is the first point of call for any policy implementation in Ghana. Results of the study will inform how far the other regions has made basic education physically accessible to children with disability to promote inclusive education

Mobility impaired pupils were selected because they are the second highest recorded disability among children in Greater Accra (HPC, 2010). Mobility impaired children are easily identified to conduct research on and meeting their needs will meet the needs of all users of the facilities. Moreover studies on the mobility impaired will also inform the practice of inclusive education in Ghana's education system towards universal access to basic education which is a global concern.

In all, 22 basic schools in Accra were surveyed while ten (10) basic schools were audited on physical accessibility to persons with mobility impairment. This research contributes to the development of social and institutional consciousness with respect to PWDs equal participation in basic educational institutions in Accra and with implications for Ghana and other developing countries.

1.6 Structure of Research Report

The research report was put into chapters of six in which each chapter constituted findings of specific activities linked up to achieve the objectives of the research. The first chapter of the report gave an introduction by presenting the ideas and expectations of the study. It highlighted on the problem, the research objectives and questions, scope as well as justifies the research.

The second chapter dealt specifically with review of relevant literature to acquire in-depth knowledge on physical access to basic education for pupils with disabilities. A summary of lessons derived from the literature was used to generate a conceptual framework for the study.

Chapter three of the report detailed the methodology used to carry out the study. It also provided the criteria for the selection of facilities for the study. The tools and techniques for the collection of primary and secondary data, and how the data was analyzed were also defined. While chapter four outlined the profile of the study area, chapter five described the current state of educational facilities to pupils with disabilities. It focused specifically on how the physical layouts of the educational facilities of where these pupils were identified are amenable to their needs.

Chapter six of the report summarised the main findings of the study, bringing out lessons for making basic educational facilities accessible to pupils with mobility impairment. Policy recommendations made towards achieving universal accessibility in basic schools were outlined in this chapter. This chapter also pointed possible areas for further study towards achieving universal accessibility and a barrier free environment for children.

CHAPTER TWO

ACCESS TO BASIC EDUCATION FOR CHILDREN WITH DISABILITIES

2.1 Introduction

This chapter reviews relevant literature on education, disability and the concept of universal design of educational infrastructure to promote universal access to basic education. It also analyses International conventions on Inclusive education as well those in Ghana. It presents conceptual framework which links essential variables in this research.

2.2 The Concept of Education

This section analyses the various definitions of education and the benefit of child education to development.

2.2.1 Definition of Education

According WHO (2011) education is a life-long development of behaviour which takes place in and beyond schools. It focuses on both physical and mental growth to be able to contribute to the society. The word "educate" comes from the Latin *educare*, which meaning "to lead out," "to bring out." In this view, education means to bring out of the child, the desire to know and thirst for knowledge. Yero (2002) confirms that it is also the process of teaching to develop the knowledge, skill or character of a person. According to United Nations (2013), basic education is the knowledge, attitudes, values and motivations that are necessary for people to develop educational foundations for a lifelong learning journey. Education International cited by Organisation for Economic Co-operation and Development [OECD, (2006)] strongly believes that early childhood education is of great value to all children and should be equally available and accessible to all. Based on the definitions given, education is defined as the process of knowledge impartation and acquisition which develops an individual mentally, morally and socially as wealth which contributes to development of an individual and the society as a whole. Education is a social asset that can benefit wide range of people especially children in society.

2.2.2 Benefits of Child Education to Development

Early childhood education has enormous individual, social and economic benefits (UNESCO 2007). The early childhood years set the foundation for life, ensuring that children have

positive experiences and that their needs for health, stimulation and support are met, and also ensures that children learn to interact with their surroundings (OECD, 2006). United Nations Educational, Scientific and Cultural Organisation [UNESCO, (2007)], confirms that quality child education result in easier transition to higher levels in education, better completion rates, reduced drop-out rate and social vices among children. The OECD (2006) argues that educating the child enables women to participate in the labour market, thereby contributing to economic growth. It further states that parents especially mothers focus more on their economic activity when children are in school and reduces most recorded case of abuse of children with disabilities by parents. Children including the 'disabled' who receive quality early education arrive at school ready to learn and develop their abilities to contribute in the future to development.

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2.3 The Concept of Disability

This section analyses the various definitions of disability and draws lessons for this research. It also discusses the different types and the causes of mobility impairment.

2.3.1 Definition of Disability

Oliver (1996) cited by WHO, 2001 states that disability is the barriers society put in place to exclude the physically impaired from total participation. It is similarly defined as the barriers that restrict an individual from partaking in life situations. The Department for International Development (DFID) 2000 notes that it considers disability as both a social and a health issue where an individual's inability to partake in certain activities in society is determined by the person's physical, intellectual or mental condition. According to Matthew (2011), disability is loss of some body part or health related issue. In the same sense Mitra (2006) also considers disability as inability to function or perform normal activities but not social oppression as earlier defined by DFID (2000). The Americans with Disability Act (ADA) 2013 are also of the view that disability is a legal term rather than a medical term. Disability here is defined as a person who has physical or mental impairment that limits their daily activities and also includes individuals who have records of impairment even though they currently do not have it.

From the discussions above, disability can be grouped into a medical and a social model. The medical model focuses on the medical state of the person whiles the social model emphasises

on removing barriers that prevents people with disability from participating. Matthew (2011) focuses on the medical condition of a person whiles Oliver (1996), WHO (2001), DFID (2000) and ADA (2013) consider disability as barriers created by the society. WHO (2001) argues that a person becomes disabled by the barriers they face, not by their impairment and this has formed the basis upon which human rights has been built. In view of this, disability can thus be defined as the exclusion of medically impaired people by individuals, institutions and society from participating in normal day activities. According to UNICEF (2007), people with disability comprise of long-term physical, mental and intellectual impairment.

2.3.2 *Physical of Disability*

Social Security Advisory Board (2003) defines physical disability as a person who cannot properly use the limbs or the whole body which has brought about difficulties in movement and performing everyday activities like eating, bathing, driving, washing and others. It is similarly defined by UNAPD (2009) as all those disabilities that affect movement and posture of a person. It further list mobility impairment, visual impairment, hearing impairment and chronic disease as types of physical disability. For the benefit of this study, much focus will be directed towards mobility impairment.

2.3.2.1 *Definition of Mobility Impairment*

Mobility impairment is lacking all or some part of the limbs. It is also termed as having some part of the body not properly functioning (Oliver, 1996). This definition is supported by the International Classification of Functioning, Disability and Health (ICF), which states that mobility impairment is a disorder in the body function which prevents a person from partaking in the executing certain activities in society (WHO, 2001). Impairments are problems in body function or alterations in body structure (e.g paralysis or blindness) whiles activity limitations are difficulties in executing activities including walking or eating (WHO, 2011).

2.3.2.2 *Causes of Mobility Impairment*

There are different causes of impairment, Rembis (2004) states that about 15 percent of disabled people are born with their disabilities, while the remaining 85 percent (especially those that are physical), are acquired. Poor socio-economic condition is a cause of disability.

These include poor nutrition, dangerous working and living conditions, limited access to vaccination programmes as well as maternal health care, bad sanitation and poor hygiene Venter et al., (2002).

According to WHO cited by Rasheed (1999), early detection and early intervention measures can prevent approximately 70 percent of the childhood disability caused by vaccine preventable diseases such as polio, malnutrition and micronutrient deficiencies. As a result, fewer children would become disabled from polio or due to vitamin A and iodine deficiencies. The United Nations also adds that poor nutrition, accidents, limited access to vaccination programmes, and to health and maternity care, poor hygiene, bad sanitation, inadequate information about the causes of impairments, war and conflict, and natural disasters all cause disability (Fletcher and Hurst,1995).

According to Assistive Technology START (1996), physical characteristics of students with mobility impairment may include any one or a combination of the following: paralysis, altered muscle tone, sensory disturbance, unsteady gait, non-ambulation requiring alternate means of mobility, loss of, or inability to use one or more limbs. A pupil with mobility impairment may require adapted materials or equipment as well as additional support from teachers and other professionals to modify and adapt the teaching and learning environment to meet his or her unique needs. Failure to incorporate their needs will cause high level of dependency of the disabled children on their carriers in schools. The more dependent children are, the more vulnerable they are to neglect, mistreatment and abuse (Cain, 2002).

2.4 Education and Disability

Children with disability are often excluded, discriminated and stigmatized by regarding them as objects of charity and passive recipients of welfare. This charity-based legacy persists in many countries and affects the perception and treatment received by children with disabilities. The human rights approach to disability has led to a shift in focus from a child's limitations arising from impairments, to the barriers within society that prevent the child from having access to basic social services, developing to the fullest potential and from enjoying her or his rights (UNICEF, 2007). This has raised much International legislation to ensure that the needs of PWDs are met in school.

2.4.1 Educational Models for PWDs

According to Ras (2008) education for the disabled can be grouped into three main models. This includes: Special education, integrated education and Inclusive education.

1. Special Education

It evolved as a separate system of education for disabled children outside the regular schools based on the assumption that disabled children had needs which could not be addressed within regular schools (Ras, 2008). According to Cain (2002), special schools are usually organised according to impairment categories, such as schools for blind or deaf children, for children with learning difficulties, behaviour problems, physical and multiple impairments. Separate education for disabled children has resulted in separate cultures and identities of disabled people, and isolation from their homes and communities. This implies that majority of disabled children have weak family and society bonds since they are only seen at home during certain seasons and can lead to abandonment.

2. Integrated Education

According to Ras (2008), it is the integration of children with disabilities in regular schools. This system of education breaks down barriers and negative attitudes to facilitate social integration and cohesion in communities (DFID, 2010). It implies that the child have to change to be able to participate in the existing school system. This educational system is under severe criticism, because of the inability of the child to adapt to the school and make a progression in his own educational development (Ras, 2008).

3. Inclusive Education

Lynas (1993) defines inclusion as the drive to merge special education fully into the mainstream of education. Cruicksmank and Johnson (1978) suggest that inclusive education is the type of education where the aim is to restructure schools in order to respond to the needs of children. Similarly, Ivey et al (1987, p 47) state that the inclusion can simply be defined as “to enrol disabled students no matter the severity of handicap in regular classes in neighbourhood schools where they can interact with normal peers”. According to Will (2005), inclusion is the integration of children with learning, difficulties and/or physical problems, unless the problems are so severe that they cannot be accommodated in regular programmes. Inclusive education for children with disabilities however is the concept through which all children no matter the medical condition can get equal educational

opportunities. Instituting inclusion means that the educational as well as the physical needs of the disabled should be considered. To satisfy the purpose of this research, emphasis is placed on inclusive education.

The inclusion of students with disabilities into educational setting is based on the recognition and acceptance of a range of human differences. This is in agreement with the social model which states that, the demand for inclusion has its roots in access to education and human rights for all. This is driven by the beliefs that all forms of segregation are morally wrong and educationally inefficient (Stainback & Stainback, 1992). Thus, inclusion is necessary to avoid the negative effects of segregation and discrimination. In view of this, there are a lot of International legislations that strongly advocate for countries to ensure appropriate education for all children including children with disabilities.

2.4.2 *International Convention on Inclusion*

This section reviews key international legislation on inclusive education, accessibility principles in educational facilities.

2.4.2.1 *Legislation on Inclusion*

According to UNICEF (2007), human rights approach to disability has led to a shift from a child's limitations arising from impairments, to the barriers within society that prevent the child from having access to basic social services to develop its full potential. Over four decades, the United Nations has made a strong commitment to the human rights of persons with disabilities. This commitment is reflected in major human rights legislation, which began with the 1971 Declaration on the Rights of Persons with Mental Retardation and has now climaxed in the 2006 Convention on the Rights of Persons with Disabilities. Other disability-focused initiatives include, the 1994 Salamanca Statement and Framework for Action, Flagship Initiatives (2000), The World Declaration for Education for All (UN, 1990), Dakar Framework for Action (UNESCO, 2000), Millennium Development Goals (MDG's, UN, 2000), Standard Rules on the Equalization of Opportunities of Persons with Disabilities (UN, 1993) and The UN Convention on the Rights of the Child (UN, 1989).

1. *The UN Convention on the Rights of the Child (UN, 1989)*

Article 2 of the UN Convention on the Rights of the Child states that children should not be discriminated on grounds of disability. Article 23 emphasises the rights and freedoms of

children with disabilities and the importance of promoting their full enjoyment of life experiences and of exercising their independence to the greatest extent possible. Article 28 and 29 reinforces the right of all children to education irrespective of their impairment and disability and also requires equality of opportunity given. The right of all children to have access to a quality education was further reinforced by three major international conferences and declarations which took place between 1990 and 2000.

2. The World Declaration for Education for All (UN, 1990)

Fast-track Initiative (FTI) is a global partnership between donor and developing countries to ensure accelerated progress towards the Millennium Development Goal of universal primary education by 2015. All low-income countries which demonstrate serious commitment to achieve universal primary completion can receive support from FTI.

3. Standard Rules on the Equalization of Opportunities of Persons with Disabilities (UN, 1993)

The process outlined in the Rules is to identify and remove obstacles preventing persons with disabilities from full participation in the activities of their societies. The Rules call on States to provide special attention to the education of disabled girls and boys from pre-school and primary school age. It also seeks to enhance participation by ensuring full participation and equal opportunities; Identifying and remove remaining obstacles and; Responsibility of governments for the necessary measures.

4. Salamanca Statement and Framework for Action (UNESCO, 1994)

The Salamanca Statement of 1994 calls for ordinary schools to include all children, regardless of their physical, intellectual, social, emotional or linguistic or other conditions. This was agreed by representatives of 92 governments and 25 international organizations at the World Conference on Special Needs Education in Salamanca, Spain. The Statement confirms a commitment to Education for All and recognises the necessity and urgency of providing education for all children.

5. Dakar Framework for Action (UNESCO, 2000)

In 2000 the World Education Forum was held in Dakar to review progress and set new international targets for achieving Education For All. The Dakar Framework for Action is an outcome of this forum and a re-affirmation of the vision set out in the World Declaration on

Education for All in Jomtien in 1990. It expresses the international community's collective commitment to pursue a broad - based strategy for ensuring that the basic learning needs of every child, youth and adult are met within a generation and sustained thereafter.

6. *Millennium Development Goals (MDG's, UN, 2000)*

The new international targets outlined in the Millennium Development Goals (MDGs) include access to and completion of Universal Primary Education by 2015. However, if marginalised groups of learners, such as those with disabilities, continue to be excluded from primary education, it will not be possible for countries to achieve the MDG on education. National plans to achieve universal primary education tend to be implemented independently of any inclusive education initiatives. Even in the context of the most committed approach to EFA, systems still exclude vulnerable groups of children from educational opportunities, so there is an urgent need for an inclusive approach to EFA.

7. *Flagship Initiatives (2000)*

The Flagship on Education for All and the Right to Education for Persons with Disabilities: Towards Inclusion represents a joint effort among UN organisations, NGOs and donor countries acting together as a catalyst in the process of achieving Education for All. The Flagship seeks to unite all partners in its effort to reach out to children, young people and adults with disabilities, and to promote solutions that can translate universal rights into inclusive realities. Its goal is to recognize the universal right to education, the Flagship seeks to unite all EFA partners in their efforts to provide access to and promoting completion of quality education for every child, youth, and adult with a disability.

8. *UN Convention on the Rights of Persons with Disabilities (2006)*

In Article 24, States are to ensure that children have equal access to primary education. Education is to employ the appropriate materials, techniques and forms of communication. Pupils with support needs are to receive support measures which will foster their participation in society and increase development of their personality, abilities and creativity.

In view of these legislations, policies designed by countries should ensure that children attend the same schools they would attend if they did not have a disability. Regular schools adopting inclusive education should discourage discriminatory attitudes, create welcoming communities and build an inclusive society. To achieve this, there is the need for clearly stated policy which is accepted by all stakeholders. Moreover, there is the need for trained teachers, flexible curriculum physical accessibility of schools and classrooms, in terms of

distance, ramps, steps and other needed adaptations, to facilitate inclusion of children with disabilities. The UN Conventions since its inception has informed the formulation of many generally acceptable universal designs to promote accessibility.

2.5 Universal Design

Universal design is the plan of products and environment to be used by all without the need for specialization (Story and Mueller, 2002). According to Burgstahler (2012), planning any product or environment involves considering many factors. This includes aesthetics, engineering options, environmental concerns, industry standards and cost. Making infrastructure accessible requires implementing standards and guidelines that ensures inclusion.

2.5.1 Seven Principles of Universal Design

According to Story and Mueller (2002) seven principles to evaluate existing designs and guide the planning process for universal design include:

1. ***Equitable Use:*** Design of structures should be useful and marketable to persons with diverse abilities
2. ***Flexibility in Use:*** Design of structures should accommodate a wide range of individual preferences and abilities
3. ***Simple and Intuitive Use:*** Design of signage should be easy to understand regardless of the user's experience, knowledge, language skills, or concentration level.
4. ***Perceptible Information:*** Design should communicate necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.
5. ***Tolerance for Error:*** Design should minimise hazards and the adverse consequences of accidental or unintended actions.
6. ***Low Physical Effort:*** Design should be used efficiently and comfortably and with a minimum of fatigue.
7. ***Size and Space for Approach and Use:*** Design should provide appropriate size and space for approach, reach, manipulation, and use, regardless of the user's body size, posture or mobility.

2.5.2 International Building Instrument

According to Danso et al (2008), several countries and organisations have developed various statutory building instruments, such as International Standards, Building Regulations and Guidelines, Codes of Practice, among others to achieve designs and features that can be used by persons with disabilities. Their main goal is to provide guidance on how the built environment can be designed to anticipate and overcome restrictions that prevent disabled people from making full use of their surroundings. The British Standards Institution (2001) considers Design of buildings and their approaches to meet the needs of disabled people [BS8300 (2001)]; Americans with Disabilities Act Accessibility Guide [ADAAG (2004)] and Accessibility for the Disabled; A Design Manual for a Barrier-Free Environment; Urban Management Department of the Lebanese Company for the Development and Reconstruction of Beirut Central District (SOLIDERE, 2004) which was developed by the UK, USA and the UN, respectively, provides guidance on good practice in the design of domestic and non-domestic buildings and their approaches so that they are convenient to use by disabled people. They also deal with ways in which their management and maintenance can affect safe access and use of facilities by disabled people.

According to Wylde, et al. (1994) in a design manual states that only 10 percent of individuals may not be architecturally disabled in one way or other at some time in their life. Due to this, it is necessary that the built environment is properly designed and made all-inclusive. Goldsmith (1997) coined the phrase ‘architectural disability’ to describe how the physical design, layout and construction of buildings and places can confront people with hazards and barriers which make the built-environment inconvenient, uncomfortable or unsafe and may even prevent some people from using it at all. European Commission (2004), Rio Chatter (2003) and the entire international community suggest that universal design is the way forward.

2.5.3 Accessibility Principles in Educational Facilities

Americans with Disabilities Act (ADA) states that new constructions and alterations of private, public and commercial facilities must comply with the ADA Standards for Accessible Design or the Uniform Federal Accessibility Standards. Universal design in association to educational facilities includes:

1. Floor and ground surfaces

Floor and ground surfaces should be stable, firm, and slip resistant. A stable surface is one that remains unchanged by contaminants or applied force, so that when the contaminant or force is removed, the surface returns to its original condition. A slip-resistant surface provides sufficient frictional counterforce to the forces exerted in walking to permit safe ambulation. The clear floor or ground space should be 30 inches (760 mm) minimum by 48 inches (1220 mm) minimum.

2. Forward Reach

According to Design Manual for a Barrier Free Environment [DMBE (2007)], forward reach of tables in the classrooms and canteens must be accessible for all users as depicted in Figure 2.1. It further gives requirement to when there is an obstruction or not in the environment.

- a. Unobstructed: Where a forward reach is unobstructed, the high forward reach should be 48 inches (1220 mm) maximum and the low forward reach should be 15 inches (380 mm) minimum above the finish floor or ground.
- b. Obstructed High Reach: Where a high forward reach is over an obstruction, the clear floor space should extend beneath the element for a distance not less than the required reach depth over the obstruction. The high forward reach should be 48 inches (1220 mm) maximum where the reach depth is 20 inches (510 mm) maximum. Where the reach depth exceeds 20 inches (510 mm), the high forward reach should be 44 inches (1120 mm) maximum and the reach depth should be 25 inches (635 mm) maximum.

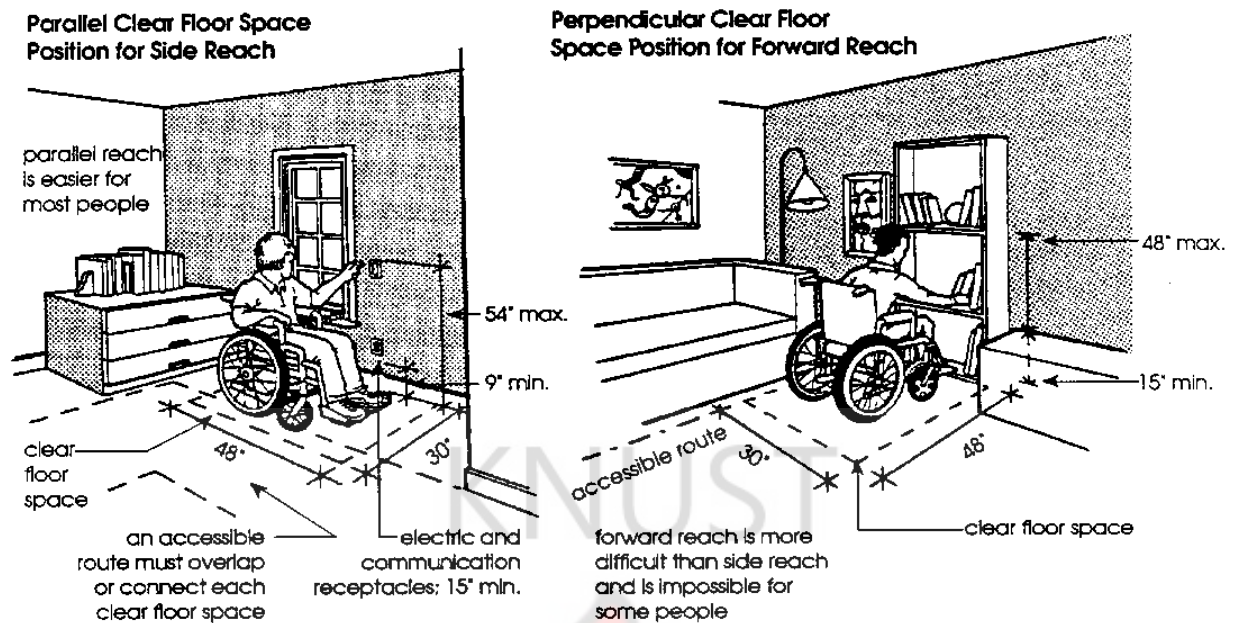


Figure 2.1: Obstructed High Forward Reach

Source: DMBE (2007)

3. Turning Space

There are two types of turning spaces, this include;

- a. Circular Space: The turning space should be a space of 60 inches (1525 mm) diameter minimum. The space should be permitted to include knee and toe clearance.
- b. T-Shaped Space: The turning space should be a T-shaped space within a 60 inch (1525 mm) square minimum with arms and base 36 inches (915 mm) wide minimum. Each arm of the T should be clear of obstructions 12 inches (305 mm) minimum in each direction and the base should be clear of obstructions 24 inches (610 mm) minimum. The space should be permitted to include knee and toe clearance only at the end of either the base or one arm.

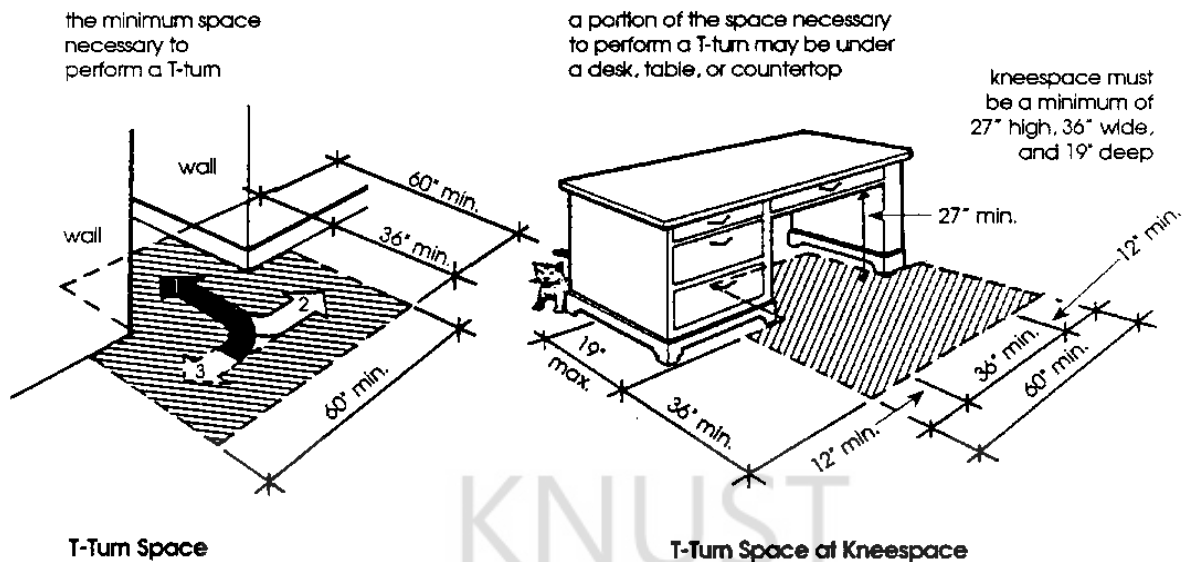


Figure 2.2: Standard Space for Turning

Source: DMBE (2007)

4. Accessible Routes

Accessible routes should consist of one or more of the following components: walking surfaces with a running slope not steeper than 1:20, doorways, ramps, curb ramps excluding the flared sides, elevators, and platform lifts

- a. **Clear Width:** The clear width of walking surfaces shall be 36 inches (915 mm) minimum.
- b. **Clear Width at a Turn:** Where the accessible route makes a 180 degree turn around an element which is less than 48 inches (1220 mm) wide, clear width should be 42 inches (1065 mm) minimum approaching the turn, 48 inches (1220 mm) minimum at the turn and 42 inches (1065 mm) minimum leaving the turn.
- c. **Manual Doors, Doorways and Manual Gates:** Door openings should provide a clear width of 32 inches (815 mm) minimum. Clear openings of doorways with swinging doors should be measured between the face of the door and the stop, with the door open 90 degrees. Openings more than 24 inches (610 mm) deep should provide a clear opening of 36 inches (915 mm) minimum. There should be no projections into the required clear opening width lower than 34 inches (865 mm) above the finish floor or ground. Projections into the clear opening width between 34 inches (865 mm) and 80 inches (2030 mm) above the finish floor or ground should not exceed 4 inches (100 mm) as depicted in Figure 2.3.

- ☐ Ample clear width for passage
- ☐ Ample maneuvering space to side and front on pull side of the door
- ☐ No threshold or minimal level change
- ☐ Lever-type hardware; mounted no higher than 48"
- ☐ Door swings easily with no closer or with a time delay closer
- ☐ Kickplate across the lower part of door
- ☐ Auxiliary handle to aid in closing the door if door does not automatically close
- ☐ Non-slip floor surfaces and/or mat recessed into floor
- ☐ Sidelight or glass panel in door to improve lighting and allow view of oncoming traffic
- ☐ Signage should be high contrast, tactile, and mounted on wall on latch side of the door

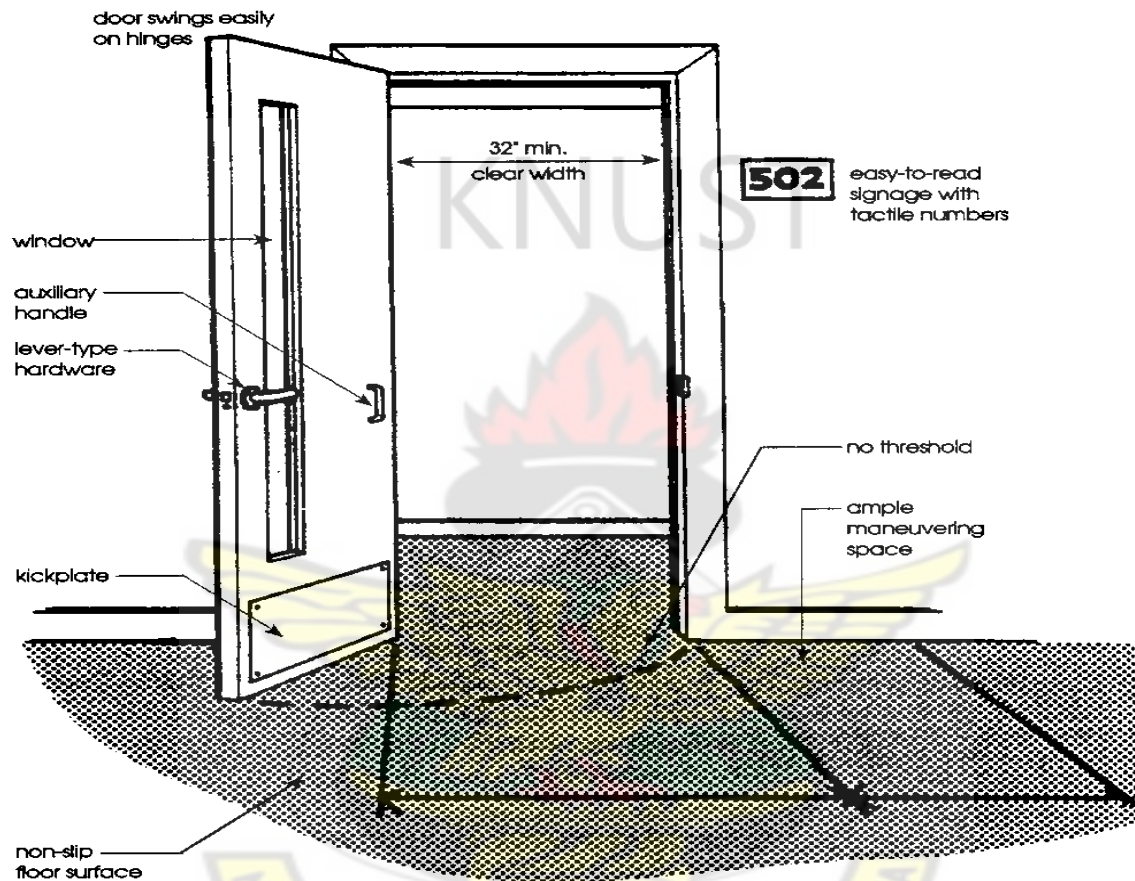


Figure 2.3: Clear width of Doorways Source: Barrier Free Environments, Incorporated (1991)

- d. Door Closers and Gate Closers: Door closers and gate closers shall be adjusted so that from an open position of 90 degrees, the time required to move the door to a position of 12 degrees from the latch is 5 seconds minimum.
- e. Spring Hinges: Door and gate spring hinges shall be adjusted so that from the open position of 70 degrees, the door or gate shall move to the closed position in 1.5 seconds minimum.

5. Ramps

- a. Slope: To accommodate the widest range of users, ramps should be provided with the least possible running slope and wherever possible, accompany ramps with stairs for use by those individuals for whom distance presents a greater barrier than steps, example people with heart disease or limited stamina. Ramp runs shall have a running slope not steeper than 1:12. A slope steeper than 1:8 is prohibited.
- b. Cross Slope: It is the slope of the surface perpendicular to the direction of travel. Cross slope is measured the same way as slope is measured. Ramp runs should not be steeper than 1:48.
- c. Clear Width: The clear width of a ramp run and, where handrails are provided, the clear width between handrails should be 36 inches (915 mm) minimum
- d. Rise: The rise for any ramp run should be 30 inches (760 mm) maximum
- e. Landings: Ramps should have landings at the top and the bottom of each ramp run. A level landing is needed at the accessible door to permit manoeuvring and simultaneously door operation. The landing clear length should be 60 inches (1525 mm) long minimum.

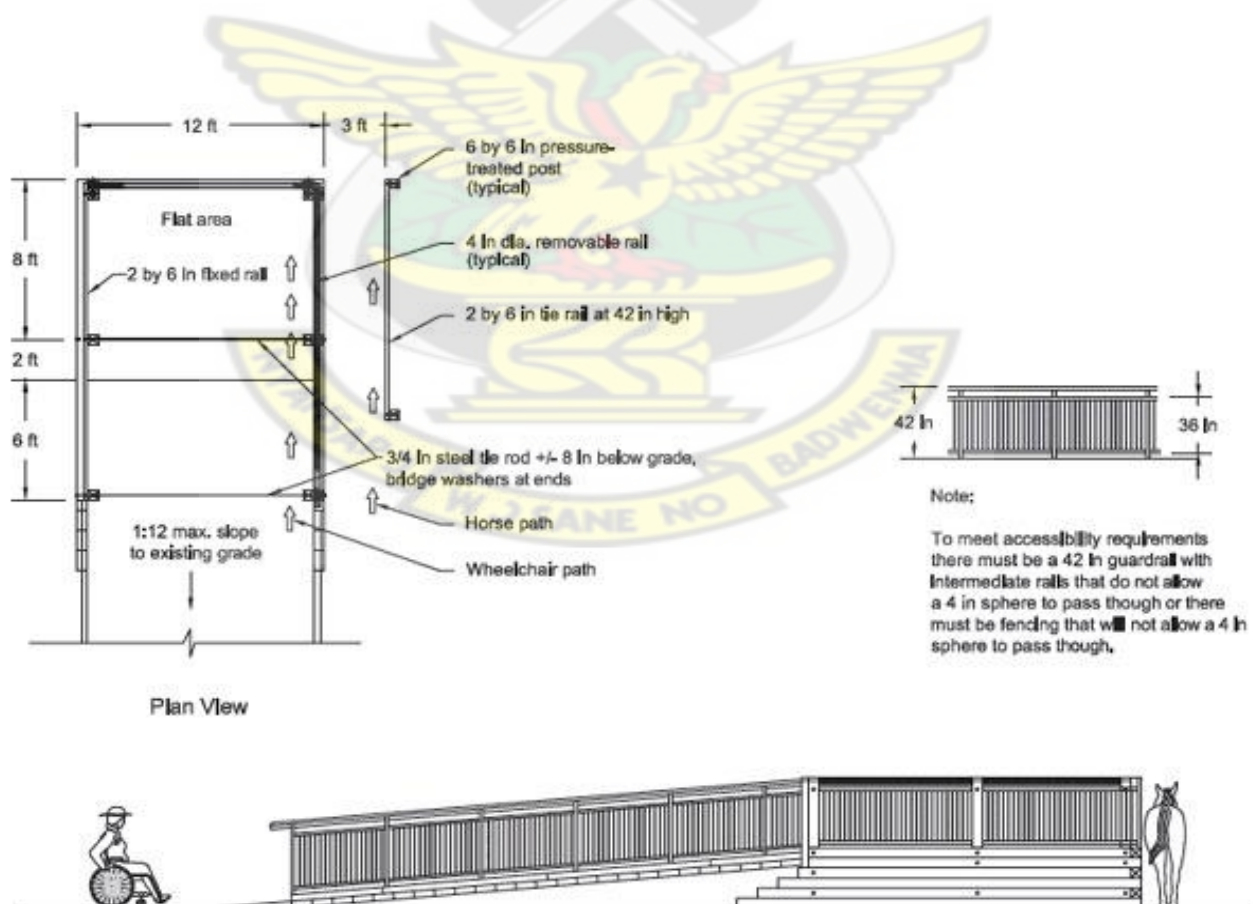


Figure 2.4: Ramp Landings

Source: DMBE (2007)

6. Railings and Hand rails

Safety guards or railings should be installed around hazardous areas, stairs, ramps, accessible roofs, mezzanines, galleries, balconies and raised platforms more than 0.40 m high.

7. Water Closet and Toilet Compartments

The water closet should be positioned with a wall or partition to the rear and to one side. The center line of the water closet shall be 16 inches (405 mm) minimum to 18 inches (455 mm) maximum from the side wall or partition, except that the water closet shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum from the side wall or partition in the ambulatory accessible toilet compartment. Water closets should be arranged for a left-hand or right-hand approach.

- a. Size: Clearance around a water closet shall be 60 inches (1525 mm) minimum measured perpendicular from the side wall and 56 inches (1420 mm) minimum measured perpendicular from the rear wall.
- b. Overlap: The required clearance around the water closet should be permitted to overlap the water closet, associated grab bars, dispensers, sanitary napkin disposal units, coat hooks, shelves, accessible routes, clear floor space and clearances required at other fixtures, and the turning space. No other fixtures or obstructions shall be located within the required water closet clearance.
- c. Seats: The seat height of a water closet above the finish floor should be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum measured to the top of the seat. Seats shall not be sprung to return to a lifted position.
- d. Grab Bars: Grab bars should be provided on the side wall closest to the water closet and on the rear wall. The side wall grab bar should be 42 inches (1065 mm) long minimum, located 12 inches (305 mm) maximum from the rear wall and extending 54 inches (1370 mm) minimum from the rear wall.
- e. Wheelchair Accessible Compartments: Wheelchair accessible compartments shall be 60 inches (1525 mm) wide minimum measured perpendicular to the side wall, and 56 inches (1420 mm) deep minimum for wall hung water closets and 59 inches (1500 mm) deep minimum for floor mounted water closets measured perpendicular to the rear wall. Wheelchair accessible compartments for children's use shall be 60 inches (1525 mm) wide minimum measured perpendicular to the side wall, and 59 inches (1500 mm) deep

minimum for wall hung and floor mounted water closets measured perpendicular to the rear wall.

Table 2.1: Specifications for Water Closets

Advisory Specifications for Water Closets Serving Children Ages 3 through 12			
	Ages 3 and 4	Ages 5 through 8	Ages 9 through 12
Water Closet Centerline	12 inches (305 mm)	12 to 15 inches (305 to 380 mm)	15 to 18 inches (380 to 455 mm)
Toilet Seat Height	11 to 12 inches (280 to 305 mm)	12 to 15 inches (305 to 380 mm)	15 to 17 inches (380 to 430 mm)
Grab Bar Height	18 to 20 inches (455 to 510 mm)	20 to 25 inches (510 to 635 mm)	25 to 27 inches (635 to 685 mm)
Dispenser Height	14 inches (355 mm)	14 to 17 inches (355 to 430 mm)	17 to 19 inches (430 to 485 mm)

Source: Design manual for a Barrier Free Environment, 2007

- f. Washing Basin: The wash-basin may be drawn forward from the wall a distance between 0.15 m and 0.20 m. No shelves must be located above the wash- basin.

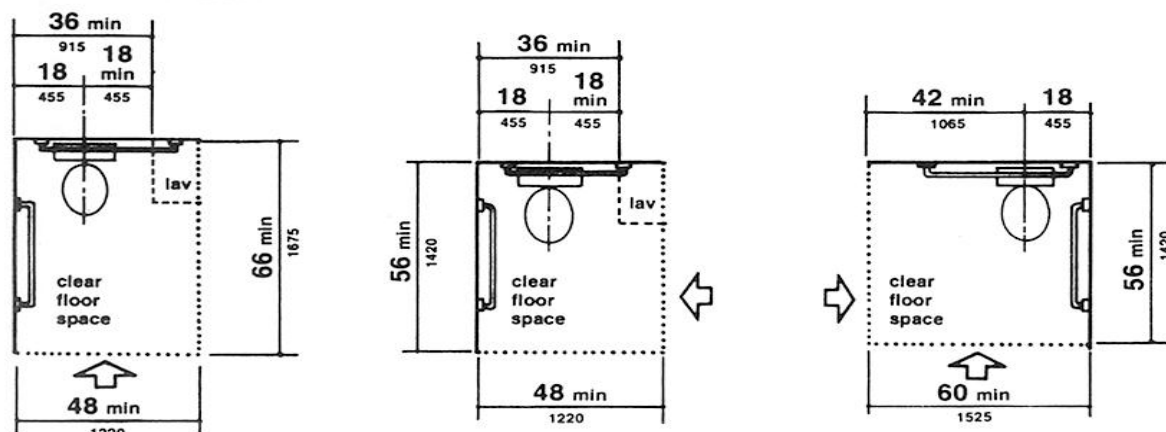


Fig. 28
Clear Floor Space at Water Closets

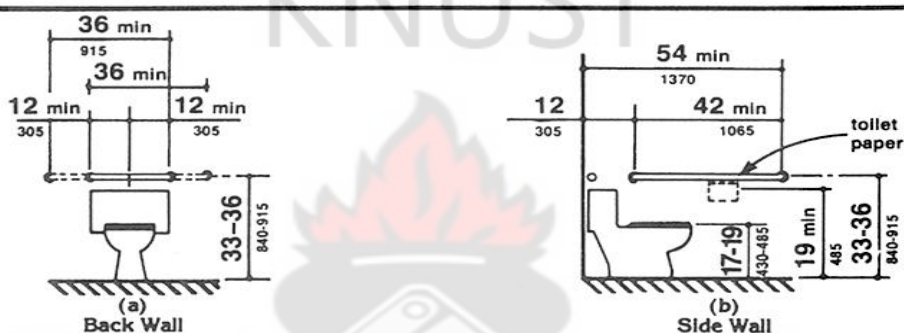


Fig. 29
Grab Bars at Water Closets

Figure 2.5: Water closet and Grab bars

Source: DMBE (2007)

8. Symbols of Accessibility

Symbols of accessibility and their background shall have a non-glare finish. Symbols of accessibility shall contrast with their background with either a light symbol on a dark background or a dark symbol on a light background.



Figure 2.6: International Symbol of Accessibility

Source: DMBE (2007)

2.6 Barriers to Accessibility of Education for the Mobility Impaired

Barrier in the context of this study is a situation that prevents one from free mobility and use of a space (Mallo et al, 2009). Venter et al., (2002) reiterate that people with mobility impairments encounter certain barriers daily According to Bruijn et al (2009) there are three main categories of barriers that prevent persons with disabilities from participation: attitudinal, environmental and institutional.

1. Attitudinal Barriers

Cain (2002) states that negative attitudes to disability are the biggest barrier to disabled children accessing and benefiting from regular education. Negative attitudes can be found at all levels: parents, community members, schools and teachers, government officials and even disabled children themselves (Cain, 2002). Fear, taboo, shame, lack of knowledge, misinformation and socio-economic values about human life, respect and dignity all encourage negative attitudes towards disability (Bruijn et al, 2009). Children living with disabilities are often faced with prejudice, stereotyping and discrimination in society (Munyi, 2012) and sometimes, they become conscious of how society will perceive them. Their fear of facing prejudices and stereotypes within society prevents them from exploring and experiencing the full extent of their potential. Barriers that are attitudinal could be intentional or unintentional (Pivik et al., 2002) and they are revealed in the attitudes that society portrays towards people with disabilities. The impact of such attitudes is evident in the home, school, community and at the level of national policy-making where the needs of the disabled are not incorporated in the planning, budgeting and programming stages. More so, some parents for fear of their safety, or for the respect and honour of the family, they sometimes lock their disabled children in the house when they have to go out, or hide them completely so that neighbours may not even know they exist (Bruijn et al, 2009). Furthermore, lack of child-centred approach in education serves as barriers for the disabled. Focus is on the curriculum and what is taught rather than on the needs of children and the process of learning. This delays the personal development of the child.

2. Physical Barriers

Many physical barriers prevent children with disabilities from participating in schools. According to Kenny et al. (2000), these barriers may include small space desk, steps, heavy doors, slippery floors and inaccessible washrooms amongst others. McKevitt (2012) is also of the view that students with mobility disabilities have difficulties with steps, or heavy doors

and may also need additional desk space if they use a wheelchair, or additional storage space for a walking frame or crutches. According to Cain (2012), large class sizes are also seen as a barrier to the inclusion of disabled children in all countries. In economically wealthy countries, class sizes of 30 are considered too large, yet in poorly resourced countries, class sizes of 60 to 100 are the norm. Large class sizes reduce the possibility of using wheelchairs. Inability of institutions to eliminate these barriers excludes children with disabilities from participating in schools. The UN Enable (2004) states that, eliminating physical barriers benefits not just the disabled, but the able bodied persons as well. It further encourages governments to be an example in removing structural barriers that the disabled encounter in public buildings.

3. Institutional Barriers

According to Calderbank (2009), Governments often ratify international conventions and global initiatives but fail to conform to their goals and requirements. Many signatories of such treaties and agreements as the Convention on the Rights of the Child and the Dakar Framework for Action on Education for All have failed to modify their educational policies and practices in relation to the right to education of children with disabilities because they may not see it as their responsibility to provide education to children with disabilities. With the believe that people with disabilities are subjects for charity rather than services, government sometimes see this as the domain of non-governmental organizations, which have in many countries been the first to try and provide some form of education or training to children with disabilities, often in small separate schools or centres. Governments fail to take action to include children with disabilities in national education systems because they assume that extensive resources are needed to achieve this.

The UN Enable (2004) stresses the importance of the mobility and accessibility of the disabled to facilities in order for them to be well integrated in society. It lays emphasis on how important it is for local authorities to ensure that the specific needs of the disabled are identified and incorporated accordingly. Dion (2005) also emphasis that accessibility measures should be inculcated in all rebuilding or reconstruction efforts; in a bid to ensure that the educational facilities are accessible.

2.7 Case of Study of Developing Countries in Inclusive Education

Inclusive schooling is a success in many schools in many countries. It is typical to find that students with special needs who are now 'included' have developed a broader range of

socially appropriate behaviour; they have increased their language skills; and they have met and surpassed academic goals. Much of this success is a consequence of the exposure of students with special needs to their non-disabled peers.

Countries experiences in providing inclusive and universal access to education for children with disabilities.

2.7.1 The Experience of Indonesia in Inclusive Education

Analysis of a country's experience in inclusive education will help draw lessons on the challenges and benefits encountered in implementation. Here Indonesia was selected to draw lessons from their implementation of inclusive education at the basic level.

2.7.1.1 Brief Profile of Indonesia

This section gives a brief profile of Indonesia which considers the population, economy, health as well as the educational background of the country.

1. Population

Demographically, it has 239.9 million people which is the world's fourth most populous country. Some 58% live on the island of Java.

2. Economy

Since 2004, the economy has expanded by more than 6% per year and Indonesia is now classified as a 'middle-income country'. But around half the people live below two dollars a day, with many unemployed or underemployed. Monetary unit is Indonesian rupiah. The main exports of Indonesia are gas, plywood, textiles and rubber. Indonesia is the world's largest tin producer.

3. Health

With an effective family planning programme, the rate of growth is fairly low (and declining), at 1.04%. The infant mortality rate is 27 per 1,000 live births (Malaysia 5, Australia 4). The HIV prevalence rate in Papua and West Papua is around 2.4%, more than 10 times the national average and over the WHO threshold defining an epidemic. Indonesia is introducing a universal social health insurance system (New Internationalist Magazine, 2013)

4. Education

According to Indonesia Federal Library Congress (2004) Indonesia has a twelve-year public and private education system (primary grades one through six; junior high school grades seven through nine; and senior high school grades ten through twelve). This is similar to the

education system in Ghana. An estimated 3.7 percent of government expenditures go toward education. Schooling is compulsory at the primary and, since 1993, junior high levels; senior high school education is optional. The system is supervised by the Ministry of National Education (which is responsible for nonreligious, public schools about 92 percent of total enrolment at the primary level and 44 percent at the secondary level) and the Ministry of Religious Affairs (which is responsible for religious, private, and semiprivate schools about 15 percent of total enrolment). *Pesantren* (Islamic religious boarding schools) doubled in number between 1980 and 1996 and enrolled more than twice the number of students, which in 1996 amounted to 1.9 million.

This section presents the experience of Indonesia in meeting the accessibility needs of children with disabilities. The Australian government has been the main stay of Indonesians efforts to implement inclusive education programmes since 2006. AusAID (2013) studies in Indonesia identified issues that affect access of children with disabilities who travel to school and in the schools environment. Summary of the findings is presented in Table 2.2.

Table 2.2: Reasons why Children with Disabilities Stay Out of School.

NO.	Issues	Reasons
1	Willingness to go to school	awareness campaigns, parental, teacher, administrative staff or peer attitudes, social context
2	Ability to go to school	availability of mobility equipment, such as wheelchairs, for different levels of disability
3	Access to school	distance from home, path or road conditions
4	Ability to enter and move around school premises	building design, entrances, stairs, path conditions
5	Participation in school activities	attitudes of everyone involved, building design, furniture design, provision of teaching aids, room arrangements, school grounds

Source: AusAID (2013)

Deductions from Table 2.2 indicate that the reasons why the children with disabilities stay out of school range from children's willingness to leave the home to participation in schools activities. The related issues that explain the various limitations or barriers have social,

governmental and institutional dimensions that deny children with disabilities access to participate fully in the education system.

2.7.1.2 Policy Description

Collaborative efforts between the Australian and Indonesian governments came out with The Australia-Indonesia Basic Education Programme (2006-2011). The policy document sought to implement sound school infrastructure that provides accessibility needs for children with disabilities. The Programme is carried further with a new policy document which is expected to span from 2011 to 2016 after the implementation of the first document. Australia is committed to provide assistance through disability-inclusive education strategies to achieve inclusive and universal access to basic education in Indonesia.

The strategies centre on two broad areas which include:

1. Constructing or expanding up to another 2000 schools, creating around 300 000 new places facilitating access for children with disability by including disabled toilets, handrails and ramps
2. Developing a training system for all 293 000 of Indonesia's school principals, school supervisors and district education officials in school planning, including disability-inclusive education strategies.

2.7.1.3 The Impacts of Universal Design Principles in School Facilities on Inclusive Education in Indonesia

This section gives an account on the impacts of including universal design principles in school infrastructure throughout Indonesia under the Australia-Indonesia Basic Education programme (2006-2011). There is improvement in access to education for children and teachers in Indonesia. AusAID has provided financial and technical supports for implementation of accessibility programmes for children and teachers with disabilities as part of basic education system in Indonesia. A total amount of \$395 million was invested into Australia – Indonesia Basic Education Program. Since 2008, all schools built (1275) according to the programme are expected to provide access to people with disabilities (AusAID, 2013).

According to AusAID (2013) 1087 disabled students (573 boys and 514 girls) have been enrolled in these improved schools that have either physical or learning difficulties. The programme led to installation of disability friendly toilets, handrails and ramps. It has now

become the policy of the government of Indonesia for all new schools. Not only that, the programme has also helped the Government of Indonesia to issue a regulation on inclusive education, assisting schools to include and better meet the needs of students with disability. AusAID further invested \$500-million under the current 2011 to 16 education partnership with Indonesia.

Indonesia as a developing country is making progress to achieving inclusive and universal access to basic education. Other educational policies will complement this effort to propel the country to make a strong case in terms of meeting the second MDG goal of achieving universal access to basic education by 2015. Picture evidences of some selected schools showing the efforts done by the government of Indonesia under the AusAID assisted programme for inclusive education to meet the accessibility needs of the physically challenged children at basic education level is shown below.



Figure 2.7: Two Separate School buildings made Accessible by a Ramp Source: AusAID (2013)

Figure 2.7 indicates external ramp linking separate school buildings, showing handrails and all-weather cover. This is located at Bontonompo School located at Bontobiraeng Village in South Sulawesi Province, Indonesia.



Figure 2.8: Two Separate Buildings Linked with a Ramp

Source: AusAID (2013)

Figure 2.8 represents external ramp linking separate school buildings with handrails. It is located at Madrassah Balarajam (Public Junior Secondary School) in Banten, Indonesia.



Figure 2.9: User-friendly Toilet Facility for PWDs

Source: AusAID (2013)

Accessible toilet showing handrails and wheelchair turning area at Janapria Public Junior Secondary School at Central Lombok in West Nusa, Indonesia as indicated in Figure 2.9.



Figure 2.10: External ramp linking two buildings at right-angle (90°) Source: AusAID (2013)

Figure 2.10 shows external ramp linking separate school buildings with handrails and 90-degree turning bay located at Tibawa School at Ilomata Vaillage, Gorontalo District, Gorontalo Province, Indonesia.

2.7.1.4 *Lessons on Cost of Providing Accessible Schools Infrastructure for Inclusive Education*

In the view of AusAID (2013) it is cost-effective implementing inclusive education than the traditional segregated systems whereby special schools are provided for people with disabilities away from the mainstream schools. The experience of Indonesia shows that inclusive education enables children with disabilities in poor, rural and remote locations to participate fully in education. The provision of an accessible environment or alterations in existing building using the universal design principles is not necessarily expensive at school levels. In several experiences, it cost nothing or an insignificant amount to do the alterations and create user-friendly school environment for children with disabilities.

2.8 Ghana

Ghana has since independence made significant strides in the education system. Article 25 (1) of the 1992 Constitution of the Republic of Ghana endorses educational rights by stating that all persons shall have the right to equal educational opportunities and facilities. This section reviews the state of inclusion in basic schools in Ghana and also presents review of some policies and programmes initiated by government to promote inclusion.

2.8.1 Disability Incidence and Provision in Ghana

According to Anthony (2009), global estimates of disability prevalence and incidence vary widely. The UN estimates an often invoked rate of 10% while the UNDP estimates a more conservative 5% global average. Based on these, and with a current population of just over 23 million, Ghana has an estimated total disabled population of 1.15 to 2.3 million. The World Bank acknowledges that there are currently 115 million school aged children out of school. Of those, 40 million (over 1/3) are estimated to have a disability, most of which are not visible or easy to diagnose (Lawrence, 2004). Largely unrecognisable, those with an intellectual disability make up an estimated 1 to 3 percent according to UN figures (Inclusion International, 2005), while UNESCO reports that only 1 to 2 percent of children with disabilities living in developing countries receive a basic primary education (DFID, 2000).

Ghana Statistical Service (GSS) survey results (2006) indicate that 16 percent of children between the ages of 2 to 9 have at least one disability. Assessment figures reported by Ghana's MoESS (2008) states that 14,596 students were screened for impairment, of those 101 were 'clinically assessed' as having ID. However, all of the above figures must be interpreted with extreme caution as it is exceedingly difficult to generate prevalence rates which are internationally comprehensible and comparable given variations in definitions, data collection methodologies and the quality of research or reporting (Eide & Loeb, 2005, Mont, 2007). Ministry of Education Sports and Science (MoESS) states that "there is very limited information about the incidence of children with special needs around the country" (MoESS, 2008, pp. 55). Annor (2002) estimates that, 5 percent of the Ghanaian population have a disability and further stated that social stigma is responsible for the underreporting of prevalence, especially in rural areas. An extensive database search revealed no available prevalence or incidence data specific to disability in Ghana.

According to ID (2005), the latest GES enrolment figures reveal a total of 955 students (M 598, F 357) enrolled in government run ‘Special Schools for the Mentally Handicapped³’ (Ministry of Education Sports & Science (MoESS), 2005). Reports by GES only account for students who are enrolled in special education schools and may vastly underestimate the actual number of children with disabilities across Ghana. It should be noted that GES has a recent policy objective to “determine the prevalence rates of different disabilities and SEN in Ghana” (GES, 2005, pp. 11) but little evidence of this has occurred to date.

2.8.2 Legislation on Disability

In Ghana, civil society and the Ghana Federation of the Disabled (GFD), the national umbrella organisation for PWDs, whose members include the Ghana Association of the Blind (GAB), Ghana National Association of the Deaf (GNAD), Ghana Society of the Physically Disabled (GSPD), Society of Albinos Ghana (SOAG), Parents Association of Children with Intellectual Disability (PACID) and Share Care Ghana (SCG), joined the struggle for the rights of PWDs. In response, the government, in 1992, made provisions in its constitution that protects the rights of PWDs. In 1993, the Disabled People’s Act was sent to Parliament to be deliberated and passed on June 23rd, 2006. The Bill aims to provide disabled people with accessibility to public places, equal employment opportunities, transportation at free or reduced prices, free, general and specialised medical care (Persons with Disability Act, 2006).

2.8.2.1 Persons with Disability Act (Act 715)

Parliament implemented the ‘Persons with Disability Act’ (Act 715) in 2006 after it was sent to cabinet in December 2000, which aims to provide a legal framework for persons with disability in Ghana. Stated in the Act are areas for policy direction so that Ghana can achieve an inclusive and sustainable development by all sectors and levels. For the benefit of this study, the objectives that would be considered include:

1. To educate Ghanaians on the rights, potentials and responsibilities of both society and PWDs
2. To generate and disseminate relevant information on disability
3. To create an enabling environment for the full participation of PWDs in national development
4. To ensure access of PWDs to education and training at all levels
5. To promote disability friendly roads, transport, and housing facilities

6. To ensure access of PWDs to the same opportunities in recreational activities and sports as other citizens

The privileges enjoyed by PWD's under this Act include the right to a family life and right to participate in social, creative or recreational activities as well as no exploitation, abuse, discrimination or disrespect to persons with disability and access to public places. In relation to this, public place owners and service providers to the public are to ensure that PWD's also have access to the public places and public services provided. The objectives set by Ghana Disability Act do not deviate so much from the Children Act which also talks about discrimination and right for all. It states that, 'No person shall discriminate against a child on the grounds of gender, race, age, disability, health status, custom, ethnic, origin, rural or urban backgrounds, birth or other status, socio-economic status or because the child is a refugee'. Ghana's objective to reduce discrimination is similar to other countries and organisations such USA, European Union among others. This indicates that Ghana is working hand in hand with the rest of the world to eliminate barriers created to reduce accessibility of people with mobility impairments to achieve an inclusive world systems and sustainable development globally. It raises the question of how intensely Ghana is implementing strategies to achieve the set objectives.

2.8.2.2 *Education Strategic Plan 2010-2020*

According to Education Strategic Plan 2010-2020 the delivery of education to young people with disabilities and special educational needs is informed by three guiding principles:

- The right to education
- The right to equality of educational opportunities
- The right and obligation to be included in and participate fully in the affairs of society

This helped in formulating a goal of to 'Provide education for excluded children (including those who are physically impaired or disabled) by including them, wherever possible, within the mainstream formal system or, only when considered necessary, within special units or schools'.

Strategies to address the goal include:

1. Include disadvantaged children within the existing education system or provide special facilities for them.

2. Include all children with non-severe physical and mental disabilities within mainstream institutions.

3. Provide special schools or education units for those severely disabled.

This policy's aim is to ensure inclusive education in mainstream schools. The Strategic Goal seems much more inclusive than any of the current legal provisions, by emphasising inclusion in the mainstream.

2.8.3 Building Instrument

According to Danso et al (1996), policies that regulate the construction of buildings in Ghana have not been revised to incorporate barrier-free designs. This means, Ghana, as a nation, does not have a policy framework that regulates and obliges the stakeholders in the building industry to design and build structures that are disabled-friendly. It was in the light of this development that this study was undertaken to contribute to the development of social consciousness with respect to disabled people's equal participation in social life, especially in public buildings, to assist in the removal of the reasons excluding the disabled people from social life. It will also guide the efforts, in this respect, of individuals, institutions and public bodies, who design, build and maintain these public buildings.

2.8.4 Inclusive Education (Mainstreaming)

As outlined in the ESP 2010-2020, the Ministry, led by the Special Education Division (SpED), has a policy of Inclusive Education, which places children with mild and moderate disabilities in mainstream public schools. Additional provisions are made where feasible and appropriate. Table 2.3 shows that in 2012/13 the number of pupils in mainstream basic schools recorded as having special educational needs fell by 16%. This could likely be due to inconsistencies in recording the number of children with special needs and also improvement in the health conditions of children (MOE, 2013).

Table 2.3: Enrolment of Children with Special Educational needs in Mainstream Schools

	2006/7	2007/8	2008/09	2009/10	2010/11	2011/12	2012/13
KG	5,886	3,129	3,284	3,413	3,123	3,636	2,901
Primary	20,730	11,613	11,081	11,035	9,804	11,112	9,847
JHS	8,113	4,172	4,399	3,814	4,489	5,027	3,848
BASIC TOTAL	34,729	18,914	18,764	18,262	17,416	19,775	16,596

Source: Ministry of Education, 2013

Since the end of 2011, the Inclusive Education (IE) programme has expanded from 29 districts in seven regions to 46 districts in all ten regions. The IE programme includes training for district staff, head teachers and teachers in working with children with special educational needs and the appropriate pedagogy, and sensitisation for community members. Teachers then provide school-based INSET for their colleagues. As part of IE, five districts have been provided with basic screening tools for assessment of basic impairments, and another seven will soon follow. SpED are also coordinating situation needs assessments at the district level, to identify the challenges, activities and responsibilities for achieving inclusive education within the district.

2.8.5 Challenges of Access to Education

According to the GES (2004), the challenges facing the Government of Ghana for ensuring social inclusion included the following:

1. Public prejudiced perception of persons with special needs. Society carries deep-rooted negative convictions or attitudes about persons with special needs that impede their total acceptance and inclusion
2. Architectural barriers- public places including school environment remain inaccessible to persons with special needs. The physically disabled have difficulty gaining access to the classroom
3. Inadequate assessment facilities- the few assessment centres are urban-based and poorly equipped. Many school aged children are not assessed prior to admission. This affects their placement, resourcing and future schooling.
4. Pre or Post-training in special educational needs for regular teacher. Inadequate structures or funds for pre or post-training programmes to equip regular teacher with pedagogical skills to enable them respond to children with special needs can be a threat to the achievement of inclusion and education for all.

2.9 Conceptual Framework

Deducing from challenges of physical access to education in Ghana, educational infrastructure are not physical accessible to pupils with disabilities as a result of inadequate funding to enable institutions opt for comprehensive designs for school infrastructure which are accessible to people with disabilities, non-compliance to the universal design principles

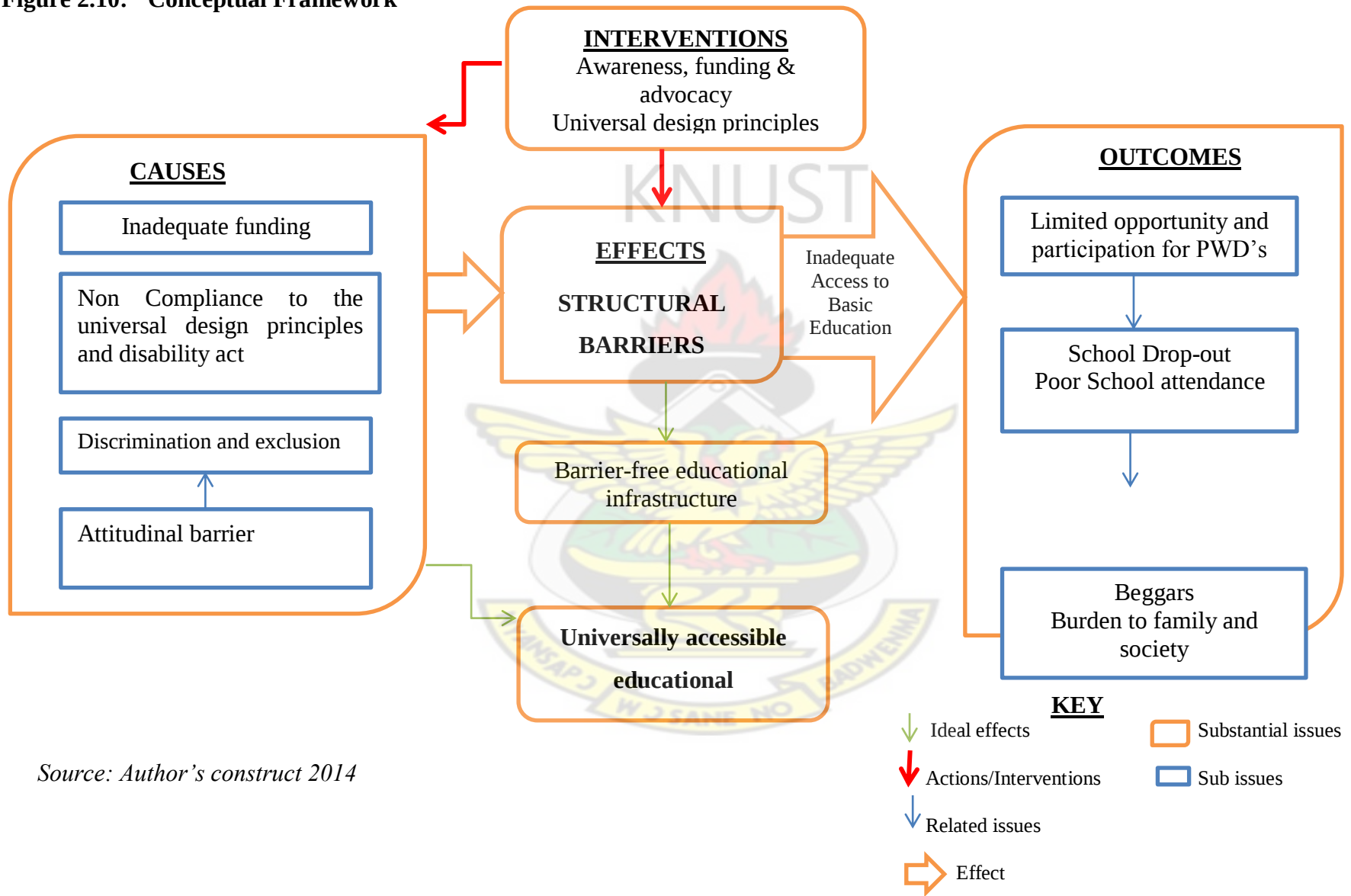
and exclusion, societal perception or attitudinal barriers are also contributing factors to limited access to people with disabilities. The effect is infrastructure which are characterised with several structural barriers that limits the mobility of persons with disabilities to basic education. The possible outcomes are limited opportunity and participation for PWD's, school drop-out among people with disabilities, poor school attendance, increase in baggers which are evident on major streets cities in the cities of Ghana, burden to family and society among other related issues.

Introduction of universal design principles and advocacy interventions to incorporate the accessibility needs of PWDs in facilities which have structural barriers will make the facilities barrier free and therefore universally accessible. Achieving universal access in basic education will enhance equitable use of educational facilities, flexibility in use, simple and intuitive perceptible information, tolerance for error, low physical effort; and size and space for approach and use. As argued by Rio Chatter (2004) Universal design is the way forward to promote inclusive and universal participation in basic education given prominence to people with disabilities by meeting their physical accessibility needs.

The findings and issues gathered from the literature review is conceptualised in Figure 2.10 as a summary of body of knowledge to guide the study. Most of the variables to be measured in the study are identified with the in the conceptual framework.



Figure 2.10: Conceptual Framework



Source: Author's construct 2014

The conceptual framework establishes the cause-effect relationships of variables that negatively affect inclusion of children with disabilities in basic school systems. The framework again points out plausible interventions to reduce the barriers that limit PWDs from having physical access to basic education. From Figure 2.10 attitudinal barrier, discrimination and exclusion, inadequate funding and non-compliance to the universal design principles and disability Act are categorised as related issues that create barriers for children with disabilities to access basic education. The immediate result is the situation of limited access to basic education. This has the tendency to limit the opportunities and participation for PWD's in their social development. It further explains why school drop-out rate and poor school attendance rate is high among children with disabilities. Consequently, PWDs mostly becomes beggars and burden to family and the society at large.

As part of efforts to promote inclusive education through the provision of user friendly school facilities, interventions such as Awareness creation, adequate funding, advocacy for the development and wellbeing of the PWDs as well as incorporating universal design principles into new infrastructure and alterations on old and existing facilities among others are the way forward according to various literature sources. Ensuring these interventions will lead to barrier free built environment especially in basic schools and makes them universally accessible irrespective of the type of disability of a person. The long term impact on development is the building of strong and sustainable social capital for development since the pool of benefits from society is widen as a result of harnessing all abilities and potentials in society.

Critical variables to look out for in this study is the measurement on structural barriers in basic schools, interventions for PWDs made in the study area and related issues of relevance. The interest of the study is to establish the extent to which basic schools in Accra are user friendly to children with disabilities. A scientific research approach is adopted and detailed out in the subsequent chapters. This will help in guiding empirical data and information gathering to analyse the situation in Accra as discussed in the literature review. The methodology gives a scientific basis for validation of outcomes and generalization of the findings from the analysis.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the procedures undertaken to complete the research. It borrows heavily on the knowledge gained from the literature review on disability and children's education in the previous chapter. It presents the research design and the rationale for its selection. It also discusses the variables that were measured; the data types and sources and the methods of analysis and ends with limitation.

3.2 Research Design

The choice of research design depended on the objectives and research questions. The research adopted descriptive-exploratory design that is analysed largely through qualitative methods with a small quantitative component to help analyse information on the current state of accessibility of children in basic schools in Accra.

The descriptive design was used to explore the nature of existing educational infrastructure and also helped to compare existing situation to International Standard outlined in Chapter Two. This allowed the measuring facilities to provide more accurate information in helping to allow in-depth follow up questions. The richness and depth of the descriptive was gained from the use of qualitative approach which provided a unique appreciation of the reality of the barriers faced by mobility impaired children in school by capturing their experiences. Qualitative approach was also used to explore the experiences of children with disabilities in relation to people without disability and also using the same educational facilities.

The exploratory design was employed when surveys were conducted with mobility impaired children, resource teachers, head teachers and institutions responsible for ensuring universal accessibility in basic schools in Accra. Through this approach it was possible to deeply engage and interact with respondents through surveys to gather adequate data. The quantitative approach was also used to gather data on the respondents that is revised and tabulated in numbers to allow statistical analysis. These designs enabled accurate information to be obtained for large numbers of people with a small sample. In spite of this, there is the possibility that questions answered were not clear and misleading. To curb this, the survey

instrument was pre-tested to ensure clarity to help gather accurate data for concrete conclusions to be made.

3.3 Research Process

The research started with identification and the definition of the problem. With outlined objectives for the study, a comprehensive desk study was conducted to review relevant literature on various theories and perceptions that have been built around the subject. This helped to develop a concept to guide the process of the study.

In view of the sensitive nature of the research, ethical clearance was sought from the School of Medical Sciences at Kwame Nkrumah University of Science and Technology to help in communication. Also, an introductory letter from the Department of Planning was sent to various Departments, resource teachers and head teachers. The pupils with physical disability were assured that all data and information that were given in assistance to achieve the objectives of the study was treated with confidentiality. Their right to be anonymous was also communicated and their acceptance to participate was sought before proceeding with the survey.

3.3.1 Preliminary Investigation

Preliminary investigations were conducted on the field, where discussions were held with the Accra Metro Education Directorate to obtain list of inclusive schools with their respective resource teachers and sub-metros as well as contact numbers. This helped extensively in locating pupils with disability at the basic school in Accra to draw Table 3.1. Clearance was sought from Metro Education Directorate before the resource teachers fully cooperated and readily assisted in gathering data relevant for the survey.

Based on the information provided by the Accra Metro Education Directorate, contacts were established with resource teachers to find their location in schools and also to compute the total number of PWDs in basic schools in Accra. While in the schools stairs leading to the classrooms and open drains on the compound were observed as barriers to PWDs in the school. Lessons drawn from the preliminary investigation and the literature review informed the method used in selecting the respondents for the institutional and household survey.

3.3.2 Pre-test

A pre-test was conducted with three (3) mobility impaired pupils, one (1) resource person and one (1) head teacher in order to get different perspectives to feed into the survey instrument.

More so a writing pad, pencil, camera, tape recorder and tape measure were also pre-tested to allow correct use of instrument paying attention to body language and non-verbal responses of respondents as well as the manner of asking questions. This exercise helped to establish rapport and provide useful insight into the issue of disability in basic schools. This ensured rectification of error at little cost. Again, the pre-test was to enhance the validity and reliability of the survey instruments and the interview guide. One school with all the existing educational facilities was assessed using a check list from the International Building Standards. This was done at Ayawaso Central sub-metro.

3.4 Units of Enquiry and Research Variables

This section explains the various variables that were associated with physical accessibility to the basic schools. It also describes the basic units from which data was collected for the study. The section goes on to identify the various data types that influenced the study as well as the sources of these data and tools and techniques adopted in the research.

3.4.1 Unit of enquiry

The unit of enquiry involves children with physical disabilities both in and out of school. This is to gather information on how accessible the educational facilities are to help draw conclusions and plausible recommendation. Data is also solicited from resource teachers and head teachers to ascertain certain physical and attitudinal barriers faced by PWDs in basic schools in Accra. Relevant institutions were also consulted to gather necessary information needed to meet the goal and objectives of the study.

3.4.2 Research Variables

Variables identified from the review of literature in relation to achieving the research objectives include: Physical accessibility of school structures, ease of movement at school, physical accessibility barriers, teachers perception on inclusive education, challenges of incorporating universal design in basic schools in Accra. Accessibility as a variable measured how easily PWDs were able to move around, used facilities provided within buildings and accessed services supplied within the facilities without any assistance. Variables that had to do with explaining and giving reasons why some situations exist at the time of the study required the use of qualitative data while coded answers required the use of quantitative data.

3.4.3 Types and Sources of Data

Both primary and secondary data sources were used in this research. Secondary data was gathered from published and unpublished documents including, journals, institutional reports, policy documents, among others. Data gathered from secondary sources, helped to identify the underlying factors that caused the built environment to be inaccessible for PWDs as well as the effect these barriers has on them.

Primary data was gathered from PWDs in basic schools in Accra, Resource teachers, Heads of School and Heads of Institutions/ Organisation as well as auditing of educational facilities to compare what currently exist to what is required based on internal accessibility standards. A detail of this is presented in Table 3.1.

Table 3.1: Variables, Units of Enquiry, Data Needed and Data Types

Variables	Unit of enquiry	Data type	Methods for collection
Children with mobility impairment • In school • Not in school	Social Welfare Depart. Metro Education Directorate	Secondary data Primary data	Survey instrument Tape recorder
Demography and Social profile • Age and Sex • Disability type and causes • Educational level • Housing	Children with mobility impairment	Primary data	Observation Survey instrument Tape recorder
Physical accessibility • Classroom • Sanitary Conditions • Playing grounds • Canteen • Library	Pupils with Disabilities Resource Teachers Head teacher	Primary data	Observation Interview guide Survey Instrument
Universal designs in educational infrastructure	Accra Metro Education Directorate	Secondary data Primary data	Observation Interview guide

Source: Author's construct, 2014

3.5 Sampling Technique

The study adopted purposive sampling technique to select respondents from relevant departments to respond to the survey instrument. In the view of Teddlie and Yu (2007 p. 5) purposive sampling techniques is a non-probability sampling or purposeful sampling or “qualitative sampling.”, it is stated further that purposive sampling techniques involve selecting certain units or cases “based on a specific purpose rather than randomly”. This definition guided the selection of ten (10) head teachers from the selected inclusive schools purposefully to get the needed information for the study. In addition, the Director of the GES Special Education Division and Metro Education Directorate, Social Welfare Department, Ghana Federation of the Disabled and Development Control Unit were surveyed.

The research surveyed all thirty-three (33) mobility impaired pupils in basic schools in Accra (See Table 3.1). In addition, a total of ten mobility impaired children of school going age who were not in school were also surveyed through snowballing (non-probability sampling) technique. These participants were selected based on the locations of the PWDs in the metropolis as directed by the Department of Social Welfare. A total of 10 children with physical disabilities were surveyed. Moreover, a total of 14 resource persons in Accra sub-metros were also surveyed (See Table 3.2).

Moreover, a total of 10 inclusive schools which the pupils with disabilities attend were selected, one from each sub-metro based the highest recorded number of PWDs in the sub-metro to conduct the audit. Measurement of facilities and the educational infrastructure used by the respondents influenced the types of educational infrastructure defined in the scope to be selected for the study. The classroom, canteen, washroom, playing grounds, corridors and entrances were used as cases in the study.

Table 3.2: Summary of Respondents and their Justification

No.	Respondents	Number surveyed	Justification
1	Mobility impaired students and non-students	43	-Basic unit of analysis, -The maximum number of students available to be surveyed at the time of the study.
2	Resource Teachers	14	-Basic unit of analysis, -The maximum number of resource teachers available to be surveyed at the time of the study
3	Head teachers	10	-Basic unit of analysis, -A head teacher from each sub-metro
4.	Departments	5	-These are the departments responsible for planning, implementation and renovation of educational infrastructure in Accra. They are also involved directly in students' affairs regarding disabilities.

Source: Author's construct, 2014

The survey revealed that 22 out of 41 clusters of inclusive basic schools in Accra had enrolled mobility impaired pupils in their schools as shown in Appendix 1. According to GES (2010) about 9457 children with disability are in school but 33 mobility impaired pupils were identified in the survey. Reason attributed to it is that GES conducted the survey on physical disability which comprised of the visually impaired, mobility impaired and hearing impaired, of this mobility impaired is the second highest. Also, most of the student recorded in that year had either completed or dropped out of school (59%).

3.6 Methods and Tools for Data Collection

Descriptive-exploratory approach allowed for the conducting of surveys. Questionnaires were prepared to that effect and first tested in a pilot survey in order to detect defects and to ensure that the tool was actually measuring what it was actually meant to measure.

Observation was a critical tool in gathering data on barriers and challenges pupils with disabilities faced in using the educational facilities in various schools. Records of scenes of students using the staircases, ramps and crossing gutters were kept by taking photographs of the pupils as they go about their life activities at selected schools. Auditing schemes were also used to identify facilities in the basic school based on international standards, to identify

how accessible they are to the physically disabled. Facilities available within the selected schools were observed and matched against the international standards as outlined in the audit scheme, to verify whether they conformed to international standards. This was done to confirm or otherwise reject some on the claims and complaints of the pupils with disabilities from the various selected schools.

Survey instrument for institutions involved in enforcing the disability law, specifically the Department of Social Welfare and the Development Control Unit of the Accra Metropolitan Assembly (AMA), were also prepared to ascertain what their roles were in ensuring universal accessibility. Certain issues that emerged from the survey were validated with the auditing of the educational structures facilities. At the basic schools, the schemes were used to assess whether facilities provided at the entrances of the educational facility; stairs, ramps, doors and corridors conformed to the minimum requirements for their provision. The ease of movement within the facility for especially a wheelchair user was also assessed to verify it conformity to international standards. The method employed in the administering of this tool was observation and measurement. A sample is attached as Checklist for existing educational facilities in Appendix 3.

Both qualitative and quantitative data were collected using household and institutional questionnaires. In this study, the use of this method helped to observe, tape-record, describe and analyse interpretation of people's behaviour. Whiles quantitative data was used in filling the audit form through observations and in the form of numbers from precise measurement. A sample of the questionnaires is attached in Appendix 3.

3.7 Process for Questionnaire Administration

Instrument required to aid data collection such as survey instruments, tape recorder, camera and auditing scheme were used. The survey instruments for PWDs were first conducted to have first-hand information of what is actually happening on the ground. This was followed by survey of resource teachers and head teachers to validate issues raised by the students. Afterwards the director of Ghana Federation of the Disabled was surveyed to know their concerns and achievement in addressing the needs of the disabled. Accra Metro Education Directorate, Development Control Unit of AMA and GES SpED respectively were then surveyed to identify what the department has done after the passing on of the Disability Bill in ensuring accessibility and also to validate issues that emerged from the survey.

Eye contact was maintained with participants to encourage them to continue speaking and the survey technique of probing was also used. The surveys were tape recorded, and verbatim transcriptions were made. A follow-up survey was done with five mobility impaired children using convenient sampling and a follow-up telephone interview was done with the director of Ghana Federation of the Disabled and GES SpED to verify and expand inadequate descriptions or add descriptions to the phenomenon. Moreover, the interview proceedings was summarised by restating the ideas and opinions of the participants, to ensure understanding.

3.7 Data Analysis and Interpretation

Data analysis commenced after conducting the first survey. The verbal descriptions of respondents were first listened, followed by reading and re-reading the verbatim transcriptions to get a sense of the whole data and allow the use of various statistical tools to organise and draw meaning out of the data gathered. The MS Excel was used to analyze the data from the audit as well as multiple response questions. It was also used to generate the graphs that were used to analyze the quantitative data. This was done following the entry of the quantitative data into the MS Excel environment after thorough data cleaning was done. Tables, Charts and graphs were generated from the data using the statistical tools in the Excel software. The qualitative data was organized into similar responses using matrices (MS Excel) and trends were identified for further analysis. The categorization also made it clear the divergent views in the responses. Some of the observed data through photographs were also presented as plates to give quick visual impressions, and necessary descriptions given to buttress the issues that are considered relevant to the study. Lessons were drawn from the findings and relevant.

3.8 Limitations to the Study

The study encountered some problems in the data collection process. First, the Ghana Statistical Service and Department of Social Welfare in Accra Metropolitan Assembly did not have data on mobility impaired children who were not in school. This presented a challenge in identifying these children. Again, selecting the sample size for mobility impaired children not in school was a difficulty since there was no adequate data on them. They were also not well organized in localities. Nevertheless this limitation did not significantly affect the research because areas where these children were clustered were identified through the help

of the GES SpED director. Also, after the survey of the tenth child who was not in school a trend was identified and since issues of physical accessibility equally affected every mobility impaired child, responses from the identified children could be generalized for that group within the metropolis. Another limitation is that the study only focused on public schools as data on private schools were not available. It is possible that a significant number of disabled pupils are in private rather than public schools.

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CHAPTER FOUR

PROFILE OF ACCRA METRO

4.1 Introduction

Having identified the needs of the physically persons through analysis of secondary data in chapter two, there is the need to provide information about the study area that informs empirical data collection and analysis. This chapter highlights the location and size of the city and the population of people with disabilities in Accra basic schools.

4.2 Location and Size of Accra Metropolis

The location gives the key and direction to where the project is undertaken. Accra covers a total land area of 137sq km and is located on Longitude 05°35'N and on Latitude 00°06'W.

As shown in Figure 4. 1, the Accra is bounded on the East by the Ledzokuku-Krowo Municipal Assembly, on the South by the Gulf of Guinea, on the West by Ga South Municipal Assembly and on North by the Ga West Municipal Assembly. The capital of the Metropolis is Accra. It is to be noted that Accra is both the regional capital of the Greater Accra Region and the national capital of the Republic of Ghana.

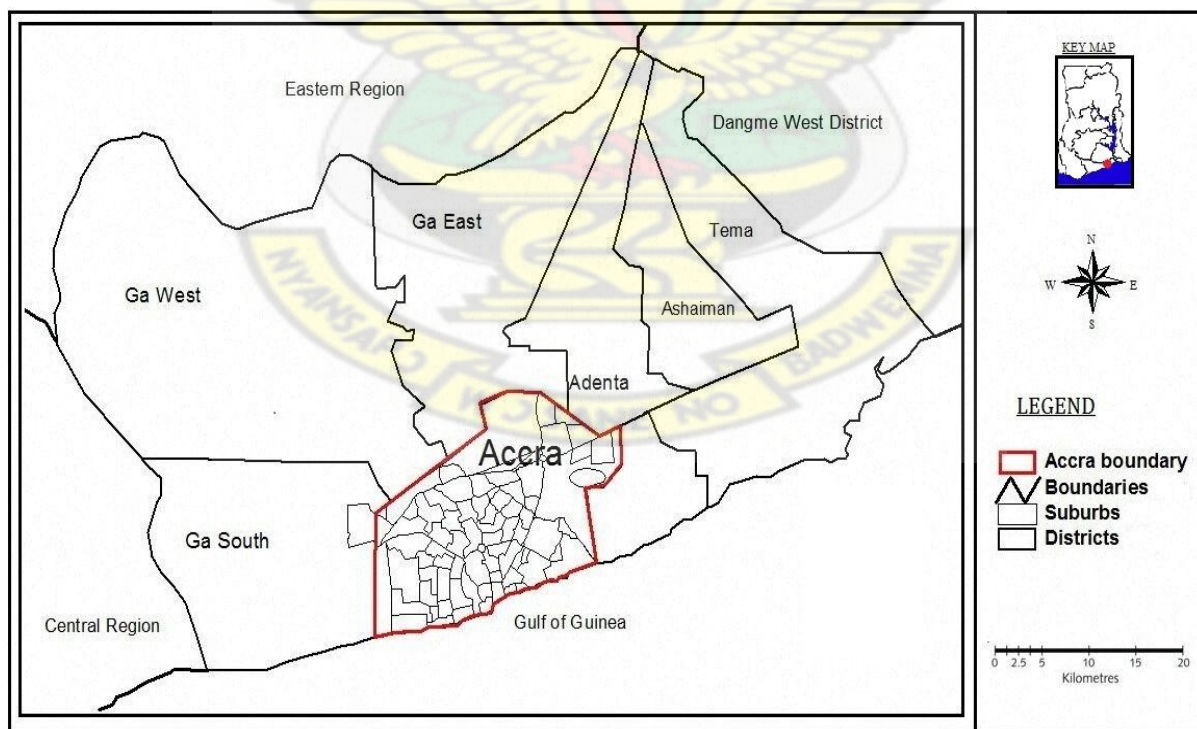


Figure 4.1: Location Map of Accra

Source: Adapted from AMA MTDP 2010-2013

4.3 Population

The GSS (2012) estimated that the population of Accra Metropolis is approximately 1,848,614 as shown in Table 4.1. In addition to this number it is estimated that on daily basis there is an influx population of one million to the city for various socio-economic activities. Accra has almost 42 percent of the total population of the Greater Accra Region.

Table 4.1: Total Population of Accra by Gender and Disabilities

Gender	Population of Accra	Without disability	With disability
Male	905,821	815,239	90,582
Female	942,793	848,514	94,279
Total	1,848,614	1,663,753	184,861

Source: Adapted from AMA's GSGDA, 2009-2013

According to the World Bank (2010) and AMA (2010), larger populations estimated to be well over a quarter of a million reside in Ablekuma South, Ablekuma Central and Ayawaso Central. Ayawaso West, which spans a large geographic area, has a significantly smaller population than other sub-metros with an estimated 70,000 people as shown in Table 4.2.

Table 4.2: Population Distribution of the Sub-metros in Accra Metropolis

No	SUB METRO	Total Population	Population of Children
1	Ablekuma North	197,024	67,422
2	Ablekuma South	213,914	72,731
3	Ablekuma Central	268,424	91,264
4	Ashiedu Keteke	117,525	39,959
5	Osu Klottey	121,723	41,386
6	Okaikoi North	228,271	77,612
7	Okaikoi South	121,718	41,384
8	Ayawaso East	183,498	62,389
9	Ayawaso West	70,667	24,027
10	Ayawaso Central	142,322	48,389
	Total	1,665,086	566,563

Source: Ministry of Local Government, 2011

Deduction from GSS (2012) shows that the total population of children of school going age in Accra is 566,563. According to AMA (2014) Accra is one of the districts with low school participation rate in Ghana. The influx of traders from all walks of life to the national capital for economic purpose has increased the children population significantly.

The GSS (2012) indicates that about 18 percent of children of school going age were not enrolled in basic education due to poor socio-economic backgrounds of parents and guardians. These children were mostly hawkers on the streets and involved in other menial economic activities for their personal survival and support to family income.

4.4 Education

The central theme of the study is education and therefore the need to give a snapshot especially basic education in Accra. Issues considered in this context include the school participation rate, enrolment, Children with physical disabilities in basic schools, Basic education infrastructure, Quality of education services, street children in Accra.

According to the AMA (2010) the total number of children enrolled in public basic school is 170,000 out of the total of 278,013. This is about 50 per cent of the children within the school going age. Enrolment in public schools is high at all levels in the city. The private sector absorbs relatively smaller quantum of the children population.

4.4.1 Education Enrolment in Public and Private Schools

In the view of the World Bank (2010) slightly more than half of the total households in Accra have at least one child of basic school age (6 – 14 years). Of these households, 60 percent send their children to public basic schools. The document indicates that a very small percentage of households (2%) have basic school-aged children not attending school. Children's enrolment rates in public basic schools differ across sub-metros.

Children were enrolled mostly in public basic schools in Ashiedu Keteke than children in other sub-metros of which 80 percent of the households use public schools. The enrolment rate in public basic schools is also higher, at 64 percent in Ablekuma South and Ayawaso East. Private school enrolment rates were highest in Ayawaso West where 64 percent of households' children attend private basic schools (World Bank, 2010). Table 4.3 gives the details on enrolment of children by sex and abilities in Accra. The enrolment of children at various levels is critical in assessing the dropout rate of pupils in the city.

Table 4.3: Education Enrolment in Accra Metropolis

Level	Enrolment		
	Boys	Girls	Total
KG	5,252	5,039	10,291
Primary	51,256	47,636	98,892
JHS	28,668	30,067	58,735
Special School	86	68	154

Source: Metro Education Service, AMA, 2010

Deduction from table 4.3 indicates that participation in primary school is higher than KG and JHS in Accra. There is a significant drop in the participation of basic education from primary school to JHS. The dropout rate however is 0.59. The implication is that more than 50 percent of children from primary school dropout from school. The vulnerable group such as children with disabilities and children with poor socio-economic backgrounds as well as the shift system practiced in basic education in Accra are contributors to the high records in dropout rate in Accra. There is one (1) special school established for children with disabilities. The total enrolment however is 154. Out of the total 86 are boys while the 68 are girls.

4.4.2 The Nature and Quality of Basic Education Infrastructure in Accra Metropolis

There are 359 Primary schools and 428 Junior High Schools within the Accra Metropolis. In all, the basic school hold nearly 160,000 pupils. Since July 2012, the Inclusive Education programme has been expanded to 12 new districts with the support of UNICEF. This means the Inclusive Education Programme has now reached 46 districts spread across all ten regions as at June, 2010. The available classroom space can take approximately only 89,000. In order not to deny the remaining 71,000 children who represented 44 percent of the school population, their right to education, the Metropolitan Education Directorate had, for many years, been compelled to adopt the Shift System of Basic Education. By this system, a classroom was shared between two classes. The classrooms are used in turns for the morning and afternoon shifts by Two (2) different schools (AMA's GSGDA, 2009).

A study conducted by World Bank (2010) on quality of basic education in Accra revealed that about 87 percent of public school buildings are in "good" or "very good" condition. About 84 percent are within high access and quality basic education services. 81percent of basic schools have adequate toilet facilities for 'boys' and 'girls' and facilities; 84% of the toilet facilities are kept in "reasonable" and "good" condition. Analysis of the profile of Accra metropolis provided information to help in gathering data for further analysis.



CHAPTER FIVE

DISCUSSION OF RESULTS

5.1 Introduction

This chapter analyses the results of primary data collected from the study area. It examines the background of the respondents, their physical mobility and the structural barriers within the built environment and in the basic schools in Accra. It also outlines the challenges of incorporating associated with Universal Design concept in facilities in schools. The analysis was guided by the research questions detailed out in chapter three.

5.2 Demographic and Socio-Economic Characteristics of Respondents

This section explores the age, sex, disability type and causes, and the educational of pupils with physical disabilities at the basic schools in Accra. It gives an overview of the place of origin, nature of their dwelling and mode of transport to school. A total of forty-three (43) respondents participated in the survey.

5.2.1 Age and Sex Distribution of Respondents

The age distribution of respondents was necessary to identify the cohort that recorded the highest number of children with physical disabilities also in order to draw implications for their welfare and development.

Table 5.1: Age Distribution of Respondents

Age Distribution	Frequency	Percentage
5-9	2	5
10-14	12	28
15-19	20	46
20-25	9	21
Total	43	100

Source: Field Survey. April, 2014

These cohorts presented in Table 5.1 shows that the survey cuts across a range of ages beginning from age 6 to 20. This is because children at the basic level of education usually fall within this age range. Among the children involved in the study, the highest of 46 percent was identified in cohort 13 to 16 years. These respondents were found in the selected Junior

High schools for the study. This indicates that some children with disabilities are able to transit from primary schools to Junior High Schools despite the marginal changes in the school environment. The enactment of the Disability Act coupled with public education on disabilities has further reduced the recorded cases in children. The assistance from society and cooperative organizations has also put into schools, children with disabilities who were once excluded from basic education. It was also detected from the study that most of the children with disabilities do not start school on time at the right school going age relative to their counterparts who are not disabled.

From the survey, some parents hide them in rooms to avoid social stigma. It was realised that independent in mobility and ability to undertake some life activities among children with disabilities at tender ages is difficult. Parents therefore keep them at home until later years in their lives when they were capable to some extent to perform some of the activities personally without having to depend on others. These explain why majority of the children have grown past the normal age cohort for children in basic schools.

Disabilities affect both male and female population; hence it was necessary to identify the sex distribution of the respondents. In all, twenty-five (25) males and eighteen (18) females were involved in the survey as shown in Table 5.2.

Table 5.2: Sex Distribution of Respondents

Sex	Overall Total		In school		Out of school	
	Frequency	%	Frequency	%	Frequency	%
Male	25	58	21	64	4	40
Female	18	42	12	36	6	60
Total	43	100	33	100	10	100

Source: Field Survey. April, 2014

The list on PWDs from SpED Metro Directorate revealed that 58 percent of PWDs were male. This data reveals the imbalance gender parity of male-female pupils' population at basic schools in Accra. The study showed that there were more males with disabilities in school than females (Metro Education Division SpED, 2014). It was evident in the study that causes of disabilities by injuries were more associated with boys than girls. This could be attributed to two main factors. It is possible that mobility impaired boys are more likely to be in school than their female counterpart and also males were prone to physical disabilities than females by injuries and accidents as indicated by Tetteh (2007) on a national survey

conducted on gender balance of the disabled population. According to Tetteh (2007) about 62 percent of the physically challenged are males against the female population of 38 percent. It assumes that the males of the physically challenged population are able to attain education than the females. This can explain the reason for the wide disparity between male-female populations in Basic schools in Accra.

5.2.2 Types and Mobility Aids

The nature¹ and type of disability informs the mobility aid that would be required at any point in time to access facilities in the built environment. Therefore it was necessary to ascertain the nature of impairment to know the level of easiness of access to facilities schools.

Table 5.3: Nature and Mobility aids of Physical Disability

Nature	Number of pupils in school		Number of pupils out of School		Mobility Aids	Frequency	Percentage
	Frequency	Percentage	Frequency	Percentage			
Amputated leg	2	5	-	-	Crutches	2	5
Impaired in one leg	7	16	-	-	Calipers	2	5
Impaired in both legs	12	28	4	9	Wheelchair	5	12
Impaired in one hand and both legs	6	14	1	2	Locally improvised wheels	6	14
Impaired in both hands and legs	1	2	3	7	None	28	65
Cerebral Palsy	5	12	2	5			
Total	33	77	10	23		43	100

Source: Field Survey. April, 2014

Table 5.3 presents the nature of the disability and the mobility aids used by people with physical disabilities to enable them access and use various facilities in the built environment.

¹ The nature of disability in the contest of this study looks at the severity or intensity of the disability case of an individual. Some cases recorded are more severe than others which demand sophisticated assistive devices otherwise more dependency on others to be mobile and go about their activities relative to other recorded cases. A case in point is a child who is impaired in both legs and one hand in a wheel chair.

The causes of impairment reveal how pupils acquired their disability. In the view of WHO (2010) early intervention measures can prevent approximately 70 percent of the childhood disability caused by vaccine for preventable diseases such as polio, malnutrition and micronutrient deficiencies.

Table 5.4: Causes of Impairment

Cause of impairment	Frequency	Percentage
Injury	16	37
Under developed limbs	8	19
Diseases	19	44
Total	43	100

Source: Field Survey. April, 2014

From Table 5.4, about 81 percent of the disabilities were acquired later in the lives of the children. This means that children are generally at risk of acquiring impairment in life. The study also showed that 44 percent of the respondents were impaired by preventable diseases such as polio and paralysis from birth. An additional 8 percent of the children were impaired by underdevelopment of limbs (8%) which were attributed to poor health service delivery and complications during conception. It is anticipated that the introduction of free maternal care introduced under the National Health Insurance Scheme (NHIS) would significantly reduce the incidents of polio and paralysis. However, the NHIS must be complemented by intensive education so that pregnant mothers would take up the health opportunities made available to pregnant women under the scheme.

About 37 percent of the children had physical disabilities caused by injuries sustained through football, motor accidents, and stair cases. This assertion explains to an extent the disparity between male and female participation in basic education so far as pupils with disabilities is concerned. Since football injuries and other accidents are relatively higher with boys than girls, disabilities were more identified with boys than the girls at the various schools studied.

The students with severe cases of disabilities such as those impaired at both upper and lower limbs who have to always depend on people somehow suffered some level of abuses from students and teachers. One students narrated her story that;

“.....the head teacher sacked me from school because she said other people’s children cannot come to school and be carrying me around and wiping my buttocks after visiting the toilet. She said if I do not to put on pampers before coming to school, she will not to allow me study in her school....”

Patience (Wheel Chair user, impaired in both hands and legs, Adedenkpo Primary School A)

Another head teacher exclaimed that

“...children without severe disabilities can be allowed in the mainstream education but those who depend on other student to get to their classrooms and visit the toilet should be taken to a special school where they will be given special attention. As you can see our school does not support such children... ”

Head teacher (Akoto Lante JHS)

The statements showed that children with physical disabilities who may need to depend on other people to move around were left at the mercies of their peers who had little or no knowledge about disability. The study showed that the teachers paid very little attention to them. These pupils struggled with the use of sanitary facilities, obstructed floor surfaces, classroom arrangements (spaces, desks designs and offices) and mostly entrances to buildings in their schools. This has made some of the children with severe physical disabilities who were not fortunate to afford special schools stay out of school.

5.2.3 Level of Education

Education is critical in the development of one’s brain capacity and creativity and to compete in the job market. The severity of the disability of the children has influence on the participation in school as pointed out by some parents and teachers of the studied schools. This is one of the causes that explain why some disabled persons are seen begging along the roads and are not fully involved in decision making processes especially in developing countries. The survey revealed that some of the pupils dropped out of school because of their inabilities to walk without assistive devices and support from families and friends. This was because the education institutions and physical structures could not support them. According to the Special Education Division of the Metro Education Office, the dropout rate among children with disabilities was about 75 percent as at 2013. This was severe at low income and market areas within the metros. The schools with the highest dropout rate were Kotobabi 13,

Akoto Lante JHS, Adedenkpo primary A and B. The Special Education Division was strongly pushing for alterations on existing school facilities and making sure that all new school infrastructure provided met the universal access standards to enable children with disabilities participate in basic education in Accra.

Table 5.5: The Educational Level of Respondents

Level of Education	Frequency	Percentage
Lower Primary	7	16
Upper Primary	12	28
JHS	18	42
No form of education	6	14
Total	43	100

Source: Field Survey. April, 2014

From Table 5.5 shows the educational background of children in school and not in school. it was identified that 86 percent of the respondents had some form of formal education although some had to drop out from school when they acquired the disability. This was because the educational facilities could not support their physical accessibility needs. This finding is consistent with the observations made by Funkenbusch (2009) who argues that most people dropped-out of school when they acquired disability.

Kofi at Agbobloshie who was impaired in both hands and legs narrated his story as follows:

“...at class one my class had a football match with the upper primary. I suffered a severe injury that caused some fractures at my lower limbs. After months at the hospital, I was told I couldn’t walk again. My parents always leave me with an Aunt who stays in the same compound with us when they go to work. My mother often cries when she looks at me because I was an intelligent and very hardworking boy. Now I cannot go to school anymore because I cannot walk on my own...”

According to the Social Welfare Department, some of these children become burdens on society which deepens their vulnerability. The Social Welfare has the responsibility to ensure the wellbeing of the children with disabilities in schools. They are however challenged with the government’s inability to commit enough financial resources to provide the physical access needs for the disabled children. Their duties end after breaking the social and institutional barriers to get children with disabilities to participate in basic education. The department is not directly involved in the planning and designing of school infrastructure and

therefore has less input in providing physical access needs for children with disabilities to participate in basic education.

This is different from what has happened in some advanced countries over the years as put forward by Danso et al (2008). They said that the advanced countries have developed various statutory building instruments, such as International Standards, Building Regulations and Guidelines, Codes of Practice, among others to achieve designs and features that can be used by persons with disabilities. The UK and USA in particular have implemented sound policies that meet the accessibility need of persons with disabilities [ADAAG (2004) and The British Standards Institution (2001)]. Other developing countries with assistance from developed countries have made progress to meet physical access needs of children with disabilities at basic school level. The Australian government has supported the Indonesian government to improve physical access to children with disabilities to attain basic education both at rural and urban areas (AusAID, 2013). It was realised from literature that advanced countries have institutions which were in place to promote universal access to persons with disabilities. These institutions have similar functions like that of the social welfare departments in Ghana. The difference was the governments' commitments in resourcing the institutions financially to provide the physical access needs for children with disabilities to participate in education,

The study showed that about 14 percent of the children had not attained any formal education. This was attributed to their disabilities occurred their early stage of life and so their families kept them at home to keep them "safe" from attitudinal and environmental barriers. This is in agreement with the perception of dependency and discrimination by Bruijn et al (2009) on how families have perceived that persons with physical disabilities for respect and honour of the family should stay at home thus restricting their movements to the home and even their neighbourhood within which they live. The children who were out of school were studied in more detail to ascertain their lack of access to basic education.

Table 5.6: Reasons for lack of Formal Education

Reason for lack of Formal Education	Frequency	Percentage
Attitudinal Barriers	4	40
Structural Barriers	1	10
Financial Constraint	2	20
All the above	3	30
Total	10	100

Source: Field Survey. April, 2014

From Table 5.6, social, physical and economic issues prevented children with disabilities from attaining formal education. Attitudinal barrier as a social issue recorded the highest of 40 percent. This is consistent with findings by Cain (2002) that negative attitudes to disability are the biggest barrier to disabled children accessing and benefiting from regular education. Ridicule from fellow pupils and teachers who saw inclusion to be a waste of resources caused one mobility impaired child to drop-out of school.

A mother of a child with cerebral palsy narrated her encounter with a teacher which led to withdrawing her daughter from school,

“...She is in Class 1; she’s just walking about in school learning nothing and disturbing others who are studying. She fails each time, she started at age nine and she has been in the same class for four years now. The other children in her class are five or six years old. I am sorry, we tried our best, but she cannot cope”.

It was also observed that some of the children were kept in the rooms. In one case a mother of a child impaired in both hands and legs explained that

“...We don’t often take him out because he is heavy, he baths and visit the toilet in the room. We take him out only when the room is too hot”.

Children with disabilities are also subjected to abuse by their families or caretakers. In some cases, children with disabilities are not given sufficient food and water in order to control their bowel movements when the parents are not at home. Financial constraint was identified as the third highest (20%) recorded reason why children with disabilities were not in school. According to them, their parents complained they did not have enough to buy school uniforms, books and foot wears for them and even though their able-bodied siblings were in school. The parents again were of the opinion that no institution will employ disabled people after their education. Some of the parents thought that educating their disabled children was a

waste of their investments. There was still strong social misconception about disability in Accra even after the enactment of the disability Act in 2006. Structural barriers are the least (10%) reason for the non-participation of children with disabilities in basic education. The reason was that ones they get admission they will find their way to adopt to the school environment and manage to cope with the facilities that are user-friendly.

5.2.4 Place of Origin to School and Nature of Dwelling

Communities are grouped into localities where income levels, housing characteristics and environmental conditions are similar (World Bank, 2010). Many residential areas contained a mix of residential area classes. It was noted from the survey that none of the students resided in 1st Class Residential Areas, about 63 percent resided in 3rd Class Residential Areas, and 30 percent resided in 2nd Class Residential Areas while 7 percent resided in 4th Class Residential Areas. This implies that majority of the children resided in densely settled and unplanned with limited infrastructure. People who reside in such communities are 2nd and 3rd income earners.

Information on place of origin to school and nature of dwelling was needed to identify the barriers the children faced at home, distance and the barriers faced when travelling to school. The places of origin present information on disabled pupils in school (33) while nature of dwelling provides information on the entire population of 43 respondents as shown in Table 5.7.

Table 5.7: Place of Origin to School and Nature of Dwelling

Place of Origin	Frequency	Percentage	Nature of Dwelling	Frequency	Percentage
Within Community	25	76	Compound house	35	82
Outside Community	8	24	Semi-detached	7	16
			One storey	1	2
Total	33	100		43	100

Source: Field Survey. April, 2014

From the survey identified that 76 percent of students with physical disability attended school in the community where they lived. This is because of proximity and also a means of avoiding barriers associated with the use of public transport. The remaining 24 percent travelled from outside the community to school. These were attributed to the proximity of the parent's place of work to the school. Also the children they stay with at home attend the same

schools so they move together with them and they also support them in the use of the facilities at schools. This implies that although their disabilities were not severe, they still depended on people in one way or the other to get to school and manage life at school.

In the case of the nature of dwelling, about 82 percent of respondents lived in compound houses where certain facilities have to be shared by members in the house. It was identified that 16 percent of respondents lived in semi-detached houses while the remaining 2 percent lived in one storey building. About 98 percent of the respondents lived in single storey house.

5.2.5 Means of Transport of Mobility Impaired Children

This section presents the challenges that physically challenged children faced when travelling from one place to another. Their means of transport are presented in Table 5.8.

Table 5.8: Means of Transport of Mobility Impaired Children

Means of transport	Frequency	Percentage
Walking	27	63
Trotro	5	12
Others	11	25
Total	43	100

Source: Field Survey. April, 2014

From the survey, children with disability who walked from their destinations to schools constitute the highest of 63 percent (about 1.5km on the average). This was because majority of them had their houses located in the communities where they live. The others who lived in other communities had to walk distances from their homes to school and back. However some of these children complained having to run or being ‘dragged’ by their peers anytime they crossed the roads. They complained of tiredness and sharp pain at their ankle anytime they walk.

The second highest recorded means of travel involved those who used other means such as wheelchairs and improvised wheels to carry them about. These people also faced physical barriers such as raised concrete drains and stair cases. These users complained that drivers were not picking them up especially during rush hours as they would have to be assisted to board the vehicles. Other wheel users also complained of the smell due to body exertion. This also prevents them from associating with the public for fear of reproach.

Travelling by ‘trotro’ recorded about 12 percent of the responses. Students who had to travel to school either with their parents or friends complained of high floors of vehicles from the ground. They are always helped by others to board vehicles. However, passenger’s attitude towards them is cordial. Some pay their fares for them. However, none of the respondents could afford to use taxi or private cars which would have been more convenient form of transport. This is attributed to low income levels of parents or guardians for most of them.

5.4 Physical Barriers in Basic Schools

The America’s Disability Act (1996) points out that older facilities which were put up before the concept of universal access and inclusion of people with physical disabilities have features which in their nature are barriers to the mobility of people with disabilities. It further states that these features can be altered to make the facility disability friendly. The survey conducted in the basic schools revealed the barriers faced by the physically disabled pupils in accessing facilities at school after 10 years of enactment of the Disability Act.

5.4.1 Barriers Identified in Classrooms

Table 5.2 shows that about 77 percent of the respondents were in school. All the inclusive schools had at least 1 pupil who was physically impaired. Some schools have made some efforts to implement parts of the Disability Act to make some of the facilities accessible to all. Using the International Standards and Building Codes as yardsticks, a good picture about the barriers identified by the pupils was brought out. The major barriers faced in the classroom by the physically disabled students have been summarized and represented in Figure 5.1.

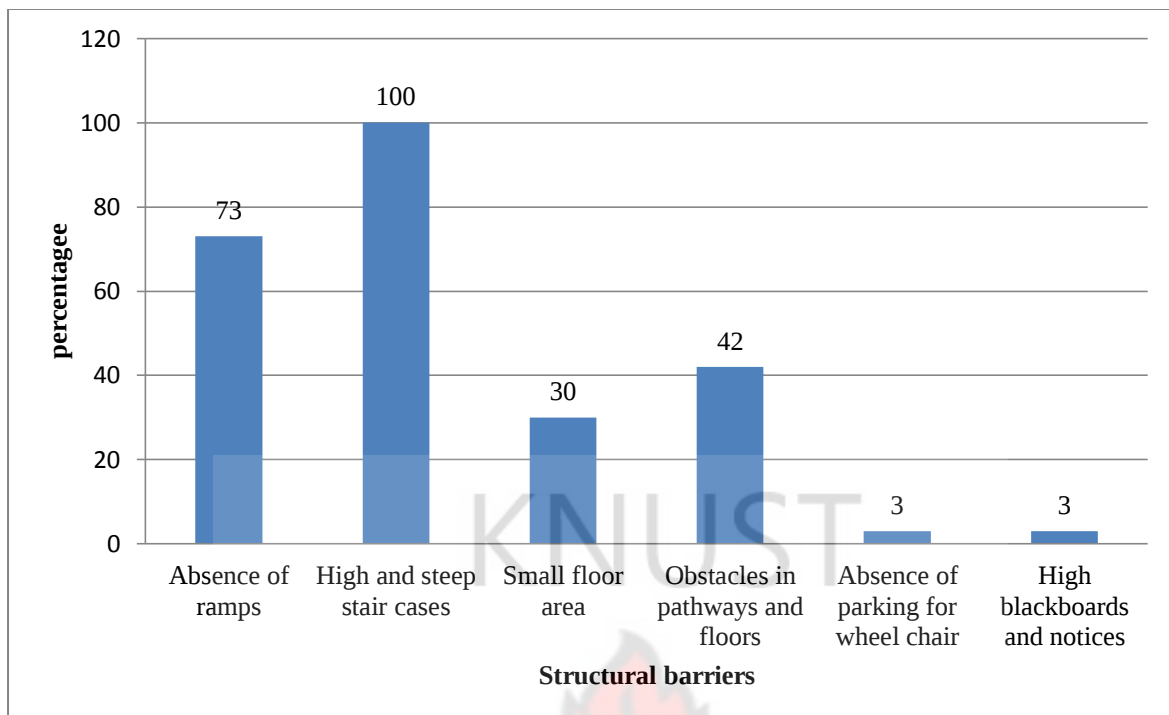


Figure 5.1: Barriers Encountered in the Classroom

Source: Field Survey, April, 2014

About 73 percent of pupils with physical disability complained that the absence of ramps at the entrance to the classrooms was a major barrier to access the buildings. It was observed that entrances to classrooms without ramps were major barrier for students in wheel chair because they are carried by their peers to enter the classrooms. The use of stair cases is normally difficult for children with disabilities. Some classes with disabled pupils were located on the ground floor in order to ease movements for the disabled. However, even such classrooms had raised entrances hence making it difficult to be accessed by a wheel chair user. Figure 5.2 shows the entrance to a classroom at Odorkor 7 primary with flight of stairs with neither a ramp nor guard rails for support.



Figure 5.2: Flight of Stairs at Odorkor 7 Primary

Source: Field Survey. April, 2014

Despite the non-conformity of classroom entrances at Osu Presby ‘1’ JHS, Odorkor 7 Primary and JHS, Maamobi Prisons Primary/JHS cluster and Alogboshie cluster of schools to the International Building Standards for providing access to people with disabilities. It was also identified that the entrances to the classrooms at Kaneshie Kings Way cluster of schools and Maamobi Prisons Primary/JHS cluster met the international building standards of the accessibility needs for the physically challenged. This was because the classrooms had double doors for entry which on the average were higher than the international building standard for universal access. According to the international building standards for the physically challenged, the minimum measurement of entrances (doors) should be 32 inches for all forms of disabilities. Measurement of doors in schools ranged between 32 to 38 inches. This confirms the reason why none of the students complained of narrowness of doors as a barrier. This means that students in wheelchair found it easy using the facility.

About 30 percent of the respondents complained of small floor area. It was observed that wheel chair users were given separate desks at the back of the classrooms because the small spaces between the desks made it inaccessible. Obstacles such as student’s bags, shoes, bowls as well as desks scored 42 percent of the structural barriers faced by PWDs, this inhibited free movement of respondents. Absence of parking for wheel chair and high blackboards and notices recorded the same of 3 percent. This is because the complaint was a wheelchair user as indicated in Table 5.3.

5.4.1.1 *Extent of Universal Access in Classrooms*

According to International Building Standards as stated in Chapter two, a standard classroom should have a route of travel (corridor) with a minimum of 36 inch wide to allow space for the use and manoeuvring of a wheel chair with an accessible route which should have a ramp with the length of 1:12 and a standard stairs adjacent to it. Ramps that are 6 feet long as well as sideways of a corridor should have railings study between 34 and 38 inches high. The entrance of every door should be at least 32 inch wide with door handles at least 48 inch high and easy to open. Moreover aisles between seating should be 36 inch wide and knee space at table 27 inch high and 30 inch wide to allow space for wheel chair. Also from the floor to the writing board should be 36 inch high to ensure access.

Analysis from Appendix 2 depicts that the classrooms used by both the ‘abled’ and PWDs met universal access and international building standards by 40 percent. This implies that, all selected classroom facilities had incorporated an average of 40 percent of the universal design principles. The areas that need attention to make up for the 60 percent deficits were mostly provision of handrails, standard stairs, aisles between seating and installations to make efficient use of wheel chairs. It was identified in all selected schools that the route of travel, floor, ramp surface, entrance doors and its ability to easily open conformed to the international standards, buttressing the reason why none of the students with disability in Chapter 5.4.1 complained of narrow entrance and slippery floors. Moreover it was identified that about 27 percent of the staircases in the basic schools met international standards, this is because about 73 percent of the stairs measured in the basic schools higher and steeper than the international standard of a maximum of 8inch high. For example the stairs in Kaneshie ‘6’ Primary (Okakoi South) have stairs ranging from 5.10 to 16 inch high with no railings for support. This finding supported the issue of high and steep stair case raised by all the respondents.

From the analysis, about 35 percent of schools surveyed had ramps in addition to the stairs to serve as an accessible route for PWDs. 46 percent had alterations made on old facilities with the remaining 54 on newly constructed facilities. Although there were attempts to make classrooms accessible by the provision of ramps, about 60 percent out of the 35percent of ramps did not conform to the international standards (1:12). A new school complex which had not yet been commissioned at Ayawaso Central had measurement of ramp to be 28:87, 12:65 and 9:77. This did not meet the International Standards, the question then is, are the

ramps just provided because it has been stipulated in Ghana's building code or it has been provided to meet the needs of PWDs?

According to GES the average class size should be 40 pupils. From the survey, the average class size was 60 in the selected schools. There were evidences of overcrowding in the classrooms based on the classroom sizes. The situation explains why 7 percent of aisles between seatings conformed to international standards. Moreover, none of the desk was made to meet international building standard, the reason was that the desks were made when the schools were practicing segregation school system. Nothing has been done about them after the conversion of the schools to inclusive schools.

According to international standards, writing boards are supposed to be 36 inch high from the floor. The study showed that 85 percent of writing boards met the international standards, this supports why only 3 percent of the respondents complained of high writing board in section 5.4.1. In all Ayawaso Central scored the highest of 8.5 out of 15 while Okaikoi North and Ayawaso East both scored 4.5 out of 15. This implies that Ayawaso Central with respect to incorporating universal designs in classroom was ahead and it is more accessible than the other sub-metros.

5.4.2 Barriers Identified in Sanitary Facilities

The research exposed the vulnerability of disabled pupils to the unsuitable conditions in sanitary facilities in their various schools. The use of washrooms is usually done privately, yet the washroom in the basic schools has been one area where the needs of mobility impaired persons have received less attention. The pupils shared their experiences with barriers in washrooms. These barriers are summarized in Figure 5.3. Each response was mutually exclusive.

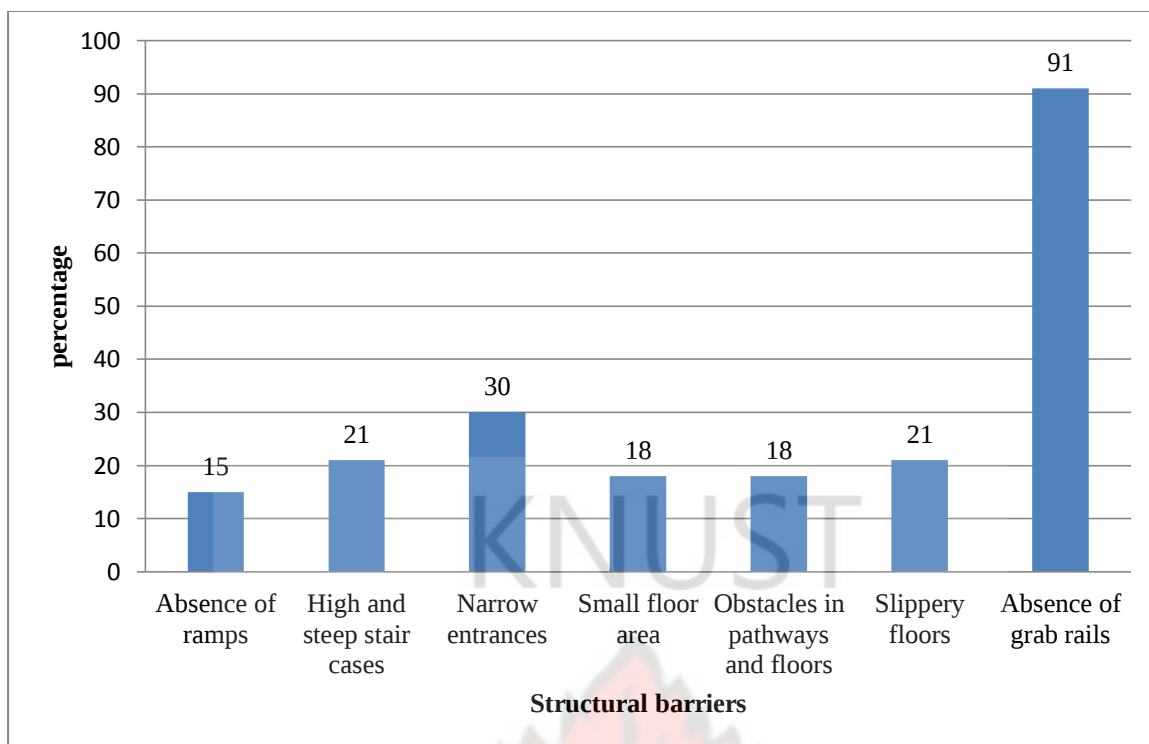


Figure 5.3: Barriers Faced in Sanitary facilities

Source: Field Survey, April, 2014

According to the International Building Standards, washrooms for persons with disabilities should have relatively wider doors that open both ways. There should be no stairs as much as possible and the wash rooms should be spacious enough to accommodate a full turn of a wheel chair. There should also be grab rails for support as portrayed in Figure 2.5.

From Figure 5.3 as many as 91 percent of the pupils expressed concerns over the lack of grab rails which assisted physically disabled people especially wheel chair users. This was particularly the case in washrooms in the schools. A physically challenged girl shared her experience about using the pour flush toilet as follows:

“The use of the pour flush requires squatting and there are no rails to support you when you want to use it. I often suppress the urge to visit the washroom till I get home and in days when I cannot suppress it, I have to hold onto the walls to use it which is not hygienic. I feel a lot of pains especially when I am getting up. I will be very glad when toilet bowls are provided for us.”

Esther, Kotobabi 5 School (Impaired in both



Figure 5.4: Pour Flush Toilet

Source: Field Survey. April, 2014

About 30 percent of the pupils cited narrow entrances as barriers to access washrooms. This is the second highest identified barrier in washrooms in the schools. This type of barrier confronted wheel chair users more than the use of other assistive device. A pupil expressed her concern on the use of the washroom as inaccessible to her.

“I cannot use the washroom because I face a lot of barriers. The entrance is raised and the door is narrow so I cannot get my wheelchair to go through. I was told by my friends that you have to squat to use it, which obviously I cannot do that. Lucky for me a philanthropist bought me a wheel chair which has a potty beneath. My friends have to empty the potty anytime I defecate and sometimes clean me afterwards. Due to this I have been sacked from school because the headmistress says she will not allow other people’s children to do that whiles they are supposed to learn”.

Patience, Adedenkpo Primary A (wheel chair user)

About 21percent of the disabled pupils complained about slippery floors and high-steep stairs as barriers in their schools’ washrooms. Due to irregular flow of water, students fetched water to flush the toilets leading to spillages on the floor and became a hazard to the disabled.

Also, 18 percent expressed that the floor areas were very small and there were obstacles in pathways to the washroom. This is because obstacles such as barrels, buckets and likes cover

parts of the space available for their movement. Pupils with physical disability who swung and dragged their legs when moving often hit their legs against these obstacles.

Not only that, high toilet seats and washing bowls are other critical issues in the discussion of barriers that confront pupils with disabilities in basic schools. This is particularly the case with respect to wheel chair users.

5.4.2.1 Extent of Universal Access in Sanitary Facilities

According to International Building Standards, a universally accessible washroom should have 60 inches measured perpendicular from the side wall and 56 inches perpendicular from the wall to allow the use of wheelchair. It should also have seat height of 17 inches minimum and 19 inches maximum as earlier stated in Chapter two and grab rails (42 inches) on side wall closet to the water closet on the rear wall. Moreover accessibility symbols should be used for disability friendly washroom.

Analysis from Appendix 2 reveals that entrance doors as well as route of travel conformed to the international standards in all the selected schools. It was also identified that there was no accessible washrooms for PWDs because children with mobility had to squat to the pour flush toilet, this made it difficult to be used by a wheelchair user. They resorted to crawling on the floor with hands before using the facility. This has several health implications on the pupils. This is one major reason cited by the children with disabilities as a cause to their truancy and dropout from schools. On the average 30 percent of expected universal design features for physical access for PWDs were incorporated in washrooms of the basic schools in Accra.

5.4.3 Barriers Identified in Library Facilities

The barriers identified at the library were similar to those in the classrooms. From the study, about 62 percent of the schools visited did not have library facilities. From Figure 5.3, 21 percent of students surveyed stated they did not face any barrier with the use of library facilities. Obstacles in pathways and small floor spaces at computer labs recorded a total of 9 percent each in schools with library facilities. Averagely, it was realised that the size of the libraries were relatively smaller. There was overcrowding in the libraries because of the room sizes and over populated class sizes. The schools improvised to accommodate as many of the

pupils as possible. Spaces for movement and manoeuvring around the libraries irrespective of mobility aids used proved problematic for the children with disabilities.

About 9 percent of the respondents complained about high book shelves at the libraries in the library facilities in their schools. The narrowness of entrances to enter library rooms and small floor area recorded was also an issue of concern for 3 percent of the respondents respectively. However, they did not identify issues on the absence of ramps, high and steep stair cases, the absence of parking for wheelchair, high computer desk and absence of hand rails as barriers. This means that disabled children in the basic schools have mild disabilities mentioned earlier.

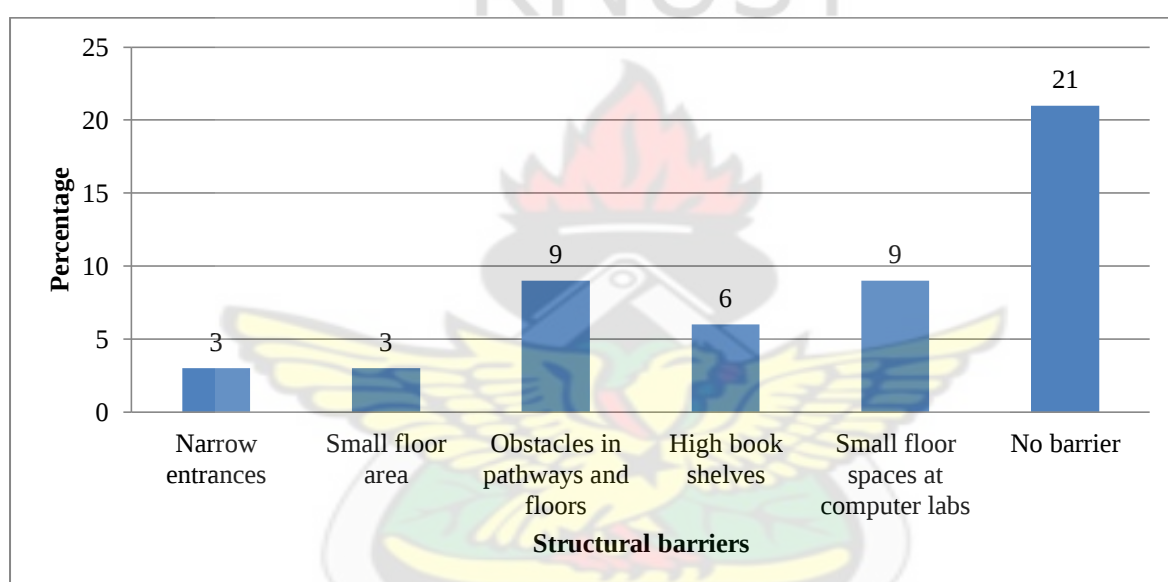


Figure 5.5: Barriers Encountered at the library

Source: Field Survey, April, 2014

5.4.3.1 *Extent of Universal Access in Library Facilities*

According to International Building Standards a library should have a route of travel (corridor) with a minimum of 36 inch with an accessible route which may have a ramp with the length of 1:12 and a standard stairs adjacent to it. Ramps that are 6 feet long as well as sideways of a corridor should have railings study between 34 and 38 inches high. The entrance of door should be at least 32 inch wide with door handles at least 48 inch high and easy to open. Moreover aisles between seating and stacks at the library should be 36 inch wide and knee space at table 27 inch high and 30 inch wide to allow space for wheel chair. Also from the floor to the writing board should be 36 inch high to ensure access.

Furthermore, a minimum clear aisle width between of 36 is preferred with height in stacks areas unrestricted.

Appendix 2 shows that the extent of universal accessibility of library facilities was 28 percent, this implies that accessibility is below average. The extent to which library facilities are user friendly to PWDs was less than 30 percent in basic schools in Accra. It was identified that 50 percent of the selected schools did not have libraries present at their schools. This confirms the 62 percent of libraries absent in schools in the entire Municipality under section 5.4.3. Moreover about 60 percent of these libraries were located in single storeys and did not require the use of ramp or stairs to access them, however the floors were raised to an average of 3 inch and this made it difficult for wheelchair users. The remaining 40 percent had standard stairs but did not make provision for a ramp to make the library accessible to all; neglect of this confirms that PWDs at the Basic school was not severe.

From the survey, it was revealed that all route of travel to library and door handles had a minimum of 38 inch wide and 48 inch high hence complying with international standards. However it was identified that most of these doors did not have door handles but had door lock as a result of this doors are always opened till school closes. Moreover, the average of aisle between seating between seating is 24 inch. This did not conform to the international standard of 36. It implies that no provision had been made for the wheelchair users. Also, it was identified that stacks of libraries were attached to the walls and accessible to all. In general, Ayawaso Central scored the least accessibility for PWDs in terms of library facilities.

5.4.4 Barriers Identified in School Playing Grounds and Open Spaces

Each school had playing ground or open spaces which were used together by both the abled and mobility impaired pupils during break periods. The major barriers faced on the compound by the physically disabled students has been summarized and represented in Figure 5.4.

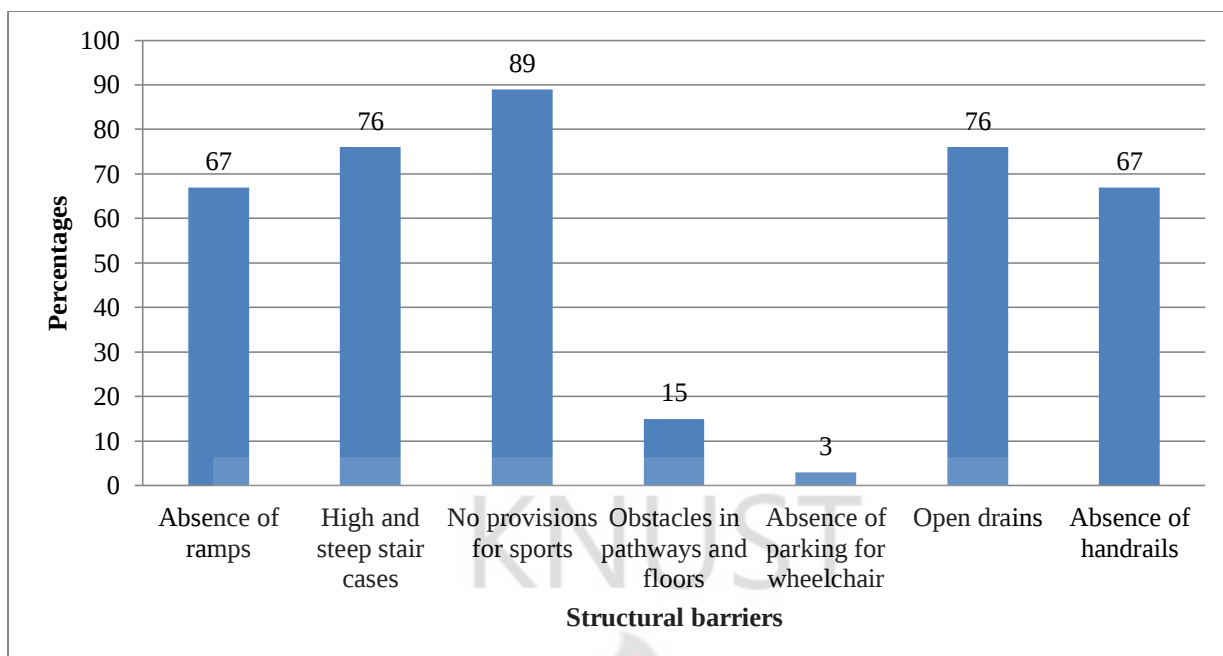


Figure 5.6: Barriers Encountered on the Playing Grounds

Source: Field Survey, April, 2014

Figure 5.4, no provision for special sports for children with disabilities was the highest, (89%). From the survey, none of the schools had sporting activities for the disabled. The pupils played together and normally discriminated against the children with disabilities. A physically challenged pupil shared his experiences.

“My friends do not want to play with me because they say I am clumsy. I can’t play football or do any other sports. Football is for strong boys. They sack me anytime I try to get closer. This makes me sad. During break, I either sit on the corridor to watch them or sit in the classroom to read my book.”

Emmanuel, Akoto Lante JHS (Cerebral palsy)

Another student also shared her experience with respect to attitudinal barrier sporting activities as follows:

“The playing ground is full of gravels..... anytime I walk I feel sharp pain in my heart. This has prevented me from doing so many things in school. Days when I am not able to bring food from the house, I have to ask a friend to buy food for me because the canteen is far. I cannot play with them either because I will not be able to bear the pain, so I just sit and watch them.”

Vida, Nima 1 Primary (Impaired in both legs)

About 76 percent of the pupils identified high and steep staircases and open drains as the major barrier on school compounds. This was because the staircases served as a link between the classrooms and the school playing grounds. Open drains also major barrier to the pupils. This compelled them to take extreme care when crossing or using alternative routes on the open spaces to the classrooms and other facilities on the school compound (See Figure 5.7). A student shared her experience with crossing of open drains.

“You have to cross the open drain to get to the compound and finally to the school’s main entrance. I am always careful when crossing that drain. One day I missed my footing and I fell to the ground. I was lucky I did not get hurt, the students laughed at me papa.”

Clara, Kotobabi 13 JHS (Impaired in both legs and one arm)

Absence of ramps and absence of handrails scored 67 percent among the respondents. These barriers were related to high and steep stair case. About 67 percent of the respondents complained of no hand rails for support when climbing and descending the stairs. Some of the respondents had to hold to their friends for support when either climbing or descending the staircase. Obstacles in pathways, floors and absence of parking for wheel chair scored 15 percent and 3 percent respectively. Some of the obstacles recorded included drums on corridors, tree branches and stones among others in the schools.



Figure 5.7: Open Drains at Kotobabi ‘13’playing ground

Source: Field Survey. April, 2014

5.4.4.1 *Extent of Universal Access in Playing Grounds in Schools*

It was revealed from the survey that the design of stairs and ramps at the entrances of classrooms presented several barriers to PWDs and the situation did not differ on the compounds because they served as links. Mathematically, an average of about 50 percent access needs was present on school compounds. The extent of accessibility of the school compounds by PWDs in basic schools in Accra was 50 percent. This was the highest relative to the other school facilities. It means that pupils with disabilities easily use the school compounds than other school facilities relatively.

5.4.5 *Barriers Identified with Canteens*

Form the survey, it was realised that about 27 percent of the school did not have school canteens. Therefore the pupils and teachers bought food from the community food vendors. This was particularly difficult for the disabled students. Similarly minor problems were identified in school canteens compared to the classrooms, sanitary facilities and libraries. The major barriers faced by the mobility impaired pupils have been summarized in Figure 5.8.

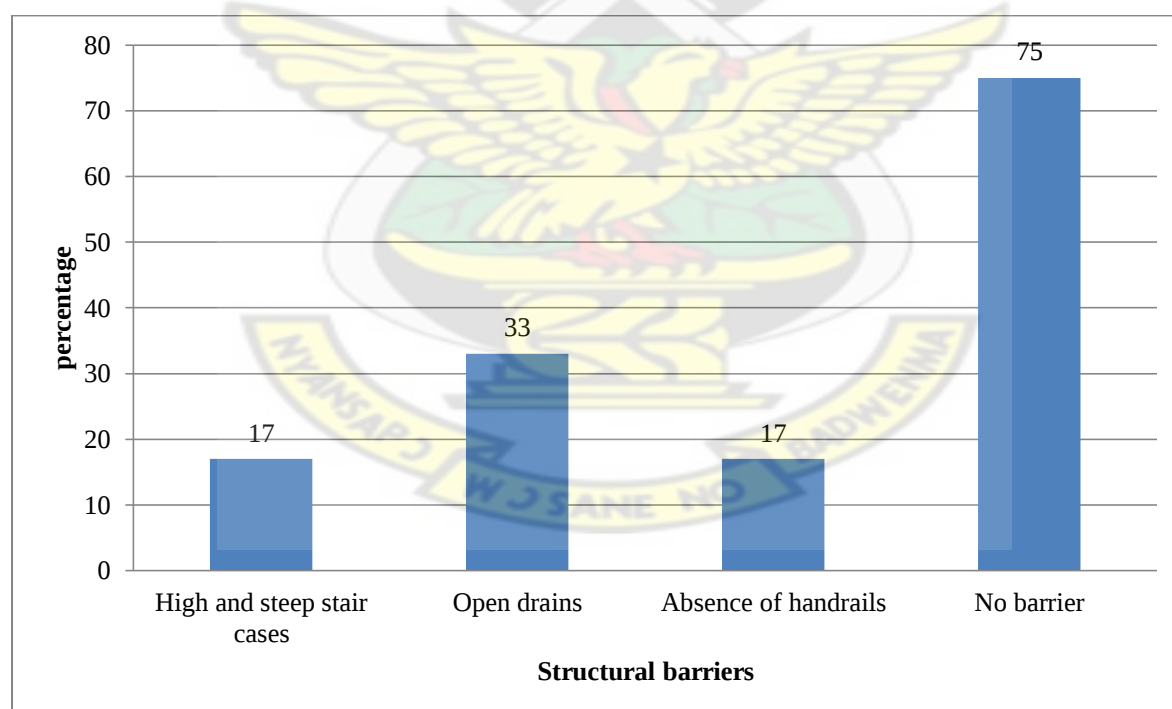


Figure 5.8: Barriers Encountered at Canteens

Source: Field Survey, April, 2014

Figure 5.5, out of the remaining 73percent which had school canteens showed that about 75 percent of the respondents faced no barriers with the use of the canteens. Some of these respondents complained of the distance to the canteen (as implied earlier by Vida).The implication is that though the canteens had minor barriers because of their structural designs most of facilities were user friendly so far as physically disabilities was concerned.

Open drains recorded a total of 33 percent out of the total barriers cited by the pupils on the canteens. These students had to skilfully cross the gutter least they fall. High and steep stair cases and absence of hand rails scored 17 percent each. This was because these students had to climb stair cases to access the canteens in their schools. However it was realised that the remaining barriers scored zero. This could have resulted from their canteens basically being in the open, therefore barriers that came with structures was reduced.

5.4.5.1 Extent of Universal Access in Canteens

According to International Standards, the size of the canteen space depended on whether all children had to sit and eat together at the same time or whether they had to go in turns From Appendix 2, it was revealed that 100 percent of canteens were in open space and did not require the use of doors, ramps and stairs. Also, the routes of travel in all selected schools met the International Standards. Special spaces that can be accessed by wheelchair users were absent in all selected schools. According International Building Standards, knee space at table should measure 27 inch high, 30 inch wide and 19 inch deep, from the survey it was revealed that none of the table measured met the international standard. Averagely, the knee space measured 16 inch high, 25 inch wide and 17 inch deep.



Figure 5.9: Open Canteen at Richard Akwei Memorial

Source: Field survey, April, 2014

Open canteen at Richard Akwei Memorial Inclusive basic school. The canteen did not have well-constructed structures and therefore most of the expected features for universal access in facilities did not apply to canteens of this nature.

On the average, the canteens were about 49 percent user friendly to PWDs based on the analysis from Appendix 2. This means that 49 percent of International Building Standards to meet accessibility needs of PWDs were found in the school canteens. The provisions made in the facilities were by default and not out of a conscious effort to meet the needs and comfort of the children with disabilities. The canteens were privately constructed and operated for businesses. The society has not come to terms with the plight of PWDs and the need to provide for them within the built environment.

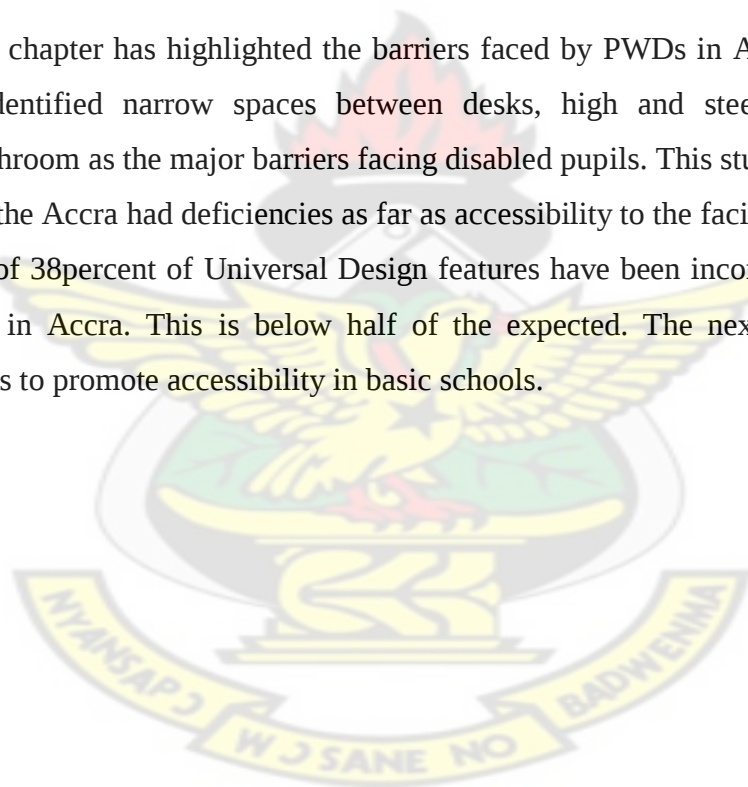
5.5 Physical Access to Educational Facilities in Accra Basic Schools

The units, departments and organizations in-charge of infrastructure provision in Accra basic schools indicated that they were now adopting the concept of universal designs to promote accessibility for people with disabilities. The departments and offices in charge of educational infrastructure provision were adequately resourced in terms of human resources. However, the respondents regularly emphasized that the departments did not have adequate financial resources to retrofit old facilities to make them universally accessible. Though the Assembly considers Universal Access to educational infrastructure as a concept to guide the

creation of a sustainable community, the concept is only enforced to an extent when new facilities are being constructed.

It means that future students with disabilities which will need specialized provisions to enable them use the facilities in schools will find it difficult. Nonetheless, head teachers were also making efforts through Parent Teacher Association (PTA) and also applying to the Assembly for funds to construct user friendly facilities and make alterations on old facilities in the schools. From the survey the only effort that had been made in making educational facilities barrier free for children with disabilities is provision of ramps with no hand rails .The action taken by the various schools was not to admit these students although they may be brilliant but because the schools could not meet their needs.

In summary, the chapter has highlighted the barriers faced by PWDs in Accra basic school. The research identified narrow spaces between desks, high and steep staircases, and inaccessible washroom as the major barriers facing disabled pupils. This study has shown that basic schools in the Accra had deficiencies as far as accessibility to the facilities is concerned. A total average of 38percent of Universal Design features have been incorporated into basic school facilities in Accra. This is below half of the expected. The next chapter outlines recommendations to promote accessibility in basic schools.



CHAPTER SIX

SUMMARY OF FINDINGS, RECOMMENDATIONS AND CONCLUSION

6.1 Introduction

The data analysis in the previous chapter has revealed major issues that need to be rectified in order to promote physical accessibility in basic schools. This chapter presents a summary of the findings from the analysis which forms the basis of recommendations to improve current situation.

6.2 Summary of Findings

The findings of the study were based on the objectives of the research.

Objective 1: To identify the barriers that impede integration of PWD's at the basic level

Despite the enactment of the Disability Act (2006) little has been done about the physical accessibility needs of the pupils with physical disability in schools. The study revealed that about 81 percent of all mobility impairments are acquired rather than from birth, mostly through various forms of accidents. This implies that each individual is prone to being impaired in their lifetime. The educational environment should therefore be structured to anticipate the needs of children with disabilities, bearing in mind that everyone in society is somehow at risk of being disabled.

Moreover, it was revealed that all basic school infrastructures in Accra were characterized by some structural barriers. The incidence of steps, the absence of ramps and guard rails along steps or ramps were identified by the mobility impaired pupils as major barriers to physical accessibility to the built environment. Other obstacles that were identified included narrow doorways and corridors, obstructive objects, slippery floors and steep ramps. Barriers that were identified within the washrooms include the absence of panic alarms, the absence of grab rails, the inadequacy of manoeuvring space as well as slippery floors and sinks that were too high to reach. This ensured that mobility impaired persons either did not enjoy their privacy when visiting the washrooms or they had to adopt other unsanitary measures to access these facilities.

The survey conducted on the educational facilities confirmed that barriers did exist, and they restricted the free movements of the mobility impaired children. The practice of inclusive

education in Accra confirms government commitment to provide education for all children with and without disabilities. The extent to which the needs of PWDs are included in the main stream education in Accra are discussed in the next section, under the second objective of the study.

Objective 2: To assess the extent to which the needs of the disabled have been included at the basic level to promote access.

From the survey, it was identified that structural barriers are more severe with old buildings than with newly constructed facilities in basic schools in Accra. These new buildings still had gaps with regards to meeting the accessibility needs of pupils with physical disability with regards to accessible washroom, providing standard ramps and hand rails.

Moreover, it was envisaged that provision of ramps whether it met international standards or not was the means needed to make educational facilities disability friendly. Schools that had ramps constructed beside the staircase believed they had met the needs of the physically disabled pupils.

The study uncovered that majority of the existing educational facilities constructed ramps from contribution from parents and philanthropist such as NGOs example Friends of the Handicapped International because little or no effort had been made by the Assembly in altering the existing facilities.

Trained resource teachers who attend to the needs of the pupils with disabilities area of jurisdiction has increased from four (4) to an average of seven (7). However due to insufficient resource teachers, the work load of resource teachers in assisting students with disabilities has increased.

Since the passage of Disability Act 2006, the Ghana Building Code as well as the building regulations has not clearly been stipulated although the Act is visited at some point in time. At the time of conducting the research, there was no plan to be followed when building to incorporate the structural accessibility needs of the disabled in public buildings, and there was no legislative instrument to enforce any regulations on the general public.

Consequently, the Development Control Unit only construct ramps in new facilities neglecting the needs of the existing facilities, the existing washrooms which was used by both new and existing facilities remained disability unfriendly.

It was assessed that averagely about 38 percent of the required universal design principles have been incorporated into the basic school facilities to aid PWDs. Children with disabilities face diverse barriers that impedes their mobility and use of facilities at schools. In view of these emerging issues, some measures to improve the state of physical accessibility for the mobility impaired children are suggested and discussed in the ensuing section.

Objective 3: To suggest recommendations that can promote access of PWDs at the basic level

Based on issues identified in the analysis and findings, the following plausible recommendations are suggested to improve upon the accessibility of PWDs in basic schools in Accra.

1. Legislation and Enforcement

The success of inclusive systems of education depends largely on a country's commitment to adopt appropriate legislation, develop policies and provide adequate funding for implementation. Creating or amending a national plan of action and establishing infrastructure and capacity to implement the plan are essential to including children with disabilities in education. With the passage of the Disability Act (715) in 2006, the Ghana Building Code and Ghana Building Regulations should be revised and passed into laws by the government to make it mandatory for all educational facilities to be accessed by PWDs. This law should be enforced by the AMA and the government should penalise all defaulters.

2. Funding

The government should increase public expenditure through the national budget by setting up a Special National Fund (as in Brazil) to implement and support inclusive education practices. The AMA will therefore be obliged to increase expenditure and budget allocation through taxes to develop inclusive education. The AMA should budget for accessibility needs for PWDs in schools and mobilize resources to improve the structural design of the

educational facilities. Funds are essential to support inclusion policies to be implemented, regardless of whether services are segregated or inclusive, financial resources must be committed to ensure the successful implementation of the Disability Act.

3. Education on Disability

Education along with technical assistance on enforcement procedures should be provided to improve awareness of the need for accessibility and understanding of universal design. Stakeholders such as government, policy makers and PWDs groups under Ghana Federation of the Disabled (GFD) should collaborate and organise workshops for the general public on the need for an inclusive environment. Public education through electronic and the print media can be used to sensitise the general public. Refresher courses should also be organized for teachers by the Metro Education Directorate to educate on disability handling and management. This will curb the negative perception that PWDs are to be confined to their homes and neighbourhoods as identified in the analysis and bring people to the understanding that PWDs are part of our society to incorporate their physical accessibility needs into the built environment for their welfare and development.

The Ministry of Education should train all teachers, school administrators, caregivers and community development workers on inclusive education methods and how teachers should avoid and address bullying, teasing or other discriminatory and degrading treatment of children with disabilities. The Ministry of Gender and Children Affairs together with the Ministry of Education, carry out awareness-raising campaigns on the right to education, non-discrimination, and other rights of persons with disabilities, targeting the public at large, teachers, school administrators and parents.

4. Retrofitting basic school facilities in Accra Metropolis

According to the International Building Standards, all buildings should incorporate the needs of the disabled. It is recommended that at least one entrance per facility should be accessible to PWDs by school authorities in Accra Metropolis. The Ghana Education Service, Parents and Teachers Associations, Social Welfare Departments in collaboration with schools should construct access leading to their respective principal entrances with necessary inclusion of accessible ramps to make the facilities user friendly with funding accessed from the Special Funding instituted by government for construction and maintenance of educational facilities.

School authorities and resource persons should also clear corridors of facilities of all obstructions to facilitate free and easy movement and prevent injury to PWDs. With regards to staircases, GES and school authorities should install handrails to facilitate easy movement and proper support for the PWDs. Again, 80 percent of existing ramps should be reconstructed to conform to the International standards. Education policy should ensure that at least one washroom should be designed to meet the accessibility needs of PWDs with signage to minimise the possibility of both able and disabled losing their way around those facilities.

The Metro Education Service and school managers, school policies should ensure that libraries and classrooms are located at the ground floors of the buildings if there are storey buildings without elevators. This will make it easier for pupils no matter the disability to access the facilities to an extent without relying totally others all the time. Accessibility audits should also be conducted by Ghana Federation of the Disabled or even by individual citizens. Such audits can encourage compliance to accessibility standards. In Malaysia, for example, groups working on behalf of disabled people are completing audits of major hotels.

6.3 Areas for Further Research

The current research is based on analysis of physical barriers to children with disabilities participation in basic education. Based on the research findings and experiences on the field, the following areas are suggested for further study:

1. Transport Needs of Persons with Disability

The research revealed that children who lived afar from school were challenged with using disability unfriendly vehicles. Because of their peculiar needs, persons with disabilities have been discriminated by drivers and other transport providers. It will be interesting to know the actual transport needs of persons with disabilities and find out ways to meet this need.

2. Community Participation in Inclusive Education

Another area that may also be worth looking into is to assess community participation in making basic education inclusive. Based on inadequate funding to construct and maintain user friendly facilities, there is the need to carefully assess and analyse how government can partner with the community (NGOs, churches, volunteers) in providing these facilities to ensure their needs are met.

6.4 Conclusion

The inclusion of children with disabilities in schools is not a charitable act but a process to promote human rights that benefits the entire population of a country. International human rights instruments, including the Convention on the Rights of the Child and the Convention on the Rights of Persons with Disabilities, provide policies for the development of inclusive practices. More so, to achieve Education for All goals, there is the need to ensure inclusive education. Inclusion requires identifying and attending to the needs of PWDs in the schools. This requires an in depth understanding of the disability and its unique characteristics. From the analysis, children with disabilities are underrepresented in Accra educational system and that the needs of those enrolled are not being met. Without essential knowledge teachers in classrooms will struggle to achieve meaningful inclusion for students with disabilities

Subsequently there are a number of barriers they have to contend with in moving from one location to the other. As revealed by this study, pupils with disability face accessibility challenges at the entrance of buildings as well as within facilities. This reduces the access of PWDs to certain basic facilities and the services provided by these educational facilities. It is also evident that attitudinal barriers play a role in the limited access to education afforded to these children. Current policies and programmes in Ghana do not address cultural beliefs which sometimes impede Ghana's educational aims of EFA and inclusive education. Furthermore legislation on building standards should be enacted and enforced to ascertain compliance to the needs of PWDs. Ensuring access to basic education for PWDs in Accra Metropolis will ensure equal opportunity of users to fully develop their potential and also create a sustainable community.

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APPENDICES

Appendix 1: Enrolment of Children with Mobility Impairment in Accra

Sub -metros	Schools	Number of pupils enrolled
Ayawaso East	Nima 2 Primary	1
Ayawaso West	Maamobi Prisons Primary/JHS cluster	1
Ayawaso Central	Kotobabi 13 JHS	2
	Kotobabi 5 Primary	1
Okaikoi South	Kaneshie Kings Way cluster of schools	1
	Police Depot 'A' Primary	1
Okaikoi North	Alogboshie cluster of school	2
	Achimota Anglican Primary	1
Ashiedu Keteke	Akoto Lante JHS	1
	Richard Akwei Memorial	1
	Inclusive School A	3
	Inclusive School B	2
	Independence Avenue School	2
	Adedenkpo Primary School A	1
	Adedenkpo Primary School B	1
	Sempe School	1
Ablekuma North	Odorkor 5 Primary and JHS	3
	Odorkor 7 Primary and JHS	2
Ablekuma Central	Kaneshie West '1' Basic School	2
	Abossey Okai Methodist	1
Osu Klottey	Osu Presby '1' JHS	2
	Osu Presby Boys Primary	1
TOTAL	22	33

Source: Field Survey, Metro Education Office, 2014

Appendix 2: Facility Accessibility Matrix for Some Selected Basic Schools in Accra Metropolis

No	Universal Design Principles	Ablekuma South					ST	Ablekuma Central					ST	Ablekuma North					ST	Ashiedu Keteke					ST	Osu Klottey					ST
		Facilities in the school						Facilities in the school						Facilities in the school						Facilities in the school						Facilities in the school					
		CR	CN	LI	CP	WR		CR	CN	LI	CP	WR		CR	CN	LI	CP	WR		CR	CN	LI	CP	WR		CR	CN	LI	CP	WR	
1.	Route of travel (36 inch)	√	√	♀	√	√	4	√	√	√	√	√	5	√	√	√	√	√	5	√	√	√	√	√	5	√	√	♀	√	√	4
2.	Ramp (1:12)	#	♀	♀	#	□	1	#	♀	□	#	□	1	□	♀	♀	□	□	0	#	♀	♀	#	#	1.5	□	♀	♀	□	□	0
3.	Surface of ramp (not slippery)	√	♀	♀	√	□	2	√	♀	□	√	□	2	□	♀	♀	□	□	0	√	♀	♀	√	√	3	□	♀	♀	□	□	0
4.	Hand/ Grab rails	√	♀	♀	□	□	1	□	♀	□	□	□	0	#	♀	□	□	□	0.5	#	♀	□	□	□	0.5	√	♀	♀	□	□	1
5.	Stairs (standard)	□	♀	♀	#	√	1.5	#	♀	√	#	□	2	□	♀	♀	□	□	0	#	♀	♀	#	√	2	□	♀	♀	□	√	1
6.	Entrance door (32 inch)	√	√	♀	♀	√	3	√	√	√	♀	√	4	√	√	√	♀	√	4	√	√	√	♀	√	4	√	√	♀	♀	√	3
7.	Door handle (48 inch)	□	♀	♀	♀	√	1	√	♀	□	♀	□	1	□	♀	□	♀	□	0	□	♀	□	♀	□	0	□	♀	♀	♀	√	1
8.	Door easy to open	√	√	♀	♀	√	3	√	√	√	♀	√	4	√	√	√	♀	√	4	√	√	√	♀	√	4	√	√	♀	♀	√	3
9.	Accessible route	□	√	♀	#	□	1.5	#	√	□	#	□	2	□	√	□	□	□	0	#	√	□	#	√	2	□	√	♀	□	□	1
10.	Aisles between seating (36 inch)	□	□	♀	♀	♀	0	#	□	□	♀	♀	0.5	□	□	□	♀	♀	0	□	□	□	♀	♀	0	□	□	♀	♀	♀	0
11.	Space for wheelchair	□	□	♀	♀	♀	0	□	□	□	♀	♀	0	□	□	□	♀	♀	0	□	□	□	♀	♀	0	□	□	♀	♀	♀	0
12.	Top of tables (28-34 inch high)	□	□	♀	♀	♀	0	□	□	□	♀	♀	0	□	□	□	♀	♀	0	□	□	□	♀	♀	0	□	□	♀	♀	♀	0
13.	Knee space at table (27 inch high, 30 inch wide, 19 inch deep)	□	□	♀	♀	♀	0	□	□	□	♀	♀	0	□	□	□	♀	♀	0	□	□	□	♀	♀	0	□	□	♀	♀	♀	0
14.	Blackboard (36 inch)	#	♀	♀	♀	♀	0.5	#	♀	♀	♀	♀	0.5	√	♀	♀	♀	♀	1	#	♀	♀	♀	♀	0.5	√	□	♀	♀	♀	1
15.	Manoeuvring space (60 inch)	#	√	♀	√	□	2.5	□	√	□	√	□	2	√	√	□	√	□	3	#	√	□	√	□	2.5	#	√	♀	√	□	2.5
16.	Accessible rest room	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0
17.	Accessibility symbol	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0
18.	Lavatory rim (34 inch)	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0
19.	Soap and dispensers within reach	♀	□	♀	♀	□	0	♀	□	♀	♀	√	1	♀	√	♀	♀	□	1	♀	√	♀	♀	□	1	♀	□	♀	♀	□	0
20.	Mirror (40inch)	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0
	Expected total	15	10	-	7	15		15	10	15	7	15		15	10	15	7	15		15	10	15	7	15		15	10	-	7	15	
	Actual total	6.5	5	-	4.5	5		7.5	5	4	4.5	4		5.5	6	3	2	3		6.5	6	4	3	6.5		5.5	5	-	2	5	
	Universal access	1	1	-	1	1	4	1	1	1	1	1	5	1	1	1	1	1	5	1	1	1	1	1	5	1	1	-	1	1	4
	Extent of universal access	0.4	0.5	0	0.6	0.3	1.6	0.5	0.5	0.3	0.6	0.3	2	0.4	0.6	0.2	0.3	0.2	1.4	0.4	0.6	0.3	0.4	0.4	1.9	0.4	0.5	0	0.3	0.3	1.3
	General accessibility of sch	0.4						0.4						0.3						0.4						0.3					

o.	Universal Design Principles	Okaikoi North						Okaikoi South						Ayawaso Central						Ayawaso East						Ayawaso West						Average
		Facilities in the school					ST	Facilities in the school					ST	Facilities in the school					ST	Facilities in the school					ST	Facilities in the school					ST	
		CR	CN	LI	CP	WR		CR	CN	LI	CP	WR		CR	CN	LI	CP	WR		CR	CN	LI	CP	WR		CR	CN	LI	CP	WR		
1.	Route of travel (36 inch)	√	√	√	√	√	5	√	♀	♀	√	√	3	√	√	√	√	√	5	√	√	♀	√	√	4	√	♀	♀	√	√	3	1
2.	Ramp (1:12)	□	♀	□	□	□	0	#	♀	♀	#	□	1	#	♀	♀	#	√	2	□	♀	♀	□	□	0	√	♀	♀	√	□	2	0.20
3.	Surface of ramp (not slippery)	□	♀	□	□	□	0	√	♀	♀	√	♀	2	√	♀	♀	√	√	3	□	♀	♀	□	□	0	√	♀	♀	√	□	2	0.20
4.	Handrails/ Grab rails	□	♀	□	□	□	0	□	♀	♀	□	♀	0	√	♀	□	□	□	1	□	♀	♀	□	♀	0	□	♀	♀	□	♀	1	0.12
5.	Stairs (standard)	□	♀	√	□	□	1	#	♀	♀	#	□	1	#	♀	♀	#	√	2	□	♀	♀	□	□	0	#	♀	♀	#	□	1	0.27
6.	Entrance door (32 inch)	√	√	√	♀	√	4	√	♀	♀	♀	√	2	√	√	√	♀	√	4	√	√	♀	♀	√	3	√	♀	♀	♀	√	2	1
7.	Door handle (48 inch)	□	♀	□	♀	□	0	√	♀	♀	♀	√	2	□	♀	□	♀	□	0	□	♀	♀	♀	√	1	√	♀	♀	♀	√	2	0.24
8.	Door easy to open	√	√	√	♀	√	4	√	♀	♀	♀	√	2	√	√	√	♀	√	4	√	√	♀	♀	√	3	√	♀	♀	♀	√	2	1
9.	Accessible route	□	√	□	□	□	1	#	♀	♀	#	□	1	√	√	□	♀	√	2	□	√	♀	□	□	1	#	♀	♀	#	□	1	0.27
10.	Aisles between seating (36 inch)	□	□	□	♀	♀	0	#	♀	♀	♀	♀	0.5	□	□	□	♀	♀	0	□	□	♀	♀	♀	0	#	♀	♀	♀	♀	0.5	0.07
11.	Space for wheelchair	□	□	□	□	♀	0	□	♀	♀	♀	♀	0	□	□	□	□	♀	0	□	□	♀	□	♀	0	□	♀	♀	♀	♀	0	0
12.	Top of tables (28-34 inch high)	□	□	□	♀	♀	0	□	♀	♀	♀	♀	0	□	□	□	♀	♀	0	□	□	♀	♀	♀	0	□	♀	♀	♀	♀	0	0
13.	Knee space at table (27 inch high, 30 inch wide, 19 inch deep)	□	□	□	♀	♀	0	□	♀	♀	♀	♀	0	□	□	□	♀	♀	0	□	□	♀	♀	♀	0	□	♀	♀	♀	♀	0	0
14.	Writing board (36 inch)	√	♀	♀	♀	♀	1	√	♀	♀	♀	♀	1	√	♀	♀	♀	♀	1	√	□	♀	♀	♀	1	√	♀	♀	♀	♀	1	0.85
15.	Manoeuvring space (60 inch)	#	√	□	√	□	2.5	□	♀	♀	√	□	1	#	√	□	√	□	2.5	#	√	♀	√	□	2.5	□	♀	♀	√	□	1	0.51
16.	Accessible rest room	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	0
17.	Accessibility symbol	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	0
18.	Lavatory rim (34 inch)	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	0
19.	Soap and dispensers within reach	♀	□	♀	♀	√	1	♀	♀	♀	♀	□	0	♀	√	♀	♀	□	1	♀	√	♀	♀	□	1	♀	♀	♀	♀	□	0	0.33
20.	Mirror (40inch)	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	♀	♀	♀	♀	□	0	0
	Expected total	15	10	15	7	15		15	-	-	7	15		15	10	15	7	15		15	10	-	7	15		15	-	-	7	15		
	Actual total	4.5	5	4	2	4		8	-	-	4.5	4		8.5	6	3	4	7		4.5	6	-	2	4		8	-	-	4.5	4		
	Universal access	1	1	1	1	1	5	1	-	-	1	1	3	1	1	1	1	1	5	1	1	-	1	1	4	1	-	-	1	1	3	
	Extent of universal access	0.3	0.5	0.3	0.3	0.3	1.7	0.5	0	0	0.6	0.3	1.4	0.6	0.6	0.2	0.6	0.5	2.2	0.3	0.6	0	0.3	0.3	1.3	0.5	0	0	0.6	0.3	1.4	
	General accessibility of sch	0.3						0.5						0.4						0.3						0.5						
	Average of extent for accessibility in academic infrastructure in Accra											0.38																				

Source: Adapted from Ewool (2013) Msc Thesis

Key

CR = Classroom

CP = School compound

CN = Canteen

LB = Library

WR = Washrooms

ST = Sub-total

∅ = Absent in the facility (0)

√ = Present in the facility (1)

= Not present in all the facility (0.5)

♀ = Not applicable (-)



Appendix 3: Survey Instruments

DEPARTMENT OF PLANNING

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

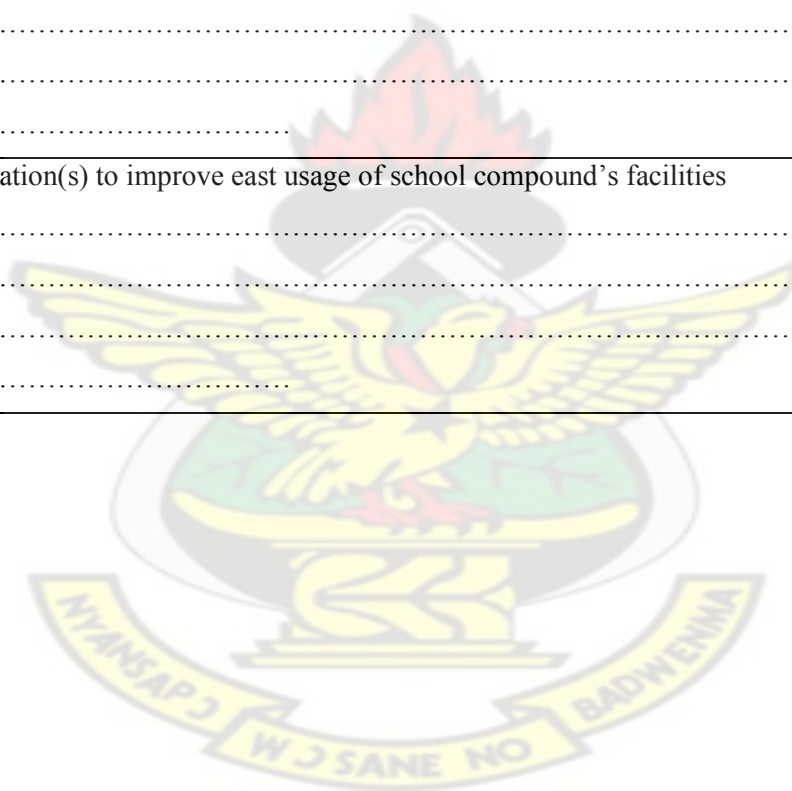
QUESTIONNAIRE FOR PWDs

A	PERSONAL INFORMATION		
1.	Name		
2.	Age	3. Sex	a. Male1 b. Female.....2
3.	Class:		
4.	Place of origin to School	a. Within Community.....1 b. Outside Community.....2 Please indicate the town if you come from outside the community to school.....	
5.	How do you commute to school	a. walking.....1 b. taxi2 c. trotro3 d. private car4 Others.....5	
6.	State reason for mode of transport		
7.	What type of disability do you have?		
8.	What mobility aid do you use?	a. Cane.....1 b. Crutches2 c. canes, crutches and forearm crutch combination.....3 d. walkers4 e. walker hybrid.....5 f. wheel chairs and scooters.....6 g. stair lift.....7 h. Others, specify8	
9.	How did you acquire the disability?	a. from birth1 b. acquired later in life through accident.....2 c. acquired later through disease(s).....3 d. Others, specify.....4	
10.	Apart from the mobility aid, do you depend on other people to move about in school?	a. YES.....1 b. NO.....2	

B	THE USE OF ACADEMIC FACILITIES				
11.	What is the nature of buildings at your school?	a. Storey building1 b. One storey.....2 c. Semi- detached.....3 d. Others, specify4			
12.	How long have you used the facilities in your school?	 weeks/months/years			
13.	Are there provisions for easy usage of the academic facilities?	Facilities	YES	NO	State the feature(s)
		Classroom(s)			
		Wash room(s)			
		Library			
		Canteen			
		School Compound			
14.	What barriers limit easy usage of the following academic facilities? Tick as many responses that apply to your case i. Classroom	Structural barriers		YES	NO
		a. Absence of rumps			
		b. High and steep stair cases			
		c. Narrow entrances			
		d. Small floor area			
		e. Obstacles in pathways and floors			
		f. Absence of parking for wheel chair			
		g. High blackboards and notices			
		h. Absence of handrails			
		ii. Library	Structural barriers		YES
a. Absence of rumps					
b. High and steep stair cases					
c. Narrow entrances					
d. Small floor area					
e. Obstacles in pathways and floors					
f. Absence of parking for wheel chair					
	g. High book shelves				
	h. High computer desks				
	i. Small floor spaces at computer labs.				
	j. Absence of handrails				

-	iii. Canteen	Structural barriers	YES	NO
		a. Absence of rumps		
		b. High and steep stair cases		
		c. Narrow entrances		
		d. Small floor area		
		e. Obstacles in pathways and floors		
		f. Absence of parking for wheel chair		
		g. Open drains		
		h. Absence of handrails		
		i. Smooth (slippery) floor surfaces		
	iv. Washroom	Structural barriers	YES	NO
		a. Absence of rumps		
		b. High and steep stair cases		
		c. Narrow entrances		
		d. Small floor area		
		e. Obstacles in pathways and floors		
		f. Absence of parking for wheel chair		
		g. High toilet seat bowls		
		h. Slippery floors		
		i. Absence of handrails		
		j. High hand washing bowls		
	v. School Compound	Structural barriers	YES	NO
		a. Absence of rumps		
		b. High and steep stair cases		
		c. No provisions for sports		
		d. Slippery floors		
		e. Obstacles in pathways and floors		
		f. Absence of parking for wheel chair		
		g. Open drains		
		h. Absence of handrails		
15.	Are the facilities easy to use?	a. YES b. NO		
16.	Recommendation(s) to improve easy usage of classroom(s).			

17.	Recommendation(s) to improve east usage of library facilities
18.	Recommendation(s) to improve east usage of washroom facilities
19	Recommendation(s) to improve east usage of canteen facilities
20	Recommendation(s) to improve east usage of school compound's facilities



DEPARTMENT OF PLANNING

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

QUESTIONNAIRE FOR HEADS OF DEPARTMENTS

1. What structural barriers limit people with mobility impairments from accessing educational facilities in Accra Metropolitan Assembly?

.....

2. Does the Assembly give recognition to the accessibility needs of people with mobility impairments in educational infrastructure provision in Accra?

a. YES

b. NO

3. What design principles are incorporated in providing educational infrastructure in Accra to provide accessibility for all groups of people?

.....

.....

4. Have provisions already been made for students with mobility impairments to equally access infrastructure in the Assembly?

A. YES

B. NO

5. If YES, what have been done so far in the following areas?

No.	Educational infrastructure	Accessibility aids provided in schools	Examples of such facilities in schools	Indicate whether they are alterations or were included in plan building plan before construction
1	Classrooms			
2	Library			
3	Canteen			
4	Washroom			
5	School Compound			

6. Are alterations on buildings to make them accessible for all people especially mobility impaired expensive or within the Assembly's means?

.....

7. Give reasons for answer

.....

8. What structural barriers are likely to obstruct access of the mobility impaired in basic schools?

.....

9. What challenges impede design of infrastructure which is accessible to all groups of people especially the mobility impaired in basic school?

.....

.....

10. What is the way forward of the Assembly in ensuring universal access to basic education?

.....

.....

11. What recommendations can you give to promote universal design and access to basic schools in Accra?

.....

.....

.....

DEPARTMENT OF PLANNING
KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

QUESTIONNAIRE FOR RESOURCE TEACHERS

1. How long have you worked in your circuit?

.....

2. What is the nature of buildings at your circuit?

a. Storey building1

b. One storey.....2

c. Semi- detached.....3

d. Others, specify4

3. What assistance do you provide for the mobility impaired?

.....

.....

4. Does the Assembly give recognition to the accessibility needs of people with mobility impairments in educational infrastructure provision in your circuit?

a. YES

b. NO

5. Give reasons for answer

.....

.....

.....

6. Have provisions already been made for students with mobility impairments to equally access infrastructure in your circuit?

A. YES

B. NO

7. If YES, what have been done so far in the following areas?

No.	Educational infrastructure	Accessibility aids provided in schools	Examples of such facilities in schools	Indicate whether they are alterations or were included in plan building plan before construction
1	Classrooms			
2	Library			
3	Canteen			
4	Washroom			
5	School Compound			

8. What structural barriers are likely to obstruct access of the mobility impaired in basic schools?

FACILITIES	STRUCTURAL BARRIERS
Classrooms	
Library	
Canteen	
Washroom	
School Compound	
Others	

9. What challenges impede design of infrastructure which is accessible to all groups of people especially the mobility impaired in basic school?

.....

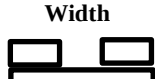
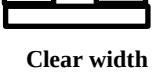
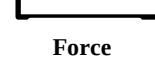
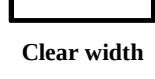
10. What recommendations will improve easy usage of the facilities?

FACILITIES	RECOMMENDATION
Classrooms	
Library	
Canteen	
Washroom	
School Compound	
Others	

CHECK LIST FOR EXISTING EDUCATIONAL FACILITIES

	QUESTIONS	ANSWER YES NO
1.	Accessibility Approach/Entrance People with disabilities should be able to approach the building, and enter as freely as everyone else a. Route of Travel: i. Is there a route of travel that does not require the use of stairs? ii. Is the route of travel stable, firm and slip-resistant? iii. Is the route at least 36 inches wide? (Measure) b. Ramps: i. Are the slopes of ramps no greater than 1:12? (Measure) ii. Do all ramps longer than 6 feet have railings on both sides? iii. Are railings sturdy, and between 34 and 38 inches high? (Measure) iv. Is the width between railings or curbs at least 36 inches? (Measure) v. Are ramps non-slip? vi. Is there a 5-foot-long level landing at every 30-foot horizontal length of ramp, at the top and bottom of ramps and at switchbacks? (Measure) vii. Does the ramp rise no more than 30 inches between landings? (Measure) c. Entrance i. If there are stairs at the main entrance, is there also a ramp or lift, or is there an alternative accessible entrance? ii. Do all inaccessible entrances have signs indicating the location of the nearest accessible entrance? iii. Can the alternate accessible entrance be used independently? iv. Does the entrance door have at least 32 inches clear opening (for a double door, at least one 32-inch leaf)? (Measure) v. Do stairs have continuous rails on both sides, with extensions beyond the top and bottom stairs?	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Width ☐ ☐ ☐ ☐ Slope ☐ ☐ ☐ ☐ ☐ ☐ Height ☐ ☐ ☐ ☐ Width ☐ ☐ ☐ ☐ ☐ ☐ Length ☐ ☐ ☐ ☐ Rise ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Clear opening

	QUESTIONS	ANSWER YES NO
	Entrance, continued	
	vi. Is there at least 18 inches of clear wall space on the pull side of the door, next to the handle? (Measure) vii. Is the door handle no higher than 48 inches and operable with a closed fist? (Measure) viii. Can doors be opened without too much force? ix. If the door has a closer, does it take at least 3 seconds to close? (Measure) x. Are door handles 48 inches high or less and operable with a closed fist? (Measure)	☐ ☐ Clear space ☐ ☐ Height ☐ ☐ Seconds ☐ ☐ Height
2.	Access to Goods and Services Ideally, the layout of the building should allow people with disabilities to obtain materials or services without assistance a. Horizontal Circulation i. Are all public spaces on an accessible route of travel? ii. Is the accessible route to all public spaces at least 36 inches wide? (Measure) iii. Is there a 5-foot circle or a T-shaped space for a person using a wheelchair to reverse direction? (Measure) b. Vertical Circulation i. Are there ramps, lifts, or elevators to all public levels? ii. On each level, if there are stairs between the entrance and/or elevator and essential public areas, is there an accessible alternate route?	☐ ☐ Width ☐ ☐ Width ☐ ☐

	QUESTIONS	ANSWER YES NO
	c. Seats, Tables, and Counters i. Are the aisles between fixed seating (other than assembly area seating) at least 36 inches wide? (Measure) ii. Are the spaces for wheelchair seating distributed throughout? iii. Are the tops of tables or counters between 28 and 34 inches high? (Measure) iv. Are knee spaces at accessible tables at least 27 inches high, 30 inches wide, and 19 inches deep? (Measure)	 Width  Width  Width
3.	Rest Rooms When rest rooms are open to the public, they should be accessible to people with disabilities. a. Doorways and Passages i. If rest rooms are available to the public, is at least one rest room (either one for each sex, or unisex) fully accessible? ii. Are there signs at inaccessible rest rooms that give directions to accessible ones? iv. Is the doorway at least 32 inches clear? (Measure) v. Are doors equipped with accessible handles (operable with a closed fist), 48 inches high or less? (Measure) vi. Can doors be opened easily (5 lbf maximum force)? (Measure) vii. Does the entry configuration provide adequate manoeuvring space for a person using a wheelchair? (Measure) viii. Is there a 36-inch-wide path to all fixtures? (Measure)	 Clear width  Height  Force  Clear width  Width

	QUESTIONS	ANSWER YES NO
	b. Lavatories i. Does one lavatory have a 30-inch-wide by 48-inch-deep clear space in front? A maximum of 19 inches of the required depth may be under the lavatory (Measure) ii. Is the lavatory rim no higher than 34 inches? (Measure) iii. Is there at least 29 inches from the floor to the bottom of the lavatory apron (excluding pipes)? (Measure) v. Can the faucet be operated with one closed fist? vi. Are soap and other dispensers and hand dryers within reach and usable with one closed fist? vii. Is the mirror mounted with the bottom edge of the reflecting surface 40 inches high or lower? (Measure)	Clear space Height Height Width