ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
COLLEGE OF EDUCATION AND BEHAVIORAL STUDIES
DEPARTMENT OF SPECIAL NEEDS EDUCATION

Educational Experience of Students with Disabilities in Higher Education Institutions in Ethiopia

Asmerom Tekle

September, 2019
Addis Ababa

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This dissertation is submitted to the Department of Special Needs Education in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Special Needs Education

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A Doctoral Dissertation

by

Asmerom Tekle

Approved by the Board of Examiners

Chairman, Dep. Graduate Committee	Signature	Date
Advisor	Signature	Date
Examiner (Internal)	Signature	Date
Examiner (External)	Signature	Date

Declaration

I, Asmerom Tekle Hagos, hereby declare that this dissertation entitled *"Educational Experience of Students with Disabilities in Higher Education Institutions in Ethiopia"* is the output of my original research work towards the partial requirement of the degree of Doctor of Philosophy in Special Needs Education. This dissertation has not been submitted by the researcher for the award of any degree to any other higher learning institutions and all the materials here are used with due acknowledgment.

Name: Asmerom Tekle Hagos

Signature: _____

Date of submission: September, 2019

Certificate

I, Dr. R. Sreevalsa Kumar, hereby certify that the dissertation entitled *"Educational Experience of Students with disabilities in Higher Education Institutions in Ethiopia"* is an original work carried out by Asmerom Tekle Hagos towards the partial requirement of the degree of Doctor of Philosophy in Special Needs Education under my supervision. The dissertation has been submitted for final evaluation to the University with my approval.

Name: Dr. R. S. Kumar (Associate Professor)

Signature: _____

Date: _____

Acknowledgement

My utmost and cordial gratitude goes to Dr. R. Sreevalsa Kumar, my advisor, for his unreserved, continual supervision and guidance in the course of this dissertation work. The comments, feedbacks and time he spent on me has been instrumental not only in completing this dissertation but also in my future teaching and research endeavors. I like to say thank you for your eminent support.

I would like to say thanks for the Department of Special Needs Education, AAU and all instructors, the heads, experts and staff of the Special Needs Support Offices/Disability Resource Center in AAU, Hawassa and Haramaya Universities for their support in many ways. My special thanks also go to Laureate Professor Tirussew Teferra, Dr. Daniel Desta, Dr. Seleshi Zeleke, and Dr. Fantahun Admas for their time and expert validation of the data collection instrument.

I sincerely thank data collection assistants and participant students who made this dissertation work possible. I thank you for your kindhearted participation.

I would like also to express my gratitude to my mother, W/ro Abeba G/Meskel, my brothers and the whole family for their encouragement and support. It would have been impossible to reach to this point without your support. I thank you all in the name of God.

My beloved wife, Mrs. Meheret Mersha, I would have not started and completed this PhD program if you did not encourage and support me with all your heart, and taking care of our two beautiful kids, Josi and Konjeye. I have no words how to thank you for your patience and all the sacrifices you have made throughout the program. Your family also deserves special thanks for the care and support they extended to my family during my absence from home. I say, may God bless you all.

I am also grateful for my friends, colleagues, and classmates to their consistent encouragement and friendship.

Thank you all.

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Abbreviations

ACPF	African Child Policy Forum
AE	Academic Environment Experience
CGPA	Cumulative Grade Point Average
CRPD	Convention on the Rights of Persons with Disabilities
DDA	Disability Discrimination Act
DRCs	Disability Resource Centers
DV	Dependent Variable
ESDP	Education Sector Development Program
FBE	Faculty of Business and Economics
FDRE	Federal Democratic Republic of Ethiopia
GPAs	Grade Point Averages
GTP	Growth and Transformation Plan
HE	Higher Education
HEIs	Higher Education Institutions
HI	Students with Hearing Impairment
ICF	International Classification of Functioning, Disability and Health
MoE	Ministry of Education
MOLSA	Ministry of Labour and Social Affair
N	Number of Total Samples
OECD	Organization for Economic Cooperation and Development
PE	Physical Environment Experience
PI	Students with Physical Impairment
POE	Policy Environment Experience
SD	Standard Deviation
SE	Social Environment Experience
SEN	Special Educational Needs
SNSO	Special Needs Support Office
SSEN	Students with Special Educational Needs
TVET	Technical and Vocational Education and Training
UK	United Kingdom

UNESCO	United Nations Education, Science and Culture Organization
USA	United States of America
VI	Students with Visual Impairment
WHO	World Health Organization

Abstract

This study examined the experiences of students with disabilities in selected public higher education institutions of Ethiopia. More specifically, the aim of the study was to investigate the experiences of the students in the academic, social, physical and policy environments of higher education. To achieve its objectives, a sequential explanatory mixed method design was used. In the first phase, quantitative data were obtained using self-administered questionnaire from 231 randomly selected sample participants. Descriptive statistics, Pearson Product Moment correlation and MANOVA were employed as methods of data analysis. In the second phase, qualitative data were generated using face-to-face interview with purposefully selected sample of 18 students with disabilities and 3 key informants and analyzed thematically with the aim to explain the quantitative findings. In general, the results of the study revealed that the overall experiences of participants in the four dimensions of higher education environments were undesirable. This undesirable experiences tended to result from absence, inadequate and delay in receiving support, teaching learning and assessment practices that did not respond to the needs of students with disabilities. Inaccessible physical environment, absence of disability related inclusive policy at institutional level was additional barriers to the educational environment. Moreover, the underlying negative attitude of faculty, administrative staff and students without disabilities were perceived as a major factor for the undesirable experiences. The finding of this study also showed that there was a statistically significant positive correlation among the four dimensions of higher education environments. Regarding the relationship between the four experience dimensions and background variables, the MANOVA result showed that there were statistical significant mean score differences between groups of university on the combined experience dimensions. On the other hand, there was no statistically significant mean score difference among groups of year level on the four experience dimensions. There were statistically significant mean score difference between male and female participants on academic experience dimension and among groups of disability types on the physical environment experience dimension. Finally, this study recommended the development of disability policy at institutional level and transformation of cultures and practices embedded within the social model of disability.

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

Historically, peoples with disabilities have been excluded from the mainstream environment and denied the access to education in general and opportunities to pursue higher education in particular. However, today it is becoming a global reality that national educational policies, plans and programs are designed based on the principles of inclusive education. The human right and disability right instruments since the Universal Declaration of Human Rights (1948) and a subsequent paradigm shift in conceptualizing disability as a social and environmental problem are considered as fundamental steps which resulted in the emergence of the inclusive policies and practices.

Indeed, studies across the world witnessed an increased access and participation of students with disabilities in higher education (e.g. Konur, 2006; Garrison-Wade, 2012; Al-Hmouz, 2014). Moreover, in response to the anti-discrimination laws and policies, higher learning institutions have worked towards addressing the critical issues of physical access, curriculum delivery, assessment procedures and ensuring that students receive the appropriate accommodations they need to have equal access to postsecondary environments (Shevlin, Kenny & Mcneela, 2004; Pingry O'Neill, Markward & French, 2012). Many Universities in a significant number of countries have also established disability support offices, incorporated new technologies and inclusive practices (Moriña, 2017).

Despite such positive efforts and outcomes, however, full inclusion of students with disabilities in higher education is yet to come in many parts of the world. When compared with students without disabilities, the representation, participation and completion rate of

students with disabilities in higher education is very low. For example, students with disabilities constituted only 8-14% of the total student population in post-secondary institutions of US and Great Britain (Sachs & Schreuer, 2011). Sniatecki, Perry, and Snel (2015) on their study reported that 11.3% and 10.9% of undergraduate students were identified as having a disability during the 2003-2004 and 2007-2008 academic years respectively in US. Another study conducted in US by Herbert et al. (2014) indicated that the current estimate reached 26%. An average estimate of 10% of enrolment was reported in Europe (European Agency for Development in Special Needs Education, 2006). Although the increase in enrolment of these students into higher education is a global phenomenon, it seems that they are not equally represented and the rate of growth does not demonstrate inclusion.

In addition to under representation, students with disabilities fail to complete their studies and subjected to withdrawal and drop out more than students without disabilities (Thompson-Ebanks, 2012; OECD, 2011; Jacklin et al., 2007; Hall & Tinklin, 1998). The completion rate of a bachelor's degree for students with disabilities is less by half than that of students without disabilities (Summers, White, Zhang, & Gordon, 2014; Sniatecki, et al., 2015). For example, a data from the study of Erickson et al. (2012) cited by Summers et al. (2014) reported that while the graduation rate for students without disabilities was 30.9%, it was only 12.2% for persons with disabilities. Sniatecki et al. (2015) further argue that even if the rate of graduation is equal, the time to complete their studies is longer for students with disabilities.

Examination of studies on the experiences of students with disabilities in higher education, as a whole, indicates that environmental factors often influence the students' equal

participation and successful academic and social integration (e.g. Stodden et al., 2001; Shevlin et al., 2004; Healey et al., 2006; Mutanga, 2017; Moriña, 2017). According to WHO (2011), "Environments-physical, social and attitudinal- can either disable people with impairments or foster their participation and inclusion" (p: 169). In fact, environmental factors are now acknowledged to impact students' success in their learning as much as barriers related to the student's disability (Pingry O'Neill, Markward & French, 2012).As noted in the study of Jacklin, Robinson, O'Meara, & Harris (2007), however, the negative educational experience related to impermanent also tended to result from the absence of, or delay in provision of support.

The students' positive classroom experience and grade performance is also influenced by the level of comfort and satisfaction they have with the academic environment (Graham-Smith & Lafayette, 2004). On the other hand, absence of reasonable accommodation, lack of instructional materials and service provisions, and shortage of assistive devices can affect the academic experience of students with disabilities (Tirussew et al., 2014).

Social integration in community is important for an individual's holistic well-being, decreased alienation and increased affiliation (Christensen, 2010) and is related to persistence and success in university (Almog, 2011; Devine, 2013).The attitude of the campus community particularly of faculty members, awareness of the needs of these students and their knowledge of the available reasonable accommodations and provision are highly related to the student's success or failure in higher education and can have profound effect on the social and educational integration into the college community and student success (Fichten, 1988; Rao, 2004; Reed & Curtis, 2012; Tirussew et al., 2014; Sniatecki, Perry & Snell, 2015; Moriña, 2017).

The experiences of SWDs studying higher education can also be significantly influenced by the extent to which their campus' physical environment is accessible to them. Inaccessible physical environments restrict the participation of students with disabilities and create disability by creating barriers to participation and inclusion (WHO, 2011). Despite the existence of accessibility legislations and universal design principles, access to the physical environment has been reported as yet another barrier that students with disabilities face in higher education, which greatly affects their equal participation in social and academic life (Mutanga, 2017; Klinger, 2014; Garison-Wade, 2012; Morely & Croft, 2011; Shevlin et al., 2004).

Developing inclusive policies and putting them in practice is crucial to students with disabilities to receive appropriate accommodations needed to be academically successful (Pingry O'Neill et al., 2012). European countries that participated in the study of European Agency for development in Special Needs Education (2006) also affirmed that general and higher education specific legislative steps have brought changes in support provisions and making learning environments more easily accessible to students with disabilities. In contrast, the lack of effectiveness of legislations on disability issues and discriminatory policies and practices are the most frequently raised environmental barriers that are greatly affecting the inclusion process and the students' experience in higher education setting (Matshedisho, 2010; Obiozor, Onu & Ugwoegbu, 2010; Mutanga, 2017).

As a result of these environmental barriers, therefore, the experiences of students with disabilities in higher education are not the same as their peers without disabilities. These students' paths are frequently difficult and success is obtained in expense of greater investment of effort and time (Moriña, 2017).

Despite an increase in enrollments in higher education in Africa (UNISCO, 2009), accessibility to higher education for persons with disabilities is still far in many of the nations (Kochung, 2011). The UNESCO study in universities of 11 English speaking countries in Africa in 1997 reported that students with disabilities represent only 1% of the total population. The study of Mumba (2009) cited by Morley and Croft (2011) reported a 3% of participation of students with disabilities in higher education in Zambia. Given the population growth and enrolment trend, it seems that access to higher education to the majority of students with disabilities in Africa is still very low. This is so because higher learning institutions in Africa are characterized either with poor or non-existent disability support facilities and services, lack of adequate funding, training facilities, resources and effective special needs curriculum which, on one hand, affect the enrollment, retention and graduation of skilled individuals with disabilities and, on the other hand, most scholars and instructors find it difficult to assist students with disabilities in attaining academic and social successes on campus (Obiozor, et al., 2010). Emong and Eron (2016) also indicated that although students with disabilities have the opportunity to attend public higher education mainly through affirmative action in Uganda, the right to education for SWDs is still suffering from discrimination, which leads to failure to achieve equal opportunities in higher education.

Similar to the global trend, the increasing trend of enrollment rate of students with disabilities into higher education in Ethiopia is also evident. The total number of students with disabilities who attended a regular undergraduate program rose, for example, from 136 and 177 which were reported in UNESCO studies of the 1997 and 1999 respectively to 1,395 in 2014/15 academic year (MoE, 2015). Despite the increasing trend, however, the data

indicate that the number of students with disabilities that are enrolling in higher education is very low, just a little more than 1000 students for over the last 20 years. Conversely, according to MoE (2016), the number of undergraduate students enrolled into public universities in the year 2014/15 was 368,314. However, students with disabilities constitute only 0.38% (1,395) of the total student population (MoE, 2015; 2016). Of the total 1,395, female students with disabilities constitute only 28.5% which indicates much less participation than males. Thus, the representation of students with disabilities is far behind than that of students without disabilities.

Furthermore, disability studies in Ethiopia indicated that the students who managed to access higher education with great difficulty experience a wide range of barriers that are associated with lack of awareness about disability, attitudinal and physical barriers, absence of disability policy statements and gap in communicating the existing policies and lack of reasonable modifications and accommodations in the classroom, inadequate support and qualified service providing personnel (Tirussew, 2006; 2014; Yared, 2008; Dawit, 2014; Katsui et al., 2014). These environmental barriers are hindering the student's effective academic and social integration and contributed for the continued exclusion.

Different studies underlined that the fundamental reasons for the continued marginalization of students with disabilities in higher education institutions are related to a historical legacy of exclusion of people with disabilities from mainstream education, stereotypes and attitudes (Swart & Greyling, 2011; Tirussew et al., 2014) and a failure to take disability issues as a structure of inequality in higher education that results differences in representation and participation of students with disabilities (Hanafin et al., 2007; OECD, 2011; Morley & Croft, 2011; Mutanga, 2017). In other words, according to Mutanga (2017),

the students are experiencing barriers because they are made to fit into unchanging education system that is against the basic principles of the social model of disability and the principles of inclusive education.

The major purpose of this study is, therefore, to investigate the experiences of students with disabilities in selected public higher education institutions of Ethiopia.

1.1.1. Higher Education and Disability in Ethiopia: Historical Overview

Ethiopia is one of the biggest and diverse countries in Africa with a long history and tradition. Currently the population reached over 95 million with more than 90 ethnic and linguistic groups (MoE, 2015). Education is as old as the country's history. According to Ayenachew (2015), "since the time of its ancient civilization, Ethiopia has had its own indigenous formal education which is strongly linked to the Ethiopian Orthodox church and had remained as the predominant form of producing the elites of the country for a long time" (p:1). The history of Higher Education in Ethiopia, in contrast, is rather very short. It began during the imperial government in 1950 with the establishment of university college of Addis Ababa which later become Hailesilassie - I university in 1960 (World Bank 2003; Yared, 2008; Ayenachew, 2015). The university college had only 1000 students (Ayenachew, 2015) and it only served a total of 4,500 students by the year 1970 out of a national population of 34 million with the enrollment ratio of 0.2% which was among the very lowest in the world (World Bank, 2003). After the collapse of the imperial government by the socialist military army in 1974, the university was renamed as Addis Ababa University. During the period of the military government (1974-1991), the number of universities grew to two with the addition of Haramaya University, the then Alemaya University (Ayenachew, 2015).

The development of higher education during the two successive governments was considered as slow by the international standards. For instance, the number of universities was very few and the gross enrollment ratio of students grew from 2% in 1970 to only 7% in 1995 (Ayenachew, 2015). In tandem with the low establishment and development of the higher education sector, it seemed that the issue of disability and students with disabilities in those periods was not both the government's and the higher education institution's agenda. Due to the deep rooted inequality of persons with disabilities, many of children and adults in Ethiopia have not been part of educational development programs (Katsui et al., 2014).

Inclusive education and efforts of including the issues of children with special educational needs in educational development programs in general and higher education in particular is a relatively recent development. According to MoE (2015), access to higher education for wider population has opened in the last two decades after the current government took power in 1991 and engaged in reform activities of the education system. The Education and Training Policy of the 1994 is considered by many as a foundation for the reform and successive education sector development programs and opening doors to education for students with special educational needs.

In order to realize the vision that the country set to become a middle-income country by 2025, currently the government is engaged in a highly ambitious effort to re-align its higher education system in order to contribute more directly to its national strategy for economic growth and poverty reduction (World Bank, 2003) in combination with other development sectors. In effect, the higher education system witnessed important developments and achievements. A significant number of teachers, teaching institutions and colleges, technical and vocational education and training institutions and private higher education institutions

have also been part of the expansion and development of higher education in the country (Yared, 2008). Due to this expansion and increased capacity, undergraduate enrollment, both in government and private higher education institutions also increased. The report from Education Statistics Annual Abstract of the 2015/16 indicated the trend of undergraduate enrolment (both private and public), that is, substantial increase over the last five years. The total enrolment increased from 494,110 in 2011/12 academic year to 778,766 in 2015/16.

Despite the progress seen in the sub-sector, higher education is criticized for the issues of access, quality and relevance of programs in general and providing equity and quality education for students with disabilities in particular. People with disabilities are the largest invisible minority group in Ethiopia (ILO, 2003 cited in Almaz, 2014). There are an estimated 15 million persons with disabilities living in Ethiopia (Katsui et al., 2014). Yared (2008) further pointed out that there are no reliable data available on inclusion or exclusion of disadvantaged groups in the education sector particularly of higher education. In addition to the absence of accurate data, the available statistics on the enrollment ratio of students with disabilities in higher education shows that their number is considerably low.

Besides, the type of impairments of students with disabilities mentioned on different studies and government documents are only limited to physical, visual and hearing impairments. This implies that the education system is marginalizing other SSEN either by denying access to education or failing to identify and accommodate the needs of diverse disability groups within the system. This is because identification of special educational needs is based on a defective method that relies on the observation by teachers of objectively visible disabilities rather than by diagnosis (Katsui et al., 2014). As a result of the absence of

diagnosis, Katsui et al. further indicated that "most children with multiple, severe, psychosocial and mental disabilities are left out of both schools and statistics (p: 42).

Study reports also indicated that there still remains a long way to go in opening access, widening participation and creating equal opportunities for success in higher education for students with disabilities. The main problem, according to Kundu et al. (2003), is the institutions' inability to recognize needs and deliver support services that meet the unique needs of students with disabilities. Apart from the issue of underrepresentation, the studies conducted on the situation of SWDs in Ethiopian higher education institutions reported that they are seriously challenged by a wide range of barriers which are basically originated from environmental factors such as barriers in academic (teaching learning, assessment and support services), social and attitudinal, physical and policy environments (UNESCO, 1997; 1999; Yared, 2008; Almaz, 2014; Tirussew et al., 2014; Katsui et al, 2014; Dawit, 2014).

1.2. Statement of the Problem

International legal instruments such as the Universal Declaration of Human Rights (1948), Convention against Discrimination in Education (UNESCO, 1960), and UN Convention on the Rights of PWDs (2006) declared education as a human right and prohibited any form of discrimination in education.

The FDRE constitution (1995) and education sector policy and strategies i.e., Education and Training Policy (1994), the Special Needs/Inclusive Education Strategies (2006; 2012) and higher education proclamation (2009) also recognized that education is a fundamental human right that should be accessible to all citizens irrespective of their differences. Hence, positive developments in terms of mainstreaming the issues of disability and special and inclusive education at all levels of the education system, increasing access to education for

PWDs, enrollment rate, attitude towards disability and inclusion, resources and materials, and inclusion of special needs education in teacher training programs have been achieved over the past two decades.

In spite of the developments noted, there is still a gap in the provision of access to those with special educational needs (MoE, 2012). Lack of access for these students is not only restricted to attending into educational settings but also absence of proper identification of special educational needs and appropriate support that meets the student's needs. Education Statistics Annual Abstract documents of the MoE indicated that the participation of students with special educational needs particularly students with disabilities at different levels of the education system is low. According to the data collected in 2014/15 academic year, for example, the gross enrollment of students was 18,691,217 and 2,108,115 for primary (grades 1-8) and secondary (grades 9-12) education respectively. The number of primary students with special educational needs in the same year was 72,110 i.e., only 0.39% of the total student population and 7,464 (0.35%) were in secondary education (MoE, 2016).

Despite the absence of clear data on the repetition and dropout rate of students with disabilities, the number of students with special educational needs eligible for higher education is partially constrained by the number who complete grade 12 (MoE, 2015). The figure, 0.38 % participation rate indicates that a small number of SWDs are pursuing higher education. Apart from their underrepresentation, Yared (2008) noted that the small number of students, who with great individual efforts, passed successfully through all the barriers in primary and secondary education, encounter new and more serious barriers in higher education.

The barriers in learning environment are widely attributed to many of the challenges students with disabilities encounter in higher education institutions. These barriers may range from problems of adjusting to a new environment that is quite different from home, primary and secondary schools to barriers that may include wider issues including teaching learning process, assessment and evaluation, student support systems, social interactions with members of the university community, access to the physical environment and enactment and implementation of inclusive policies.

Concerns about the experience of students with disabilities is becoming more prominent due to the absence of enabling environment and the existence of inequality in access (Jacklin et al., 2007) and it should be recognized and examined (Altbach, Reisberg, & Rumbley, 2009). However, most of disability and education studies in Ethiopia focused on primary education. The situation and experience of students with disabilities in secondary, TVET and higher education is hardly investigated. Hence, empirical studies on students with disabilities in higher education setting in Ethiopia are scant and the scope of the available studies is also limited.

For example, the studies conducted by UNESCO (1997; 1999) in more than 50 countries where Addis Ababa University was the only higher learning institutions that participated in both studies emphasized on assessing the provisions and resources available for SWDs. Yared (2008) also conducted a study on the state of policy and provisions in Ethiopian higher education institutions. Since the data in these studies were obtained from the leadership of the institutions investigated, the perspectives of students with disabilities on their actual experience was not reflected. Moreover, the interactions SWDs have with their learning environment and the influence of the environments on their educational experiences were not

investigated. On the other hand, Almaz (2014) studied attitude toward peoples with visible disabilities from the perspective of AAU students. A recent study conducted by Tirussew et al. (2014) on assessment of the situation of students with disabilities is more comprehensive than the previous studies. However, it focused on describing the general situation of educational accessibility of higher education institution for students with disabilities. Moreover, it lacked comparisons in experience between participants on the different experience dimensions.

Given the increasing participation of students with disabilities in higher education, inequalities existed and scant studies on the area, therefore, it is imperative to systematically investigate and understand the experiences of the students with disabilities in relation to their learning environment or experience dimensions i.e., academic, social, physical and policy environments from the students' perspective. Therefore, this study is more comprehensive by its nature and it fills the gap by addressing wider issues of the students' experience in their learning environment including academic environment i.e., classroom teaching learning process and participation, assessment and evaluations and the support services in their campus, social environment i.e., their experience in social life which examines their interaction with the university community including teachers, students and administrative staff. Their participation in extra-curricular activities was also investigated in this study including the factors for participation and non-participation in those activities. The students' experience in the physical and policy environments was another dimension of investigation in this study. Additionally, the relationship among the four experience dimensions and between the background characteristics of SWDs and experience dimensions was addressed. Hence, the study was guided by the following research questions.

1. What is the nature of experiences do students with disabilities in HEIs have in relation to academic, social, physical and policy environments?
2. Is there a statistically significant correlation between the four dimensions (i.e., academic, social, physical and policy) of environmental experiences of SWDs?
3. What is the relationship between demographic variables (gender, disability type, year level and University) and the experiences of students with disabilities in the four dimensions of higher education?
4. What disability support services are available and how support system is organized?

1.3. Objectives of the Study

1.3.1. General Objective

The general purpose of this research is to investigate the experiences of undergraduate students with disabilities studying in public higher education institutions in Ethiopia with respect to academic, social, physical and policy environments of higher education from the perspective of the students.

1.3.2. Specific Objectives

The specific objectives of this research are:

1) To investigate the nature of experiences of students with disabilities with respect to academic, social, physical and policy environment dimensions in HEIs.
2) To examine the correlation that exists among the students' experience in the four dimensions.
3) To assess whether there is a relationship between some selected demographic variables of participants and the experiences of students with disabilities in the four dimensions.

4) To examine how support services are organized and the accommodations and support services exist to students with disabilities in their higher education institutions.

1.4. Significance of the Study

This study is designed with the intention of voicing the current situation and experiences of students with disabilities studying in higher education institutions in Ethiopia. Therefore, on one hand, it gives an opportunity for the students to express their perspectives on their experiences. On the other hand, it creates an understanding about the unique learning experiences of students with disabilities in the four experience dimensions. Recognizing the nature of the students' experience is highly significant for higher learning institutions to ensure an inclusive and accessible university environment since the growing attendance of these diverse students is inevitable due to increasing enrollment of SSEN into schools and the current massification of higher education institutions in Ethiopia.

Importantly, it provides policy makers, education experts, curriculum designers, higher education institutions and all students a deeper understanding on the relationships between the learning environments i.e., the academic, social, physical and policy environments and the students with disabilities and the impact of these environments on the student's either desirable or undesirable academic and social integration. Such awareness could also lead to actions that ensure access not only to attend higher education such as through affirmative action but also program and curriculum access within the institutions. It also encourages higher education institutions to revisit the current status of support structures and programs for students with disabilities and transform the situations by reforming policies, practices and cultures that will address their special educational needs and allow them to progress academically and socially.

Realizing inclusive learning environment depends, more importantly, on the attitude, ability and knowledge of teachers to identify and respond to the special educational needs of students with disabilities. Therefore, this study informs teachers to see the existing gaps between their teaching learning and assessment practices and the needs of students with disabilities. Recognizing the actual difficulties that their students are facing is imperative to create a conductive classroom environment for students with disabilities. Hence, it also draws the attention of the institutions and education sector stakeholders to address issues of teacher training and staff development programs. The study also highlights the importance of collaboration of different divisions of higher education institutions to provide a multi-disciplinary support to the students and enhance the engagement of SWDs in various curricular and co-curricular activities so that the students can have a meaningful student experience.

Taking the increasing enrollment trend of SSEN into all levels of the education system and the manifold interactions between the students and the various elements of the learning environment into consideration, the situations and experiences of this student population should be studied from different perspectives. In doing so, this study also encourages other researchers to investigate the issue from different dimensions.

1.5. Scope of the Study

This study is aimed at exploring the experiences of students with disabilities who are studying in HEIs in Ethiopia. The experiences of students with disabilities in four areas of higher education environments i.e., academic, social, physical and policy environments were the focus of investigation.

The study subjects investigated were limited to undergraduate students with Hearing impairment, Visual impairment and Physical impairments. The study is also delimited to established public higher education institutions of Ethiopia as it is believed more number of students with disabilities enrolled in these institutions.

1.6. Operational Definition of Variables

Key terms and variables in the present study were operationally defined as follows:-

Higher Education: HE in Ethiopia includes education programs which are offered as undergraduate degree for three, four or more years and specialization degrees such as Masters and PhD programs. Hence, in this study, higher education institutions refer public Universities.

Public Higher Education Institutions: are universities which are financed and governed by the federal government of Ethiopia.

Students with Disabilities: refers to students with self-identified visual impairment (including low vision and Blind), hearing impairment (Deaf) and physical impairments (who have mobility problems and uses crutch and wheelchair for mobility) who were learning in Ethiopian public higher education institutions during 2016/17 academic year.

Experience: - is a complex term and difficult to define. In this study, however, experience is primarily framed within the concept of interaction or engagement of students with disabilities in the major environments of higher education institutions or Universities, mainly of academic, social, physical and policy environments, and also includes impinge of these environmental dimensions on the students' experience.

Academic environment experience (AE): refers to the SWD's experience in HEIs in relation to the teaching learning and assessment practices and provisions and supports

that facilitate the academic experiences. The AE sub-scale with 40 items measured this variable. A higher score on AE sub-scale mean a desirable (positive) experience and low scores mean that the experience of SWDs in the academic environment is undesirable.

Social environment experience (SE): - refers to the SWD's experience in HEIs in relation to social interactions that they have with their instructors, other students and members of the administrative staff. The SE sub-scale with 30 items measured this variable. A higher score on SE sub-scale mean a desirable experience and low scores mean that the experience of SWDs in the social environment is undesirable.

Physical environment experience (PE): refers to the SWD's experience in HEIs in relation to the accessibility of physical environments including the building and facilities. The PE sub-scale with 15 items measured this variable. A higher score on PE sub-scale mean a desirable experience and low scores mean that the experience of SWDs in the physical environment is undesirable.

Policy environment experiences (POE): - refers to the SWD's experience in HEIs in relation to policy environment and how these policies facilitate or hinder student's educational experience. The POE sub-scale with 9 items measured this variable. A higher score on POE sub-scale mean a desirable experience and low scores mean that the experience of SWDs in the policy environment is undesirable.

1.7. Theoretical Framework

Disability is a term that has been described as complex and a complicated construct which is continually subjected to different definitions and interpretations. Understandings and definitions of disability emanates from the way a given society views it and how people with disabilities are perceived in that particular society. Tirussew (2005) indicated that "the

state of persons with disabilities in social situations can be explained by the nature of the prevailing understanding of disability, in terms of conceptualization of its causes, nature and consequences" (p. 6).

Obviously defining disability has a clear and direct implication on how service providers, the education system in general and higher learning institutions in particular conceptualize disability and structure policy and provisions. This is highly important because, as Hanafin et al. (2007) pointed out that education, similar to other forms of social provisions for PWDs, is also shaped by popular perception and by provider's understanding of the target population and its needs.

The perceptions, beliefs and intervention responses of disability have also been shaped by different perspectives. In disability studies, these perspectives are used as theoretical models or approaches to define, conceptualize and understand disability and the experiences of persons with disabilities. Therefore, the major disability models that dominated disability studies and the specific disability model or theory that underpins this study is presented below.

1.7.1. The Charity/Religious Model of Disability

The charity model of disability is rooted in religious and cultural thoughts, beliefs and practices. In many cultures, disability is associated with sin, wrongdoings and shame. According to the model, disability is considered as a punishment of God for sin (s) committed by the person with a disability or his/her parents, which often leads to the exclusion of the entire family from social participation in their local communities. In the same way, disability in Ethiopia is viewed as a curse and/or is punishment from supernatural

power for doing sins and persons with disabilities are viewed as weak, hopeless, dependent and unable to learn and the subject of charity (Tirussew, 2005). Due to this belief parents of children with disabilities tend to hide their children at home, which deprive them a conductive environment that restricts the children's opportunity to learn and lead independent life (Tirussew, 2006). Visible disabilities in particular are viewed as limiting and peoples with such disability condition are believed to have little strength and unable to perform physical labor which in turn leads the society to consider them as burdens to their immediate families for not being able to contribute to the family's income (Almaz, 2014). Therefore, misconceptions about causes of disability coupled with the misunderstandings of the capabilities of persons with disabilities resulted in a generally negative attitude and stereotyped discernment towards PWDs (Tirussew, 2005).

In this model peoples with disabilities are characterized as victims of their disabilities who deserve to be pitied, in deficit and needing help, being dependent and helpless, objects of charity or welfare, having noting to give, but only to receive, being inherently poor (MOLSA, 2012; Matonya, 2016). This perception contributes to the continuation of negative stereotypes and misconceptions about disability (Retief & Letšosa, 2018) and the segregation, discrimination, and institutionalization of many people with disabilities (Matonya, 2016).

Mantoya (2016) further argued that there are two major problems with the model. These are primarily the model is used by people without disabilities for the purpose of categorizing and identifying disability and secondly the charity organizations are not run by people with disabilities. This model, therefore, emphasizes on disability rather than the person, causes low self-esteem to PWDs, benefits the charities more than the people they were helping. The

model assumes that the society has the responsibility to take care of persons with disabilities (MOLSA, 2016).

1.7.2. The Medical Model of Disability

The medical model is also alternatively referred as the individual model, biomedical model and/or personal tragedy model as it primarily regarded disability as a personal tragedy or problem for individuals with disabilities. The model was emerged with a significant advancement in the field of medical sciences and it views persons with disabilities as having medical problem that require medical solution (MOLSA, 2012; Retief & Letšosa, 2018). This medicalized approach that followed medical judgment of impairments influenced theorists' and practitioners' responses to PWDs (Almog, 2011). Hence, the model considers disability as a disease or defect that needs to be prevented and cured and persons with disabilities as patients.

Disability, in the view of the medical model, is a restriction or lack of ability to perform an activity in a 'normal' manner (Morely & Croft, 2011). This implies that, according to Matonya (2016), people with disabilities are in some way abnormal and making people with disabilities "normal" by correcting the problem through medical interventions and rehabilitation is, therefore, the main objective of a medical model. The model is highly criticized for ignoring the influence of the social and environmental factors, such as inaccessible buildings and negative attitudes of others on the experiences of persons with disabilities, which mediate the experience of disability (Matonya, 2016; Morely & Croft, 2011; Almog, 2011; Disability Management Services, 2011). In support of this argument, Hanafin, Shevlin, Kenny & Mc Neela (2007) found that higher learning institutions investigated were providing support following a medical model discourse and neglected the

impact of institutional practices that results an effect on academic practices, participation and success of students with disabilities.

Conceptualizing disability as a medical problem that rests within the individual that needs to be fixed medically is not only influenced the intervention practices and responses to PWDs but also affects individuals with disabilities themselves. According to Retief and Letšosa (2018), for example, this understanding of disability reinforces PWDs to believe that they are not comparable with their able-bodied counterparts. Considering their disability as a cause for functional limitation, unsatisfactory community participation and problems in their life are consequences of the underlying concept of the medical model. That is why, as argued by Matonya (2016), many PWDs are less likely to challenge their exclusion from mainstream society and more likely to perceive it as a normal way of living. In addition to exclusion, the belief that PWDs holds about disability as an unavoidable outcome of functional impairments of the body or mind is the major factor for their poverty (Alomg, 2011).

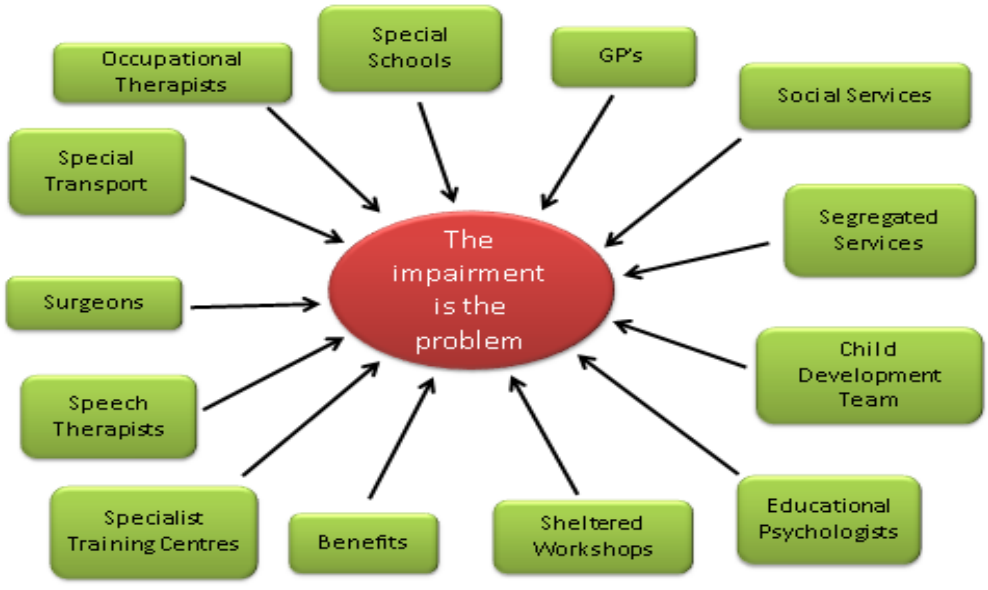

Fig. 1. A visual representation of the medical model of disability (www.ombudsman.org.uk)

1.7.3. The Social Model of Disability

The medical model of disability is being challenged and replaced with the evolving ideas of the social and human right models (MOLSA, 2012). These approaches 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. This is the essence of the social model of disability. Indeed, the conceptual shift to social model has also resulted in guiding the approach into creating conducive physical, social and policy environment that ensures the wellbeing of persons with disabilities (MOLSA, 2010). This means that the model reflects equity, equality and non-discrimination that are enshrined in various international human rights instruments.

Jacklin et al. (2007) argued that the social model has helped shape our understanding of the lived experiences of peoples with disabilities in contrary to what has previously been termed the medical, personal tragedy, deficit or individual model. Disability, based on the social model, is not an attribute of an individual, but rather a complex collection of conditions, many of which are created by the social environment. As stated in MOLSA's (2012) action plan document, the model sees the legal, physical, information, communication and attitudinal environment as barriers constructed by the society rather than resting the problem on the individual or the individual's impairment. These environments can either act as a facilitator or a barrier and influences one's functioning in a substantial way (WHO, 2013).

The experience of PWDs shows that the social and environmental barriers impoverish the full integration of individuals with disabilities into the society. The society creates the

problem by imposing "...restriction ranging from individual prejudice to institutional discrimination, from inaccessible public buildings to unusable transports system, from segregated education to excluding work arrangements..." (Oliver, 1996 cited in Yared, 2008:43). Universities as social institutions may generate barriers through their practices, attitudes and policies that hinder the inclusion of students with disabilities (Moriña, 2017).

For this reason, the management of the problem requires social action, and it is the collective responsibility of society at large to make the environmental modifications necessary for the full participation of persons with disabilities in all areas of social life. The alternative perspective informed by the social model of disability, would say that it is the environment that needs to change in order to tackle and remove barriers to students with disabilities, embrace disability as one of the diversities among human beings and realize equal participation (Riddell, Tinklin, & Wilson, 2005; MOLSA, 2012). In the context of education, the model entails the elimination of barriers created by society that prevent persons with differences from enjoying their rights to education on equal basis with others (Kochung, 2011).

Due to the ongoing change of student demography in today's universities, there is a need for moving towards inclusion. As Moriña (2017) underscored that it should be the university's responsibility to respond to the needs of all students through designing inclusive policies, strategies and practices that contribute to ensuring the success of all students. To promote inclusive provision within higher education, Fernie and Henning (2006) suggested that it requires a multi-level partnership between students, the academic teaching staff community, higher education administration, and the government.

In fact, in response to calls of international human right and disability right instruments, countries are making efforts to develop anti-discrimination laws in education to create access and include historically disadvantaged population into mainstream educational settings. Nevertheless, many studies reported that despite efforts of creating an inclusive higher education environment, the representation, participation and completion of students with disabilities is lower (Yared, 2008; Matshedisho, 2010; Sachs & Schreuer, 2011; Summers et al., 2014; Sniatecki, et al., 2015; Mutanga, 2017).

The continued use of a medical model discourse has influenced the way institutions respond to students with disabilities, particularly in terms of addressing their needs within the teaching-learning and assessment process. Indeed curriculum access i.e. adjustments in teaching learning and assessment is a barrier for students with disabilities (Disability Management Services, 2011). Hence, considering the problems of access, equal opportunities and medical model based practices, moving towards the principles of inclusive education, as Moriña (2017) suggested is still a challenge in higher education.

To ensure equal opportunities and facilitate the students' full inclusion, Moriña (2017) further suggested that higher learning institutions should avoid the use of medical labels to identify students with disabilities and incorporating the principles of inclusive education and universal design for learning into university policies and practices based on the social model of disability. Grace and Gravestock (2009) also suggested that it is useful to consider the social model of disability when studying barriers persons with disabilities experience in accessing social services including education. Unlike the medical model, a more social model of disability would address these environmental barriers in a more concerted manner (Disability Management Services, 2011).

Accordingly, different studies (e.g., Healey et al., 2006; Jacklin et al., 2007) on the experiences of students with disabilities in higher education established their framework within this model. The value of adopting this interpretation of disability, according to Yared (2008), is that it will help to identify the barriers that students with disabilities experience within their educational environment. He also used the model as guiding philosophy in his study for it establishes that everyone is equal and demonstrates that it is the society which erects barriers that restrict people with disabilities' participation and equal opportunities. Healey et al. (2006) on their part placed their research within the social model of disability to identify the barriers faced by students with disabilities. Jacklin et al. (2007) also took the social model of disability as their approach to study the experiences of SWDs in higher education and its effect on student's identity. The present study used the social model of disability as a guiding framework since it considers that disability, as Matonya (2016) noted, is a result of oppression, ranging from attitudinal to institutional discrimination.

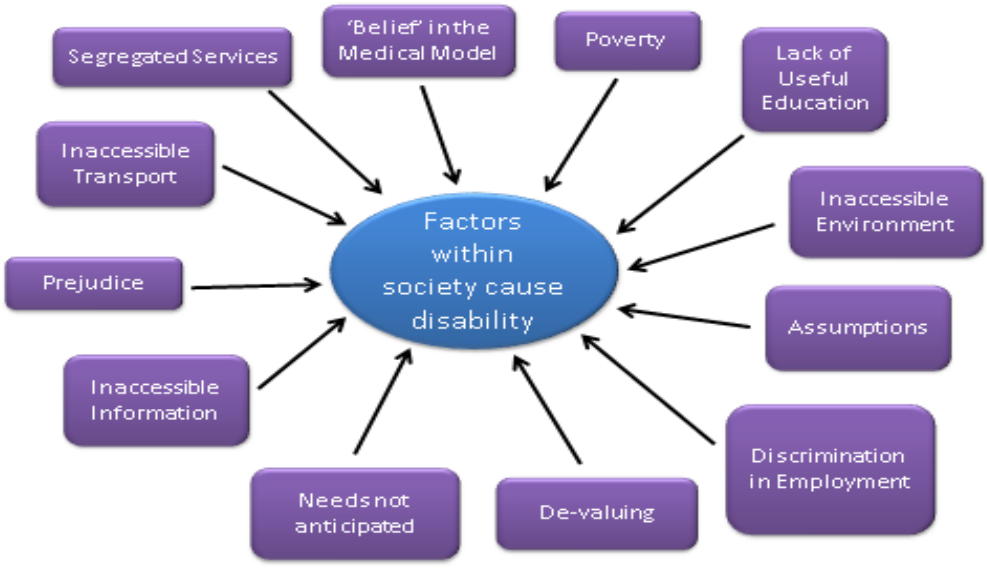

Fig. 2. A visual representation of the social model of disability (www.ombudsman.org.uk)

1.7.4. The Human Right Model of Disability

Disability is understood as a human right issue (WHO, 2011). Human rights are the fundamental, universal and indivisible principles by which every single human being can gain justice and equality. The model complements the social model of disability and considers that PWDs are equal to all citizens and entitled to equal access to services and opportunities without any kind of discrimination (MOLSA, 2012). It also places the individual at the center in all decisions affecting him/her and, most importantly, locates the main "problem" outside the person and in society. Hence, lack of responsiveness by the State and civil society to the difference that disability represents causes a problem.

The approach is being about leveling the playing field so that PWDs can access public services. It is also about the removal of physical and social barriers, and ensuring universal design, accessible technology, and coordinated public programs and services. The model suggests that the society and especially governments have the responsibility to promote and protect the right of PWDs through legislation and enforcement of anti-discrimination laws (MOLSA, 2012).

This study is designed to investigate the experiences of undergraduate SWDs with the assumption that environmental barriers –academic (teaching learning, assessment, and support systems), social and attitudinal, physical and policy environments within the institutions might impose restrictions to the full inclusion of SWDs. Therefore, the social model of disability is used as a guiding theoretical framework. Despite the discourse of social and human right models of disability, the researcher also believed that these wide ranges of environmental barriers exist because of the continued use of medical model in policy and practice of higher education institutions.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1. The Student Experience

Globally, higher education is becoming highly diverse with the increasing enrollment of the students who are traditionally referred as marginalized groups. This includes students of different nationalities, ages, cultures, socio-economic situations or capabilities (Morina, 2017). Persons with disabilities are among the diverse groups who are accessing higher education and increasingly becoming part of the student population. Article 1 of the CRPD defined PWDs as those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others (CRPD, 2006).

Students are considered as the core and primary stakeholders or the main consumers in higher education. Due to the incorporation of diverse student groups, participation in the university is broader (Morina, 2017) and the student's learning is affected by their broader experiences in higher education (Temple, Callender, Grove, & Kersh, 2014). Indeed, the changes that occur in the size, demographic makeup, needs, aspirations, expectations and developments of the student population, in turn, have affected the student experience of higher education (Altbach et al., 2009).

The term student experience has multiple meanings, and the list of what it might include is almost endless (Temple et al., 2014). The difficulty of defining the term student experience arises from the difference in understanding of what constitutes student experience among institutions and the needs of diverse students (Benckendorff, Ruhanen, & Scott, 2009). Although defining student experience is difficult, Benckendorff et al. (2009) asserted that it

is the responsibility of the universities to understand the needs and experiences of their own students because the student experience is closely linked with a range of outcomes, including student engagement, satisfaction, retention and employment outcomes. When universities respond to the needs of all students, it becomes an inclusive environment that fosters positive experience.

Unlike the traditional notion of student experience that focus on pedagogy, practices of teaching and learning, curriculum, assessment, currently the term is understood as the totality of student's interaction with the institution (Temple et al., 2014). This means in addition to teaching learning practices, the experiences of students can be influenced by institutional management decisions on operational matters and a range of institutional policies. Hence, total student experience refers to the engagement of students in all aspects of higher education life. It encompasses academic aspects, student lifestyle, extracurricular activities, academic advice, support and mentoring, work experiences and postgraduate expectations and the way universities respond to help students manage their external commitments (Benckendorff et al., 2009).

The influence of the growing student diversity in higher education and how the institutions are responding to this new situation is gaining attention in the research world (Morina, 2017). The learning environment of higher education can impact the student experience either negatively, which causes undesirable experience or positively that resulted stimulating and desirable experience. Studies also show that the participation of students with disabilities is not the same as students without disabilities. As one group of learners with special educational needs, students with disabilities experience barriers to learning and development (MOE, 2012). Therefore, it is imperative that higher education institutions

study and understand the lived experiences of their students with disabilities so that they can have a more positive student experience.

It can be noted from different studies, the major dimensions of student experience are related with engagement with academic activities (teaching-learning and assessment), social relationships, co-curricular activities and other university wide programs. For example, Ekelman, Bazyk, and Bazyk (2013) identified five types of activities that student engages in higher education. These are academic (e.g. going to class, studying), informal (e.g. socializing with friends, exercising), formal extracurricular (e.g. students clubs), work (e.g. part-time jobs) and university sponsored events (e.g. sport events). Similarly, Temple et al. (2014) studied the students experience in four dimensions. These are the application experience (covering the interactions between potential students and the institution, up to the point of arrival); the academic experience (students' interactions with the institution associated with their studies, excluding for these purposes teaching and learning processes); the campus experience (student social life, a good standard of accommodation, the organizational issues such as library and IT support, academic administration); and the graduate experience (the institution's role is assisting students' transition to employment). In their study, Borland and James (1999) assessed the experiences of SWDs within five specific areas of activity and provision: levels of student support and guidance; learning resources; teaching/learning and assessment; curriculum design; and quality assurance in each institution of higher education. But, the authors also believed that issues of finance, housing, transportation, personal care, peer support, and the use of aids and adaptations are other dimensions likely to be of particular concern to students with disabilities.

In this study the experiences of SWDs were assessed in four environmental dimensions of HE institutions. These are the academic environment experience (teaching-learning, assessment and support provisions), the social environment experience (relationships with faculty and administrative staff and students), the physical environment experience, and the policy environment experience.

2.2. Higher Education and Disability

The importance of higher education has been proved over the centuries in its ability to bring change and progress to individuals and the society at large. Higher learning and research led societies to become increasingly knowledge-based and are considered as an essential component of cultural, socio-economic and environmentally sustainable development of individuals, communities and nations (UNESCO, 1998).

The most obvious outcome of higher education is the attainment of high-level employment, improved vocational opportunities and the accompanying improvement in quality of life (Stodden et al., 2001; Klinger et al., 2014). In addition, Swail, Redd and Perna (2003), considered higher education as a public- health issue which has an enormous responsibility for society's well-being as it directly related to earning capacity, improving quality of human life and longevity.

Higher learning institutions operate as sites for the accumulation and distribution of social capital (Riddell, Tinklin & Wilson, 2005). The experience in these institutions not only prepares students to be active and participating members of their community but also provides them an opportunity to learn valuable skills and gain various life experiences such as leadership skills, living and working with people from different backgrounds, preparation for civic engagement, and building a pattern of healthy active living (Devine, 2013).

While the opportunity to peruse and complete higher education successfully is useful for all students, however, it is well documented in the literature that access to higher education is more important for empowerment for peoples with disabilities and widens their inclusion in the society by reducing the burden of prejudice and increasing chances of employment. Post secondary education gives them an opportunity to increase their knowledge, develop their social skills, obtain good qualifications and expose themselves to debate and discussion (Michail, 2010) and in gaining independence and social respect as for those without disabilities (Kundu et al., 2003).

Nevertheless, early history of education of persons with disabilities tells us that they were excluded from mainstream education and their educational needs were addressed in a separate or segregated school system. When policies and legislations that demand equal opportunities and participation in mainstream environment emerged, the situation started to change and children with disabilities began to attend the regular education system. However, these students are less likely to start school and have lower rates of staying and being promoted in school (WHO, 2011). This implies that the numbers of students with disabilities who are qualified to enter higher education are very small. For this reason, they have been negatively labeled by different terms as 'under-represented', 'marginalized', 'non-traditional', 'disadvantaged', or 'minority' groups.

Today the context of higher education worldwide is changing in many ways. Of the many, the emergence of diverse students including students with disabilities is becoming a central feature of the change. Educational settings in Africa are also challenged by this global education trends (Obiozor et al., 2010). Despite the little information available regarding the representation of students with disabilities in many countries in sub-Saharan Africa (Morley

& Croft, 2011), it is evident that the trend generally shows an increase in diversity. Similar to other countries in Africa, student diversity increases as one goes from kindergartens to higher education in Ethiopia (Abebaw & Tilahun, 2007) implying that these institutions are becoming highly diversified place of schooling.

2.2.1. Trends in Enrolment of SWDs into Higher Education

Disability studies are showing a trend of an increasing access and participation of students with disabilities in postsecondary educational settings all over the world (Konur, 2006; Jacklin et al., 2007; Altbach et al., 2009; Thompson-Ebanks, 2012; Kundu et al., 2003). According to Altbach et al. (2009), the percentage of the age cohort enrolled in tertiary education globally has grown from 19% in 2000 to 26% in 2007. Most studies done in US reported an average of 10-15% of participation of students with disabilities (e.g., Pingry O'Neill, Markward & French, 2012; Sniatecki, et al., 2015). Whereas Herbert et al. (2014) indicated a participation rate of 26%.

Despite growth in inclusive policies and anti-discrimination laws, students with disabilities continue to be excluded from and within higher education (Hutcheon & Wolbring, 2012; Sachs & Schreuer, 2011). For instance, in a survey conducted by National Center for Promotion of Employment for Disabled People [*sic*] (NCPEDP) in 2005 where 52 Indian universities participated, Jameel (2011) reported only about 0.1% of students with diverse disabilities were attending in those 52 universities. Shaw et al. (2009) also reported a finding from a longitudinal study conducted on high school students with disabilities and 76% of the participant students had aspired to attend postsecondary school or program. However, 2 years after high school, only 19% were attending postsecondary school. This is,

therefore, an indication of how these students are not able to reach the higher levels of education (Jameel, 2011).

Despite obtaining accurate data on the participation of students with disabilities in higher education, developing nations are far less than wealthy nations and it has rarely been representative of the society. Against to the increasing enrollment trend in higher education, social inequality is also an existing reality. In Africa, for example, although the call for revitalization of higher education in the UNESCO World Conference on Higher Education held in 2009 in Paris encouraged the enrollment rate of students with disabilities into these institutions (Morley & Croft, 2011), their participation is significantly low. Official government documents and studies conducted in Ethiopia also reported an enrolment of less than 1% of students with disabilities despite the expansion of higher education over the last two decades (UNESCO, 1997; 1999; Yared, 2008; Tirussew et al., 2014; MoE, 2015).

The historical legacy of exclusion is still evident not only in denial to access to but also access within the learning institutions. According to Gosling (2009) this legacy of denial to access and underrepresentation of students with disabilities in higher education is embedded in prejudice against students with disabilities and the ignorance associated with their capabilities. Hanafin, Shevlin, Kenny and Mc Neela (2007) reported the underrepresentation of SWDs in Irish higher education system is related to the consequences of attitudinal and environmental barriers that existed within and without the system.

2.2.2. Trends in Success and Completion of SWDs in Higher Education

Access to higher education is one important means to overcome the inequalities and disparities existed between students with disabilities and without. However, it is not only access to these learning institutions which ensures social equity but also students need to

complete their program of study successfully so that they enjoy the benefits out of their experience and contribute to the socio-economic development of their community (Altbach et al., 2009). Therefore, true progress depends on high levels of completion for all population groups. Hence, Adams and Holland (2006), suggested that significant improvements are still required to ensure that all peoples with disabilities to be able to benefit from a higher education experience and have equivalent opportunities to their peers.

Along with the issues of access, the success, completion and graduation of such SWDs from higher learning institutions is becoming a concern for all stakeholders in the education sector. Persistence and retention of SWDs is an issue that postsecondary education institutions should aspire to ensure through creating an inclusive learning environment for all students. In spite of increased access to higher education, significant access and retention barriers continue to plague students with disabilities (Garrison-Wade, 2012) and the completion rate for students with disabilities is found to be significantly lower when compared with students without disabilities. In the United States, Herbert et al. (2014) for example, indicated that the completion rate for students with disabilities was within the range of 21% to 34%, while it was 58% for students without disabilities. Similarly, Stodden et al. (2001) indicated that few of these students are progressing and completing their program of studies at a level and within the time period of their peers without disability. This means that the retention rate of higher education institutions among students with disabilities is lower globally (Yared, 2008).

From the findings of various literatures, Herbert et al. (2014), found that lack of appropriate disability specific support in higher education is considered as a major challenge that caused the difference in outcomes, persistence and completion between students with

and without disabilities. According to Herbert et al., some students with disabilities require a wide range support and services such as academic accommodations, services that enhance personal, social, self-advocacy and self-determination skills, financial, psychological and environmental supports in order to cope with demands of higher education. For this reason, a quality program of disability support needs to be in place for students with disabilities to address the gaps in persistence and completion cited in many studies (Moriña, 2017) and the education system needs to be pedagogically, physically, socially and psychologically accessible (OECD, 2011) to meet the diverse needs of SWDs. A quality university, as Moriña (2017) described, is an inclusive and responsible that responds to the needs of all students.

2.3. Experience of Students with Disabilities in Higher Education

Transition from high school to post-secondary educational institutions is considered as a big step in student's academic life as they are required to deal with a whole new range of experiences both in their academic and private lives as well. The beginning of a new life in a totally new environment, according to Abebaw and Tilahun (2007), makes it a critical stage of their development since it is a time during which they define themselves in relation to others and exercise different social roles. This means, that they have to organize their own life and do things without the support of their family and at the same time try to deal with the workload of their studies, keep up with colleagues and study for assignments, deadlines and exams (Michail, 2010).

Decrease in contact among teachers and students, increases in academic competition, changes in student support networks, and a greater expectation that students will achieve on their own are additional challenges that SWDs confront with postsecondary institutions

(Stodden et al., 2001; Adams & Holland, 2006). Moreover, they have to deal with the dual obstacle of academic demands combined with their disability where their privacy is lost and becomes a public issue in campus environments (Shevlin et al., 2004). Thus, it is a time to confront their disability and obliged to do all the things that students without disabilities do and they have to try even harder to overcome any barriers caused by their disabilities in order to succeed in higher education (Borland & James, 1999). This means that, it requires them to make an extra effort to manage their disabilities in a new environment (Jameel, 2011).

Participation of students with disability is not only being integrated in higher education setting but also participating in a wide range of activities like their non-disabled peers. This includes, according to Yared (2008),

> "…the possibility to ask questions, to discuss ideas with classmates, to have a critical conversation with professors about papers, to reflect up on readings, to explore the library, to have access to information in accessible format at the same time as their non-disabled classmates, to work on a research project, to have coffee with friends, to participate at campus social and cultural events, and really take part in the college experience having gained knowledge about, and insight into a wide variety of human experience and disciplines. Most critically it is about being able to do those things without the kind of hardship that go beyond that of the typical student during the postsecondary educational year" (p: 35).

However, many of these issues are more complex for students with disabilities due to lack of emotional and/or academic preparedness from primary and secondary schools to handle the rigorous workload in college (Yared, 2008; Garrison-Wade, 2012;Thompson-Ebanks, 2012).While this fact remains true, higher education institutions can play a

significant role to fill this gap and help students with disabilities to develop the required skills and improve their performance through various structured disability specific support systems so that they will have a better academic and social integration.

Indeed, research reports indicated that supportive climate and inclusive culture in these institutions play a significant role to easy adjustment and equal participation of students with disabilities and contribute to the richness of student experience. It is a factor that has a direct impact on the students' sense of either validation or marginalization in their institution (Riddell et al., 2005). Regardless of the importance of such educational environment, studies indicated that institutions of higher learning seem to struggle in retaining and supporting students with disabilities and other historically disadvantage group's learning right from admission, placement, accommodation and service provision (Moriña, 2017).

Reports from different studies indicated that parallel to an increase in attendance in higher education, dropout of these students before completing their studies is also evident. In line with this, Kundu et al. (2003) noted that while higher education institutions are expected to enhance their disability related support services in size and variety to meet the growing educational needs of students with disabilities, many of these institutions fails to do so. Pliner and Johnson (2004) claimed that the institutions' tendency to maintain the status quo while being resistant to make a shift in their culture, academic practices and organizational structures to accommodate the needs of students from minority groups is a key factor for the negative outcomes experienced by students with disabilities. Therefore higher education institutions are suggested to undergo a major cultural transformation that enables them to create an inclusive environment where the needs of diverse students are recognized, accepted and supported (Pliner & Johnson, 2004; Moriña, 2017). To bring transformation in culture

and practice, these institutions have been encouraged to broaden their selection processes, developed affirmative action programs to widen participation of people with disabilities that involves the institution addressing the critical issues of physical access, curriculum delivery and assessment procedures (Shevlin et al., 2004).

As a result of lack of inclusive culture, practice and policy, students with disabilities still continue to experience various obstacles that higher education institutions should overcome to increase their participation and representation. For example, a study conducted by Tinklin, Riddell and Wilson (2004) revealed that depending on their particular impairment, most of the students experienced barriers to accessing their education relating to the physical environment or teaching and learning (or both) at some point during their studies. Hutcheon and Wolbring (2012) also reviewed different literatures and indicated that students with disabilities face physical, social, and emotional barriers in their postsecondary education including lack of financial support, difficulty seeking accommodations, outright discrimination such as lack of access to and within built structures, faculty and peer awareness, participation in academic and strain on time resources.

In general, the barriers students with disabilities encounter in postsecondary settings can be categorized as architectural/access, programmatic, informational, and attitudinal (Garrison-Wade, 2012).All these barriers, according to Adams and Holland (2006), are underpinned by a society that, despite the introduction of anti-discrimination legislation in many countries, still does not fully embrace the inclusion of peoples with disabilities. Therefore, PWDs are forced to negotiate an environment which was not designed for them and deprived of equality of access (Jameel, 2011). These barriers in turn restrict the student's full participation in their learning environment and are problematic since the academic and

social experiences shape students' beliefs, self-concept, and identity and impact health and further opportunities of students with disabilities (Hutcheon & Wolbring, 2012).

2.3.1. Experiences in the Academic Environment

Academic experience of students with disabilities refers to their participation in teaching learning and assessment and adjustments in these curricular aspects. Curriculum access i.e., adjustments or reasonable accommodation in teaching and learning and assessment are fundamental issues that may enhance a positive academic experience of students with disabilities if designed and delivered in accordance with their specific needs. In this section, the experience of students with disabilities in these core elements of academic experience is presented.

2.3.1.1. Experiences in Teaching and Learning

Theories of teaching and learning are evolving. Fundamentally, it evolved from teacher-centered to student-centered approach. The student-centered approach gives prime emphasis on what students learn and engages students actively in the learning process (Altbach et al., 2009). Therefore, Altbach et al. suggested that institutions must be prepared to meet the needs of a wide range of nontraditional learners.

Students with disabilities, as one member of non-traditional learners, pose particular challenges to higher education institutions in relation to much wider access issues concerning the curriculum-teaching learning and assessment (Al-Hmouz, 2014). Since these are the basic components of academic experiences of students in an educational environment, their practice in an inclusive education framework plays a vital role in the enrollment and completion of these historically disadvantaged groups.

Students with various disabilities who participated in different studies that assessed their academic experiences in higher education reported a mixed feeling. Participants in the qualitative study of Kioko and Makoelle (2014) conducted at Winchester University in UK, for example, viewed their university and experience positively. The various support services including technological support and assistive technology trainings, provision of alternative tasks, access to the support of mentors, library support that enables students to access learning resources, note taking services, study skill and positive attitudes of teachers facilitated the positive learning experiences of students with disabilities. The study of Magogwa (2008) cited by Matshedisho (2010) also found out high level of academic success among deaf students due to the commitments of their university to deaf education and the provisions of appropriate services such as the availability of interpreting services.

On the other hand, the existing literatures largely indicated that students with disabilities experience more of barriers in higher education that adversely affect their academic integration and successful completion of their studies than enablers. From the results of three surveys conducted with the aim to identify and evaluate the experiences of students with disabilities in teaching learning and assessment, Healey et al. (2006) reported that students with disabilities experience barriers in mode of teaching particularly during lecture and independent field work. Moreover, attendance, note taking, participation confidence, concentration and taking longer time to complete tasks were the difficulties identified by the participant students in the three studies. Fuller et al. (2004) also found a similar result where the participant students reported that they encounter difficulties during lecture as their lecturers talked too quickly, or removed visual material such as overhead transparencies before the student had time to digest the contents.

Although students in general encounter barriers in their learning, their experience differs depending on their particular disabilities. Higher education students with visual impairment, for example, experience problems in relation to learning orientation and adjustment to the new place, creating a support network, absence of counseling services, lack of visual readers, teachers' ability and lack of willingness in accommodating their needs in the classroom, lack of learning materials in accessible format such as Braille printed books, lack of access to materials on time, difficulties with adaptive technology and group works, the problem of taking exams and transport were found to be the most important barriers (Al-Hmouz, 2014; Reed & Curtis, 2012; Almog, 2011). Challenges in relation to reading were found to be the major challenge for students with visual impairment in the study of Reed and Curtis (2012). For example, 53% of the students indicated that it takes them longer time to read learning materials than their sighted peers, 60% of the students (81% low vision and 47% blind) reported that they had eye strain and headache associated with reading, poor lighting and computer work. Physical access issues influence the everyday life of students with physical disabilities and seen as a pre-condition for choosing higher learning institutions (Shevlin et al. 2004). Limited access to equipments and lack of qualified sign language interpreters can hamper the learning of students who are deaf (Adams & Holland, 2006).

Another but frequently reported academic barrier students with disabilities encounter is lack of understanding and willingness of teachers to accommodate their needs in the classroom (Fuller et al., 2004; Garrison-Wade, 2012; Reed & Curtis, 2012; Kioko & Makoelle, 2014). For example, 43% of students with visual impairment participated in the study of Reed and Curtis felt that professors tend to forget to accommodate them as heavily rely on visual formats such as the use of PowerPoint. Lack of cooperation from some

lecturers such as unwillingness to allow their lecture to be tape-recorded, unrealistic expectations about the amount of new reading that students could reasonably manage during a taught session, or failing to provide user-friendly handouts were also reported as additional barriers in Fuller et al. (2004). An account of a female deaf student in the study of Kioke and Makoelle (2014) illustrated the extent of effect of teachers' instructional delivery methods used in their classroom on active and equal participation of students with disabilities. She reported that she missed out on some video clips played in the lecture until she requested the teacher to give her the transcripts of the clips.

Studies in Ethiopia also reported similar findings. Lack of awareness of faculty members and other staff about disability needs and support was a problem that affected not only academic experience but also many areas of student life (Yared, 2008). In his study of academic barriers of students with disabilities SWDs in Addis Ababa University, Dawit (2014) reported that teachers lack appropriate skill to handle the needs of SWDs and they were perceived as reluctant by the students to give them academic support such as provision of course materials, adjustments of assignments and field works based on their disability needs. Instead, students with disabilities get assistance from their peers and individual teachers who have good will than structurally organized form of support. Regarding accommodation problems these students encounter, the finding from Yared (2008) indicated that classroom support was almost absent in most institutions and only less than 5% of the teaching accommodations were accessible in 55% private and 60% of the public institutions.

Participants in the study of Garrison-Wade (2012) believed that this failure to accommodate the needs of students with disabilities is due to the negative attitudes embedded within the teachers. As a result the students tended to avoid classes of such

instructors even if the course was important to their majors. Teachers participated in the study of Kioko and Makoelle (2014) on their part attributed the problem to the lack of knowledge about a specific disability and required expert support on how to accommodate the student's needs in their planning of lectures.

Active participation in group work is also a challenge for students with disabilities in their academic experience. For example 27% of participant students with visual impairment in the study of Reeds and Curtis (2012) reported that their participation in group work was hampered by limited contribution especially when the task involves reading and other students being apprehensive about including them in groups.

Access to adaptive technology, computers, communication devices and other learning materials are essential inputs for positive learning outcomes of students with disabilities. They are highly instrumental for SWDs to access higher education, function in their environment, became successful in their education and improve their physical and intellectual capabilities (Stodden et al., 2001). Despite the importance of such devices to ease the life and learning of these students in the campus, access to them is difficult especially in developing nations. While most students participated in the study of Reeds and Curtis (2012) indicated that they are confident in using the technologies (i.e., software) available, some of them (16%) noted that they had some difficulties in gaining access to training on adaptive technologies or the technologies available in some campus locations, for example, only in disability center but not in library.

For students with disabilities, in general, a lack of curricula flexibility and a lack of inclusive teaching and learning methodologies remain important barriers within higher education that must be further interrogated (Disability Management Services, 2011). The

European Agency for Development in Special Needs Education (2006) underlined that there are also potential barriers to learning that are intrinsic to teaching and learning situations. These barriers are related to "the material being studied, the expected form of group/peer interaction, the methods expected for studying as well as used in teaching - all of these potentially present barriers for students with different types of SEN" (p:58).

2.3.1.2. Experiences in Assessment

Assessment is the most important integral part of classroom practice along with curriculum, teaching and learning (Cumming & Wyatt-Smith, 2009) and central to the provision of meaningful and productive learning experiences for all students (Keen & Arthur-Kelly, 2009).

In the past, attending university is regarded as a privilege for few students who are considered very bright and highly motivated (Altbach, Reisberg & Rumbley, 2009). Altbach et al. further explained that:

> "Assessment was usually norm-referenced to determine which students were the most effective at remembering and understanding what they had been taught, and students were graded accordingly. Poor results were attributed to student deficits such as lack of motivation or talent, rarely to poor teaching" (p: 112).

The major pitfall of such assessment methods is that it fails to take account of the differences exist among students and the way they learn. It also makes it difficult to identify the learning potential of these students who have traditionally been receiving limited opportunity and access to education (Keen & Arthur-Kelly, 2009).

However, such authors as Hanafin et al. (2007) and Gibbs (2006) believed that there is individual difference among students and, therefore, the students learn differently and have

different individual assessment preferences. Hence, assessment practices should be flexible to support learning of diverse groups of learners and take into account the need for individuals to make sense of feedback in the context of their own experience (Bryan & Clegg, 2006) and it should use different methods of showing their knowledge, understanding or skill of what they have learned (Hanafin et al., 2007). When assessment takes individual differences into account and provides alternative opportunities to students express what they learn, according to Gipps and Stobart (2009), it is equitable and fair.

Nevertheless, difference in access to learning or unfair assessment practices that favors one group over another are the major contributing factors for the difference in educational performance between students with and without disabilities (Gipps & Stobart, 2009). In support of this argument, Norton (2009) indicated that common understanding about assessment and assessment practices among the academics is lacking and they commonly use assessment to grade or rank student achievement. Norton also believed that established conceptualization of learning as passive and incremental which led to seeing assessment as measurement of student's performance (assessment of learning) rather than active and transformational which views assessment as a means to promote students learning (assessment for learning) has contributed to the failure of higher learning institutions and teachers to shift their practices towards inclusive assessment.

The modes and techniques of assessment used in higher education have both intended and unintended consequences which affect students differently and how they experience an assessment practice (Hanafin et al., 2007). The evidence in literature regarding the experiences of students with disabilities in relation to assessment in higher education setting is generally different from those without disabilities. While acknowledging that both groups

of students experience difficulties with assignments, teaching methods, and assessment modes, Healey et al. (2006), argue that the extent and nature of the difficulties would be more severe for the students with disabilities. The finding from Healey et al. (2006) also indicated that the barriers respondent SWDs faced in assessment and course work were rather more prevalent.

The use of limited assessment techniques, lack of modifications and accommodations in exams and inaccessible building during examination and assessments are the most frequently reported barriers that students with disabilities encounter in relation to assessment modes and accommodations. In the study of Fuller et al. (2004), students with disabilities reported that they experienced barriers in relation to written coursework, common form of assessment and assessment of oral presentations. In addition to the use of terminal, written, once-off, summative examination, the physical environment also caused access problems so intensely during assessment for students with disabilities (Hanafin et al., 2007).

Assessment is an area where students with disabilities experience severe challenges in higher education and the most overlooked and hardly investigated element of academic process in Ethiopia. In his study of the private and public higher learning institutions, Yared (2008) generally found that the accommodation services in examination for students with disabilities was negligible. Despite the presence of some modifications to examination procedures in the form of additional time and the use of facilitators in AAU and Bahir Dar University (BDU), participant students reported that alternative assessment options and accommodations in both universities were extremely limited. The available few services were also rendered for students with visual impairments and students with hearing and physical impairments were often excluded. In addition to course structure and delivery

methods, large number of students with disabilities in Dawit (2014) study reported that they encountered barriers related to assessment. 77.9% experienced difficulty with assignments and 64% of them reported problems during examinations.

The limited attention given to assessment in teacher preparation programs which in turn limits the knowledge that teachers hold about assessment matters (Cumming & Wyatt-Smith, 2009) may play its own role for the barriers students with disabilities encounter in assessment. As a consequence of these interrelated factors, according to Hanafin et al. (2007), there is still less understanding about the experiences of students with disabilities in relation to assessment and how assessment practices may discriminate against these students.

In fact, not all students with disabilities in higher education face challenges in assessment and accommodations. Some students with disabilities also reported positive experiences in relation to assessment. Hall and Tinklin (1998) found that participants in most institutions investigated felt happy as the institutions had procedures set up for granting alternative exam arrangements and other provisions such as extra time in exams which allows them to stretch, rest, read the questions a few times or use appropriate equipment, computers rather than handwriting and taking exams in separate rooms. The participants in the study of Kioko and Makoelle (2014) at Winchester University in the UK also reported high degree of satisfaction due to the provision of need based support and services from teachers and support staff in assessment.

Despite mixed research results, Hall and Healey (2004) emphasized that the problems relating to assessment appear to be a particularly serious area of concern for students with disabilities. What makes even more critical is that despite the advent of technology that facilitates learning and assessment and the evolving understanding of assessment as a means

for shaping, motivating and improving students' learning and educational practices, however, assessment practices remain unchanged and it does not address the unique needs of students with disabilities (Norton, 2009).

Therefore, if higher education institutions seek to ensure a positive learning experience for their students with disabilities, Hanafin et al. (2007) suggested that they should be cognizant of the fact that learners learn differently and people express their understanding differently and therefore using more inclusive assessment practices that are likely to be of benefit to many students. An inclusive approach to teaching, learning and assessment in higher education was also suggested by Kioko and Makoelle (2014) stating that the approach is effective in addressing student's educational needs in these institutions. Similarly, Norton (2009) noted that a paradigm shift is required to make assessment authentic that allows learners to improve their own learning.

2.3.1.3. Support Provisions and Services for SWDs

2.3.1.3.1. The Need for Support in Higher Education

The increasing diverse nature and needs of students require higher learning institutions to change the teaching learning process from teacher centered approach to a more student centered approach to respond to the needs of their students. In student centered model, student's educational needs are identified and are supported in their learning to reach their maximum potentials. This changing context of higher education also necessitates a more systematic and multifaceted approach involving all parts of the university to support students' learning (Gosling, 2009).

There has been a pressing desire from international human right conventions and declarations in general and higher educationin particularto provide equal access,

opportunities, and ensure quality and equity education for disadvantaged groups including students with disabilities. Similar to the needed change in teaching learning approaches discussed earlier, a paradigm shift is also required in approaches to disability as part of equity requirement. Hence, an educational approach to disability should be adapted into the education system as it relates disability to the capacity of the education system to place every student, regardless of his or her particular circumstances, on an equal footing in terms of access, outcomes and prospects as opposed to a diagnostic approach to disability which emphasizes what children with disabilities and young adults cannot achieve educational success (OECD, 2011).

The educational perspective of disability in higher education context means that institutional level support and provisions for students with disabilities is a significant input for the successful completion of their studies. Capitalizing on this, Stodden et al. (2001) indicated that it is also critically important to understand educational supports and accommodations that are needed by students with disabilities to progress and succeed in postsecondary programs. From this perspective, a person is considered as disabled if he/she does not receive the support that allows to learn and develop and, therefore, the education system should be able to help these students to move beyond their disability and achieve their full potential (OECD, 2011).

The main reason that students with special educational needs require more targeted support and services than students without special educational needs is because, according to European Agency for Development in Special Needs Education (2006), they experience far higher levels of work, social and combined stress than the later group. Graham-Smith and Lafayette (2004) on their part argued that despite the cognitive ability that students with

disabilities may have to handle course contents presented in the class, they may lack the skills and strategies necessary for obtaining and processing the information from text books, readings and lectures. Hence, they further suggested that it is the responsibility of the institutions to facilitate the students' learning through coordinating campus communities and provide appropriated support services aimed at meeting the disability accommodation needs of students with various disabilities if they are required to succeed and graduate from university.

The term provision, as Hadjikakou and Hartas (2007) explained, is complex and includes issues of equality of access, understandings of disability, assessment and identification and availability of resources and expertise. The capacity of students with disabilities to adapt to the demands of tertiary education depends, more than for other young adults, on the availability of appropriate support (OECD, 2011). In the same way, a number of studies (Graham-Smith & Lafayette, 2004; Matshedisho, 2010; Kiokol & Makoelle, 2014) reported that support and service provision are essential factor that facilitate a positive learning experience of SWDs in higher education. While role transformation, independent decision making, and assumption of responsibility for one's action are features that students will encounter/experience as they move from secondary education to post-secondary education institutions, it is imperative of this learning institutions to offer important services such as information and referral, student advocacy, and counseling for the successful integration of both students with and without disabilities into college life (Kundu et al., 2003).

In fact, being a student with disability does not necessarily mean that these students always need support services. The provision of accommodative services for students with

diverse disabilities is influenced by different interrelated factors. Stodden et al. (2001) depicted that attributes of the individual are important variables in the provision of educational supports. The nature of an individual's disability and the level of severity of that disability will likely influence not only the specific educational supports that are needed, but also the entire support strategy. But, whenever students with disabilities who have accommodation requirements experience difficulties in accessing support services and accommodations, it can cause stress which will ultimately affect their persistence (Hall &Tinklin, 1998). In support of this argument, the participants in the study of Kioko and Makoelle (2014) pointed out that the challenges they encountered with the note-taking services caused frustration, increased work load and difficulties in learning and examinations.

2.3.1.3.2. Support Service and Experiences of Students with Disabilities

As to the experiences of students with disabilities in relation to support services at their higher learning institutions, the literature reported both positive and negative experiences. On a positive note, for instance, support services such as tests and assignments in an alternative format, distraction-reduced testing environment, flexible assignments and test dates, learning strategies or study skills assistance, physical therapy were found to be a very significant factor in predicting student graduation (Pingry O'Neill et al., 2012). Students with physical disabilities participated in the study of Pingry O'Neill et al. reported that extended test time (58%), note-taking services (44.6%), assistive technology (38%) and accessible classrooms (34.9%) were services that they often used. According to the findings from the study of Kioko and Makoelle (2014), the various support services including technological support and assistive technology trainings, provision of alternative tasks, access to the support of

mentors, library support that enables students to access learning resources, note taking services, study skill attributed to a positive learning experiences of students with disabilities in Winchester University.

Positive contributions of a wide range of support services for students with visual impairments were also reflected in different studies. Participant students with visual impairment in the study of Reed and Curtis (2012) had a mixed feeling towards support service provisions. The finding indicated that the programs have a large variety of accommodations to students with visual impairments. The most commonly used accommodations include exam accommodations, adaptive technologies such as laptops and software (such as Kurzweil, JAWS, and Zoom Text), electronic versions of learning materials, and access to disability counselor. However, 59% of participants commented that they sometimes had difficulty accessing appropriate accommodations because alternate formats of needed materials were not provided on time, materials were inaccessible, note takers were not reliable or their accommodations (such as audio recordings) were denied by the teaching staff.

In Ethiopia, it seems that students with visual impairment receive better accommodation services than students with hearing and physical/motor impairments. Despite the total absence of service provisions in some universities investigated, 81% of students with visual impairments had received different support services followed by 75% and 45% of students with hearing and physical impairments respectively (Tirussew et al., 2014). In the study of the department, provision of Braille paper (77%), slate and stylus (68.9%), tape recorder (67.3%), battery for tape recorder (55.7%), computer with jaws (53.4%), internet services

(54.2%), voluntary reading services (62.4%), voluntary recording services (53%) and provision of white cane (67.5%) were found to be the most frequently used services.

However, it was also found that several other important areas of services were either very low or non-existent. For example, participants reported that text book in Braille format (90.4%), Braille printing services (96.5%), exam reader/scribe (66.1%), and training services on life skill (72%), study skill (82%), computer skill (62.5%) were not available. Despite the presence of some services such as trainings in study skill (41%) and reproductive health (48.3%), other services were not available or very low and inadequate for students with physical/motor impairments. For example, 73.43% of them reported that supportive appliances such as artificial prosthesis, braces, crutches, rubber tip, wheelchair, innersole and walking sticks were not available. Taking the large number of students with physical/motor disability (55.6%, n=215) participated in the study into consideration, it seems that the learning needs of these students were not properly addressed by the universities in Ethiopia.

Literature indicated that students with hearing impairment also experience a number of challenges in higher education. Particularly deafness is more likely to struggle in the academic and social environment considering the learning environment is heavily dependent of spoken language. The barriers they experience are associated with communication, socialization, curriculum adaptations and modifications and sign language interpretation (Safder et al., 2012). Fuller et al. (2004) also added that fast rate of teachers' speech during lectures, difficulty in participating in discussions and answering questions were challenging. Studies indicated that lack of sign language interpretation is a major barrier that these students face in their education. Safder et al. (2012) found out that it is not only the absence of interpretation but also interpreters also have a problem of interpreting certain concepts.

In the study of the Tirussew et al. (2014) a total of 38 (9.8%) students with hearing impairment (of which 66%of them were learning in AAU) were participated. The most rated services were audiometric assessment (54.5%), assistive devices (58.8%), and job hunting skills (50%). Nonetheless, it was also reported that services in many important areas were either very low or non-existent. For example, except very few departments in AAU, there was no sign language interpreter in classrooms and disability resource centers in other universities. Three of the 11 universities investigated did not admit students with hearing impairments at all. Besides, similar to the finding of Safder et al. (2012), participant students who had access to interpretation in AAU complained over the professional competence of interpreters as they did not give complete interpretation of the context and messages. Moreover, access to information in their format was limited. 85% of them reported that mobile phones were not used for announcement purpose.

Students with disabilities, depending on the particular type and severity of disability, seem to require classroom assistants and note-takers. Note-taking service was found to be significant support for students with visual impairments (Reeds & Curtis, 2012). All participant students with disabilities (sensory and physical impairments) in the study of Kioko and Makeolle (2014) reported that note-taking service was highly instrumental in helping them to read lectures, participate in group works and prepare them for examinations. However, it was also suggested that the positive experience of students with disabilities who require the note-taking service depends on the quality and ability of a note-taker. Despite the provision of the support, some students indicated that they had a negative experience as a result of note-takers and scribes who failed to turn up as expected, had inaccurate, poor quality writing and training, lacks subject and technical knowledge and difficulty of

establishing rapport with new note-takers when changed. As a result of such barriers, classroom assistants and note-taking services did not predict graduation of the participant students with disabilities in the study of Pingry O'Neill et al. (2012). It seems that classroom assistant and note taking services for students with visual impairments do not exist in Ethiopian higher education institutions.

Different researchers (Stodden, 2001; Getzel & Thoma, 2008; Garrison-Wade, 2012) on their part gave paramount importance for services related to self-advocacy and self-determination skills of students with disabilities. According to these authors, self-advocacy and self-determination skills (the ability to understand and express one's needs and to make personal informed choices and decisions) are highly important for students with disabilities even before they come to higher learning institutions. The skills are considered as a predictor for entering and completing higher education studies. Though students with disabilities in university of Winchester were satisfied with the amount of services they received from disability team and teachers, the student's personal effort and confidence was instrumental in accessing the services and in facilitating their inclusion (Kioko & Makoelle, 2014). While some students communicate their needs in advance and acquire services, others tend to hide their needs due to fear of stigma. They further suggested that students with disabilities should be encouraged to be confident and come forward to talk openly about their disability. High expectations and understanding of teachers, families and others help the students to develop self-advocacy and self-determination skills and the lack of it affects self-confidence and ability to succeed (Garrison-Wade, 2012).

Financial problem is one of the major challenges students with disabilities encounter in higher education. The disability needs coupled with poor socio-economic background of the

students necessitate the provision of financial assistance to allow them to fulfill personal and academic needs. The study of the Tirussew et al. (2014) showed that over 60% of the parents of the participants students earn less than 1000 or less ETB (less than 25 dollar per month). The financial support is needed for special services/resources, photocopying, transcription, exam reader, sanitation, medical needs, transportation, housing, assistive devices and special equipment to enhance learning (Tirussew et al., 2014; Garrison-Wade, 2012; Matshedisho, 2010).

Despite its critical role, lack of assistive technology and difficulties in using them is also an area of concern in the education of students with disabilities in higher education. Participant students in the study of Hanafin et al. (2007) reported that lack of electronic device support affected their participation on an equal basis to their peers. In their study, Sachs and Schreuer (2011) found out that students with disabilities had fewer experiences in the use of computer and information technology than students without disabilities in general. In addition, they examined the difference in student experience between students with disabilities who used computers and who didn't and found out that those who uses computer had more experiences on all subscales of student experiences and activities, estimated their gains higher, and were more satisfied with their studies.

Taking the findings of Pingry O'Neill et al. (2012) into account, the presence of support service and assistive technology alone may not predict the successful graduation of students with disabilities from higher education. In contrast to the studies reviewed in the present study, assistive technology services were found to decrease the odds of college graduation for students with disabilities in the study of Pingry O'Neill et al. (2012). However, they also explained that failure of the universities investigated to provide students with the individual

attention they need to access available technology, lack of adequate funding to provide the most up-to-date and useful technology or failure to provide the type of training students need in order to utilize available technology in an effective and timely manner may contribute to the result.

In this regard, Jacklin et al. (2007) also argue that it was not always the support itself that was of prime importance, but also the way in which that support was provided or organized. Indeed, according to Yared (2008), lack of access and coordinated services or programs is frustrating for students with disabilities and it is a reflection of the dropout rate of this group at the postsecondary level. Gosling (2009) suggested that learning support for students with disabilities will be effective if disability provision establishes a culture which values equality and diversity and integrates thinking about disabilities into standard procedures and thinking by all staff.

2.3.1.3.3. Importance, Organization and Activities of Disability Support Offices/Units

All students including students with disabilities have their own learning needs and this learning need has to be met through appropriate and adequate support provisions. The process of meeting the learning needs of students, as Gosling (2009) referred, is a learning development process. In this process, Gosling explained, structured learning support is designed to provide assistance to students to address their specific need. Hence, higher learning institutions have a responsibility to identify the student's needs, make provisions to meet the needs and remove all the barriers hampering the student's success on their courses.

Organizing support services on a team basis and expanding the range of services is inevitable as the number of students with varying types of needs increases (European Agency for Development in Special Needs Education, 2006). Hence, a quality program of disability support needs to be in place in higher education institutions for students with disabilities to

succeed and complete their studies (Graham-Smith & Lafayette, 2004).Although different countries in Europe have different ways of organizing support for students with disabilities, three main forms of organizations were more evident (European Agency for Development in Special Needs Education, 2006). These are:

1. Contact person and coordinator working with issues relating to educational support and advice,
2. Support team, department or office, and
3. Multi-disciplinary service with teams of tutors and advisors from different professional backgrounds. (p:50)

The services that can be provided by such offices, units or teams may include academic support, providing specialist study support materials, academic accommodation, health services, financial and technical services, advice and counseling, trainings, various devices to the building of positive attitude towards disability. Disability units primarily provide academically related support services for students with disabilities (Braille, tape-recorded readings, sign language interpreters, alternative assessments, and assistive technology such as text to voice converters) and other forms of support such as communicating the needs of students with disabilities to faculty, campus advocacy and helping students with disabilities with their daily campus challenges (Matshedisho, 2010). In addition to accommodation procedures for classroom activities these offices also provide advising assistance in the areas of scheduling assistance, disability management, academic probation issues, resource referral, and graduation educational planning (Graham-Smith & Lafayette, 2004).

The importance of having a formally organized disability support system in either ways is illustrated in different studies (Matshedisho, 2010; Barber, 2012; Garrison-Wade, 2012;

Kioko & Makoelle, 2014). For example, respondents who completed their study successfully reported that the disability services were a key factor in their ability to complete their degree successfully (Barber, 2012). Similarly, the students' responses in Matshedisho (2010) study revealed the centrality of disability units in their academic and social life since the beginning of their higher education journey. For instance, the 25% of students who said that they enjoyed their first day at university reported that they had the support of their disability units in terms of orientation and feeling welcomed and other respondents eventually felt comfortable with the disability unit as they received help with their academic needs, securing residences, friendship and adjusting to the university environment. Personal and academic guidance students with disabilities received from the staff in the disability service centers including counseling services, emotional support, early registration, moving courses to accessible classes and communicating the students' nature of disability and learning needs to faculty members for accommodation helped them to become assertive, confident, receive academic accommodations and facilitates the inclusion and positive learning experiences (Garrison-Wade, 2012; Kioko & Makoelle, 2014). One student in the study of Garrison-Wade, for example, said that the counseling service he received saved him from leaving the school or dropout.

Despite the critical role student support services played, it seems that higher education institutions in Ethiopia gives little attention in opening and supporting the centers with adequate financial, material and human resources. Earlier studies (UNESCO, 1997; 1999, Yared, 2008,) reported that support services were absent or limited and the available few services were not organized, coordinated and properly delivered. Although progress was reported in the study of the Tirussew et al. (2014) in terms of opening disability

resource/support centers, increased services and allocating support provides in some universities, the centers were under resourced both in professionals and support services.

Moreover, disparity existed among institutions with regards to support services, where old universities (AAU, BDU, Mekele universities) were found to accommodate the needs of these students better than institutions established afterwards and the new ones. For this reason, most students with disabilities preferred to attend in these universities.

On the other hand, in higher education settings where there is limited access to support or not coordinated, the students experience will be the otherwise. Participant students in Al-Hmouz (2014) study reported that they had a negative experience due to absence of or limited support services, reasonable accommodation, assistive devices, and lack of skill and proper training of teachers to deal with disability issues. Only availability of residential accommodation and accessibility of indoor or outdoor facilities were rated positively. This implies that, as Garrison-Wade (2012) noted, students with disabilities may experience both architectural hurdles preventing their presence in the learning environment and programmatic barriers including support services that are either unavailable or inadequate to assist students in meeting academic and nonacademic responsibilities.

2.3.2. Experiences in the Social Environment

Community participation indicates active involvement of an individual in community activities roles and decision making processes. According to Christensen (2010), communities are social environments and social integration in community is especially important for individuals with disabilities. However, peoples with disabilities were considered as objects of pity and burden to society and they were denied opportunities for community participation and living. According to Link (2015), social isolation of persons

with disabilities within their community still prevails in the contemporary society due to unchanged socio-cultural perspective on disability, which is predominantly negative.

In higher education context, a satisfactory social life of students with disabilities is a highly important aspect of a student's experience. A negative social experience is a source of stress for the students (Hall & Tinklin, 1998). Social integration includes the students' general feelings of belonging (identity as a student of a specific university and a member of a specific residence), the importance of friendship and on a broader level the campus culture and climate (Swart & Greyling, 2011).

Research evidences indicated that social skill and interaction is one of the determinant factors for successful academic integration and completion in any educational settings. Devine (2013) also emphasized that greater social involvement in student life is an important predictor for students' academic success, retention and graduation in higher education. Although the student's social adjustment in university is a critical factor for persistence and success as it influence one's commitment to the academic system, the lack of it results dropping out of university without completing their study (Almog, 2011). Therefore, a successful education experience is not simply about academic study but also the development of social skills and achieving independence.

The role of friendship for students with disabilities in their successful academic and social integration and easy adjustment in the physical environment of higher education institutions are also considered as determinant factors either to persist or dropout early. In Matshedisho (2010) study, the students with disabilities who were able to make friends felt comfortable and participated in social relationships in and outside of the campus and concluded that the availability of friendship seem to make life easier for the students.

Similarly, a study conducted by Kioko and Makoelle (2014) reported that all the participants believed that interpersonal communication and positive relationships are essential for reasons of ensuring the availability of the support needed to students, facilitating a working relationship between students and staff, and fostering individual inclusion. The most important contribution of such positive relationship was that it helped students to develop a sense of security and enabled them to openly request disability specific support services from teachers and support staff.

Despite the crucial significance of positive social life and relationships particularly for students with disabilities in higher education, it is the one most frequently cited as barrier in literature. For example, all students with special educational needs involved in detailed interview in a research project carried out in Iceland also agreed that the most difficult barrier they faced was social isolation and lack of communication with members of campus community (European Agency for Development in Special Needs Education, 2006). Students with visual impairment in the study of Reed and Curtis (2012) reported that their participation in some campus activities is limited and experience difficulties in interacting with peers. As to the reasons for non-participation in campus activities, 30% of the students explained that it is because of lack of effort and planning from the institutions in accommodating their needs. For example, 23% of them believed that they were given the same academic opportunities in terms of work placements, practicum and exchange as their sighted peers. The impact of negative attitude and social stigma within the campus environment was highlighted in the study of Jameel (2011). Many students with disabilities in the study reported that they tend to avoid disclosing their disability due to fear of labeling.

As an important aspect of higher education experience, participating in extracurricular activities, according to Devine (2013), contributes to student's academic success and increases students' learning, sense of belongingness and leads to friendships not only within the education setting but also that may extend beyond college years. However, similar to the limited social interaction observed in higher education students with disabilities, it is reported in various studies that their participation on extracurricular activities is also limited (Tinklin et al., 2004; Adams & Holland, 2006; Yoh et al., 2008). In their studies, for instance, Tinklin et al. (2004) found that some students with disabilities lacked social networks, experience difficulty of attaining a higher degree of independent life and were uninvolved with extra-curricular activities which in turn reduces opportunities for informal learning.

When compared with students without disabilities, students with disabilities experience a wide range of barriers resulting from physical, social, educational and psychological factors exist in higher education. The finding from OECD (2011) study revealed that these obstacles are also attributable to the isolation felt by some students with disabilities, which can lead to failure and constitutes a heavy psychological burden. To students with visual impairment, for instance, the lack of texts in Braille or appropriate teaching aids significantly increases the workload which makes it harder for them to combine work and study, and isolates them from their fellow students.

Similarly, it was found that since the costs of sign language interpretation are covered only during teaching hours, deaf students or students with hearing problem may have trouble communicating with other students outside the classroom, which led them to social isolation. Lack of physical accessibility is also another source of isolation for students with mobility

impairments as it may restrict their mobility on campus, require a great deal of extra time, and prevent them from participating in all planned curricular activities.

The policies and practices of higher education institutions can also affect the relationships and interaction of students with disabilities within the campus. Allocating students with disabilities in a separate building and dorm rooms is practiced in Universities in Ethiopia (Tirussew et al., 2014). Participant students in the study of the department reported that the practice had a negative consequence in their social network as they miss opportunities for social interactions, sharing information and academic collaborations.

The policies, practices and activities of higher education institutions do have direct and indirect consequences on the social integration of students with disabilities. For Link (2015), however, societal attitudes are one of the greatest barriers faced by people with disabilities which affect the positive relationship of students with disabilities. The staff and students participated in the study of Reed and Curtis (2012) also identified lack of understanding, poor attitudes and prejudice in the campus as a social barrier.

2.3.2.1. Attitude of others and its effect on the Social Experience of SWDs

Attitude is the most important factor that facilitates or hinders active engagements of students with disabilities across a range of curricular and extra-curricular activities in educational settings. Attitude is any belief or opinion that includes a positive or negative evaluation of some target (object, person, and event) and that predisposes peoples to act in a certain way toward the target (Marini & Stebnicki, 2012 cited in Link, 2015). In fact, evidences form the review of the literature and results of various studies also indicated that students with disabilities experience both positive and negative social attitude in their higher

learning institutions. Of course, either of these attitudes they may experience has its own consequences on personal, social and academic adjustment and integration into a campus life.

Postsecondary students with disabilities interact with members of the university community including faculty members, students with and without disability, and administrative staff. The attitudes they have towards inclusion, disability and persons with disabilities determine the participation and development of students with disabilities. Certainly a positive attitude will encourage more participation and engagement of students in different academic and social activities. For instance, positive faculty-student relationship facilitates the positive learning experiences of students with disabilities (Kioko & Makoelle, 2014) and it is instrumental to establishment of caring, mentoring relationships, form one's identity and contributes to the success of students in higher education institutions (Rao, 2004).

In contrast, negative attitude results in prejudice and discrimination which limits student's academic and social integration. Negative attitudes and behaviors have an adverse effect on children and adults with disabilities, leading to negative consequences such as low self-esteem and reduced participation (WHO, 2011) and may prevent students with disabilities from using self-advocacy skills (Rao, 2004; Pingry O'Neill, Markward & French, 2012). Moreover, due to fear of labeling and impact of stigma resulting from negative attitudes of faculty, other students and administrative staff may prevent students from disclosing their disabilities and requesting services and accommodations (Sachs & Schreuer, 2011; Herbert et al., 2014; Getzel & Thoma, 2008). Reviewing previous studies, Hatchell (2009) have concluded that both teacher attitudes and beliefs toward inclusion can significantly influence the learning environment of students with and without disabilities.

Indeed, the studies that assessed faculty attitudes toward people with disabilities reported that it is an important variable that plays a significant role for the student's persistence.

Higher education students with disabilities participated in different studies reported a mixed feeling about their experience regarding the attitude of others. The positive attitude of teachers (Kioko & Makoelle, 2014) and supportive friends (Matshedisho, 2010) was reported as key attributes to the students' success in social and academic environment. In most of the studies, however, attitudinal barriers have been cited as a major inhibiting factor for social and academic inclusion, persistence and participation of people with disabilities in higher education institutions despite ongoing efforts of enacting and enforcing anti-discrimination and pro-inclusion policies (Hanafin et al., 2007; Konur, 2006; Jameel, 2011; Rao, 2004). Negative attitude from students, faculty members and university administrative staff were the most rated (78.9%) barrier by the respondents that affects the educational experiences of students with disabilities in Addis Ababa University (Dawit, 2014).

The influence of attitude of teachers on their ability and willingness to accommodate the learning needs of students with disabilities is indicated in the study of Reed and Curtis (2012). Participant students with visual impairment and staffs in disability center suggested poor attitude of professors as a reason for failure to accommodate the needs of students with visual impairments. As a result, it can be seen from the experiences of students with disabilities studying in Ethiopian higher education institutions that students tend to avoid social interactions with their instructors (Tirussew et al., 2014).

Persons with disabilities also have been marginalized from education mainly due to negative beliefs and attitudes about disability and persons with disabilities in Ethiopia (Tirussew, 2006; Almaz, 2014). A research on the attitudes of Ethiopian college students

toward people with visible disabilities conducted by Almaz (2014) in Addis Ababa University found out that the students attitudes in general was found to be negative. She further indicated that the negative attitude is more pronounced towards peoples with visible disabilities. Similarly, the majority of teachers and some students without disabilities and administrative staff had a negative attitude towards SWDs and were found to be not cooperative and understanding in the study of the Tirussew et al. (2014).

However, not all teachers are ignorant and refuse to provide support to the students with disabilities. Students in Matshedisho (2010) study reported a mixed experience where they encounter teachers who are responsive to curriculum flexibility and provide alternative styles of teaching on one hand and who did not consider disability support as part of their academic duties on the other hand. In addition to attitudinal factor, faculty members lacked understanding of the needs of SWDs and the rights to special accommodations and other supportive services (Garrison-Wade, 2012; Hall & Tinklin, 1998). This kind of barrier is referred to as unintentional attitudinal barrier (Pivik et al., 2002) and faculty members needed to learn more about disabilities and disability support (Sachs & Schreuer, 2011; Matshedisho, 2010).

The attitude of administrators is equally important like that of faculty attitude and could also be a vital ingredient in the success or failure of students with a disability and in the overall success of the mainstreaming effort in postsecondary education (Rao, 2004**).** In contrast, the finding from European Agency for Development in Special Needs Education (2006) indicated that the attitudes of institutional leaders are likely to have the most direct impact.

Regarding the social interaction with other students, students with disabilities reported a mixed feeling. While many students without disabilities have a positive attitude towards students with disabilities, there was some indication that some do act inappropriately, ignorantly or even abusively around students with disabilities (Hall & Tinklin, 1998). The result in the study of the Tirussew et al. (2014) indicated that some students get along with other students and others had relationships with only students with similar disability types.

Personal factors may contribute to social interactions of an individual. However, attitudinal environment has a large impact on one's engagement and participation in the society. A study conducted in Canada by Pivik et al. (2002) revealed that students with physical disabilities, for instance, experience intentional attitudinal barrier which are expressed in the form of isolation, physical or emotional bullying which in turn limits their interaction.

In general, according to Garrison-Wade (2012), students with disabilities may experience attitudinal challenges, such as negative attitudes, misperceptions about their skills and abilities from faculty, staff, and their peers without disabilities and insensitive personnel about the needs of students.

2.3.3. Experiences in the Physical Environment

A person's physical environment has a huge impact on his/her experience. The experiences of students with disabilities studying higher education can be significantly influenced by the extent to which their campus' physical environment is accessible to them. Accommodations in the physical environment is considered as fundamental in ensuring universal access and enables students with disabilities to participate in postsecondary educational and social activities (Klinger et al., 2014). Conversely, inaccessible physical

environments restrict the participation of students with disabilities (Hall & Tinklin, 1998) and create disability by creating barriers to participation and inclusion (WHO, 2011).

Equal opportunity policy initiatives in the USA have known for their paramount importance in paving the way to the inclusion of peoples with disabilities. The Civil Rights Acts of the 1964 and section 504 of the Rehabilitation Act of the 1973 are among the earliest passed acts. Most importantly, however, Americans with Disabilities Act of the 1990 is considered as a cornerstone for subsequent disability inclusion legislations enacted worldwide. These policy initiatives played a significant role in mandating higher education institutions to provide equal opportunity for students with disabilities by creating accessible educational buildings and campus facilities including parking, accessible routes, restrooms, drinking fountains, signage, public telephones, and exercise equipment and recreation facilities (Yoh et al., 2008).

Despite the existence of accessibility legislations, universal design principles and the ongoing positive developments in making buildings and facilities accessible to students with disabilities, access to the physical environment has been reported as one of the major barriers the students face in higher education institutions, which greatly affects their equal participation in social and academic life (Mutanga, 2017; Garison-Wade, 2012; Morely & Croft, 2011; Shevlin et al., 2004; Borland & James, 1999). Absence of ramps, elevators, shortage of accessible washrooms and drinking fountains, inaccessible toilets, inaccessible libraries, inaccessible rooms within campus buildings, inaccessible recreation areas, inaccessible laboratories, lack of access to upper level classrooms in multi-level buildings, inaccessible cafeterias and lack of signage are the most common barriers cited in different studies that restricts students with disabilities from accessing facilities inside buildings.

A scoping review of 49 articles published after 1990 in USA, UK and Canada on the physical accessibility of postsecondary education for students with mobility impairments reported that the barriers were more numerous than the facilitators (Klinger, 2014). Similarly, the findings from the literature synthesis of Mutanga (2017) in South Africa indicated that the challenges students with disabilities face with the built environment in their campus includes lack of facilities, student support material, accessing the library and parking spaces and physical access within the university environment which made them feel vulnerable or unsafe.

In Ethiopia also, the physical environments and facilities in educational settings are not barrier free and friendly to students with disabilities (MoE, 2012) and access to the physical environment is often cited as a major barrier in higher education setting (UNESCO, 1997; 1999; Yared, 2008; Tirussew et al., 2014). The finding from Yared (2008), for instance, showed more than 90% of the physical environment of the institutions studied was inaccessible. Participants in the study of Morley and Croft (2011) also indicated that the built environment of higher education institutions in Ghana and Tanzania was designed solely for students without disabilities and created the obvious access barriers by impeding independence.

When students with disabilities are required to learn and take examinations in inaccessible classrooms, it excludes them from equally participating in such experiences. A study of Yared (2008) and Tirussew et al. (2014) illustrated that students miss lectures and examinations as these activities were conducted in upper floor of the buildings. Kioko and Makoelle (2014) also found that students with disabilities and note-takers with disabilities sometimes miss lectures at times when the lectures were conducted in inaccessible rooms. In

relation to challenges related to parking spaces, about 38 studies reviewed by Klinger (2014) reported that the barriers students with mobility impairment experience include inadequate number of designated accessible parking spaces near the entrances of buildings, the use of accessible parking spaces by persons without permits.

The architectural impediments that these students encounter are not only limited to university facilities but also includes inadequate access to public transportation, and technology (Garrison-Wade, 2012). One of the challenges students with disabilities faces is lack of accessible public transportation outside and inside the campus environment. From the scoping review of literatures, Klinger (2014) found out that limited availability of accessible public transportation was the most frequently raised barrier by students with mobility impairments. For example, the barriers was reported in most of the studies (n=10) out of 33% (n=16) studies discussed about general products and technology for transportation. Many students with disabilities in Garrison-Wade (2012) study also commented on the challenges to move from one part of the campus to another and other places within the campus such as dining hall due to lack of transportation.

Campuses may have a dispersed layout such as campuses that span large geographical distances and those that have sub-campuses (Klinger, 2014) which requires students with disabilities to travel long distances. In fact, Yared (2008) found that most of the buildings of higher education institutions in Ethiopia were randomly placed throughout the campuses. Individual narrations in the study of the Tirussew et al. (2014) illustrated the severity of the problem. A female student who uses two crutches from Dilla University in Ethiopia indicated that she did not take the practical part of computer application course as she was challenged by the distance from the new campus to the old campus which made her to be depressed and

decide to dropout. Another student with a disability from Adama University added that the long distance between dorm rooms, lecture rooms and lab rooms coupled with roads/path ways that were full of obstacles (like open pits) caused students with disabilities to travel long distances and to arrive late for classes. From the synthesis of literatures in South Africa, Mutanga (2017) found out a similar result and concluded that it caused students to experience a number of challenges in their academic and social life. This implies that higher education institutions are expected to do more to improve physical access to buildings and facilities (Matshedisho, 2010).

In addition to long distance travel, barriers also exist that restrict easy movement of students with disabilities in higher education. These include problems related to accessibility of pathways and population density (crowds). According to Klinger (2014), pathways that are lengthy, too steep, too narrow or have steps present, lack of curb cuts and poor location of curb cuts, broken or uneven pavement, absence of stop lights at cross walks, absence of adequate lighting on campus paths to assist with transportation at night, slippery pathways due to snow, rain or mud slides and temporary conditions, for example, construction sites that may create unanticipated barriers. Moreover, navigating through heavy crowds such as in classrooms, halls, elevators, and outdoor pathways was raised that negatively impacting physical accessibility. Overcrowded classrooms and poor acoustics affect students with hearing impairment as well. A female participant student from public university in Tanzania in Morely and Croft (2011) study said:

> *"And even during the lectures we are too many, especially in Education. When you come late, they decided to be in back bench which is very difficult to hear well and this is so difficult" (p. 389).*

Finding accessible toilet is one of the frequently raised barriers students with disabilities encounter in their everyday life in their campuses (Mutanga, 2017; Klinger, 2014; Garrison-Wade, 2012). One participant student in Garrison-Wade (2012) study, for example, said '*I had a three hour lab my first semester and unfortunately there was no handicap restroom*." Studies done in Ethiopia also reported similar findings. For example, 82% of the private and 88% of the public institutions investigated in Yared (2008) study reported that less than 5% of toilets in the campus were accessible to their students with physical disabilities. Similarly, about 90% of students with physical/motor impairments in the study of the Tirussew et al. (2014) reported that they could not access toilets and shower rooms in their universities.

Engagement in recreational and physical activities is another part of student's experiences in higher education institutions. Participation in such activities provides a multifaceted benefit for students with disabilities. For example, it provides a general physiological, psychological and social wellbeing which in turn leads to an active life style, improved health condition by preventing from various diseases, higher level of self-determination and independence, build satisfactory friendships, life skills and physical functioning (Yoh et al., 2008). However, Yoh and collogues further noted that, regular participation of students in outdoor and indoor recreational and physical activities is very low due to inaccessible physical environments and adequate adaptive equipments in their higher education institutions.

Students with disabilities who participated in different studies (Fuller et al., 2007; Healey et al., 2006; Tinklin et al., 2004) reported that a number of factors determine the choice over the field of study and higher education institutions. It was indicated that disability and physical access of the university are the most important factors among others.

Hence, institutions with accessible environment, which accommodate the needs and provide support services and technologies, influenced student's choice of courses and institutions. The issue of access to chosen places of study was highlighted by adelegate from the Netherlands during the European Parliament Hearing: *... Some of us can't study what or where we want and what we have the capacities for. Sometimes because buildings are inaccessible ...* (European Agency for Development in Special Needs Education, 2006: 54-55). Due to such physical environment, students with disabilities often experience difficulty in attending and actively participate in student life like that of students without disabilities. According to Morely and Croft (2011), absence of accessible physical environment and facilities also limit enrolment of students with disabilities into higher education.

The elimination of physical barriers and the provision of material support are becoming the concern of higher learning institutions. If students cannot move around the campus or gain access to buildings and facilities, they are effectively denied higher education (UNESCO, 1999). Therefore, Klinger (2014) suggested that higher learning institutions need to design and modify architectural elements using principles of universal design to enable their students with disabilities to equally participate and enjoy the benefits of higher education. Although dissatisfaction and barriers over the accessibility of the physical environment and facilities were numerous, positive developments were also noted in creating accessible environment to students with disabilities. Such as construction of ramps in new buildings, reconstruction of roads, renovation of toilets and shower rooms relocation of classrooms and dorm rooms to the ground floor. However, the students have problems due to lack of special arrangement made to accommodate their needs (Tirussew et al., 2014).

2.3.4. Experiences in the Policy Environment

The right to education and inclusive education are inherent in human right instruments since Universal Declaration of Human Rights (1948). Understanding that education is a fundamental pillar of human rights, democracy, sustainable development and peace, UNESCO's (1998) world declaration of higher education document underscored that it should be made accessible to all throughout life. In its article 3 (d), the declaration, requires not only access to members of some special target groups including individuals with disabilities but also the removal of barriers in higher education.

Inclusive education is promoted as an educational system to realize full access to education, equal opportunities for participation without discrimination and the provision of appropriate and reasonable accommodations within educational settings. Inclusive education, according to Kochung (2011) is aimed at removing the historical exclusion of persons with disabilities within and outside of the school through enactment or modification of legislation, policies and educational management practices.

In response to a call for full inclusion of students with disabilities in higher education, a number of governments have put measures in place to increase access (Altbach et al., 2009) and adopted inclusive policies and strategies that enhanced educational opportunities for equal participation. In United States, for example, section 504 of the rehabilitation Act of 1973 and the Americans with disabilities Act (ADA) of the 1990 are considered the most important laws that served as legal basis for equal opportunity and increased the accessibility for higher education for peoples with disabilities (Stodden et al., 2001; Riddell, Tinklin & Wilson, 2005; Thompson-Ebanks, 2012) and arguably played a significant role for the global inclusive education movement.

Various policy initiatives aimed at increasing the numbers of students entering and completing higher education are being implemented across Europe (European Agency for Development in Special Needs Education, 2006). All European countries involved in the study of the agency indicated that there was some form of legislation that protected the rights and entitlements of students with SEN in terms of access to and within higher learning institutions as well as support during their studies. The importance of recognizing the rights and needs of students with disabilities and adopting legislations concerning their full integration in higher education is highlighted in Fuller et al. (2004). The legislations have encouraged many institutions to take a more strategic approach to identifying reasonable adjustments to their teaching, learning and assessment policies and practices in countries like Australia and Israel. Similarly, various African countries ratified important international human right conventions and declarations and made part of their national law (Kochung, 2011; Morley & Croft, 2011, Emong & Eron, 2016) and used them to enact national level disability policies and inclusive education strategies.

Despite the ongoing expansion of higher education, the participation of students with disabilities in these institutions in Africa is considerably low. From the review of literatures, Mutanga (2017) indicated that despite the presence of policy framework aimed at improving equity and inclusion of students with disabilities in higher education in South Africa, equal access and participation is not yet realized. Despite the commitment of the government of Uganda to bring inclusion in every level of education, higher education failed to achieve equal opportunities (Emong & Eron, 2016). Lack of effective policy and legislations on disability issues and lack of translating the policies on paper into practice was raised as a major barrier that hinders equal participation and learning of students with disabilities in

higher education (Mutanga, 2017; Obiozor et al., 2010; Kochung, 2011; Morley & Croft, 2011). For Kochung (2011) and Mutanga (2017), the inability of higher learning institutions to detach from perceiving disability as a bio-medical issue that views learning problems are intrinsic within the individual and emancipate to viewing disability as a socio-cultural issue where the student's learning problem is as a result of interaction between impairment and contextual barriers is a major obstacle of inclusion of students with disabilities.

2.3.4.1. Education Sector Policy Context in Ethiopia

Ethiopia, like other countries in Africa, has signed important declarations and conventions concerning the rights of persons with disabilities and made most of these basic legal instruments into law of the nation by its constitution. Article 9(4) of the constitution states that "all international agreements are an integral part of the law of the land" (p.2). Such international instruments including the UN Convention on the Rights of PWDs which was adopted in 2006, the Standard Rules on the Equalization of Opportunities for Persons with Disabilities of the 1993 and the Salamanca Statement and Framework for Action on Special Needs Education, 1994 and important others are ratified. Moreover, article 13(2) of the constitution requires that the human rights obligations enshrined in the constitution be interpreted according to the various human rights conventions and treaties to which the country has acceded (ACPF, 2011).

In line with these international legal frameworks, various national legal and policy documents that reflect the educational rights of persons with disabilities and promote their inclusion in the society have been in place. The FDRE constitution made clear that education is a universal right and quality education should be provided to all citizens. It also places emphasis for the education of students with special educational needs. Article 41(5) of the

constitution clearly stated that "the state shall, within available means, allocate resources to provide rehabilitation and assistance to the physically and mentally disabled, the aged, and to children who are left without parents or guardian" (p.14). It also asserted that support shall be given to accommodate the needs of peoples with disabilities.

The major education sector policies and strategies that are instrumental in guiding the education of the country in general and special needs and inclusive education in particular includes the Education and Training Policy (ETP) of the 1994, Education Sector Development Programmes (ESDP) I –V and Special Needs Education strategy (2006) and the newly revised Inclusive Education Strategy of the 2012. The Higher Education Proclamation (No.351/2003) and the amended Higher Education Proclamation No. 650/2009 are important legal frameworks designed to ensure accessible, relevant and quality of education in the sub-sector for all citizens.

The ETP is a key policy framework that guides the development of education in the country. The policy is considered as a cornerstone as it guides various successive reforms and expansion of education at all levels, both public and private. The policy, according to Ayenachew (2015), "essentially opened the door to a period of all-inclusive, far-reaching reforms and massive expansion" (p: 2). In relation to the education of students with special educational need, one of the ETP objectives states that "To enable both the handicapped and the gifted learn in accordance with their potential and needs" (section 2.2.3:9). It also highlights that "Special attention will be given in the preparation and utilization of support input for special education" (section 3.7.6:29).

Since 1998, successive Education Sector Development Programs (ESDP I-V) are developed to translate the statements of the education and training policy into a general

education strategy and action plans. Under the policy framework of ETP, ESDP is a major instrument that is being employed to realize the policy goals. Unlike the previous three, ESDP-IV, which covered the years from 2010/11-2014/15, gave due emphasis for the education and inclusion of students with special educational needs in all levels of the education system (MoE, 2010).

The ESDP-V action plan, which was started in 2015/16 and will continue to the year 2019/20, on its part identified the shortcomings and poor progress in ESDP-V period and outlined objectives and strategies that will improve the situation of students with disabilities at all levels of the education system. The action plan has an objective of increasing the national enrollment capacity to increase access to higher education institutions. Hence, it was planned to increase the undergraduate GER in higher education from 9.4% to 15% and eleven new universities will be established to raise the number of public universities from 33 to 44 (MoE, 2015). This particular plan is already achieved in the year 2017/18. In addition, the ESDP-V action plan has an objective to reduce disparities in participation between disadvantaged groups and others. With respect to students with special educational needs, it is planned to increase from 1000 to 3000 students and raise the graduation rate of students with special needs to 95% (MoE, 2015).

The Federal Ministry of Education realizing that the ETP lacks clarity on the issues of special needs education developed and released the Special Needs Education Program Strategy in 2006. Apart from success stories, however, shortfalls were also observed in the strategy during its implementation and required revision. The drawbacks of the 2006 strategy identified were lack of commitment on the part of implementers, absence of screening and assessment tools, limited capacity, awareness, budget and funding, provision of educational

services, lack of data, inaccessible facility and unsafe school environment, insufficient teaching and learning materials, stationeries and assistive devices, lack of interpreters for deaf learners, and rigid curriculum (pp: 8-12).

Therefore, the strategy was revised and upgraded in 2012. Unlike the 2006 SNE strategy the revised one gives clear picture that the orientation of SNE in the country is promoting inclusive education. The overall objective of the newly revised strategy is to build an inclusive education system which will provide quality, relevant and equitable education and training to all children, youth and adults with special educational needs and ultimately enable them to fully participate in the socio-economic development of the country.

In line with the education policy, both of the higher education proclamations (the 2003 and 2009) have sections that urge higher education institutes to accept students with disabilities and provide the required material and professionals support to meet the special educational needs of the students though it seems that they have limitations in conceptualizing disability and students with special educational needs. Article 40 of the 2009 proclamation gives particular emphasis on how higher education institutions shall create a least restrictive learning environment and reasonable accommodation for these disadvantaged groups. It stated that:

1. Institutions shall make, to the extent possible, their facilities and programs amenable to use with relative ease by physically challenged students.
2. Institutions shall, to the extent that situations and resources permit, relocate classes, develop alternative testing procedures, and provide different educational auxiliary aids in the interest of students with physical challenges.
3. Building designs, campus physical landscape, computers and other infrastructures of institutions shall take into account the interests of physically challenged students [*sic*].

4. Institutions shall ensure that students with physical challenges get to the extent necessary and feasible academic assistance, including tutorial sessions, exam time extensions and deadline extensions (FDRE, 2009:5005).

Earlier studies conducted in Ethiopia (UNESCO, 1997; 1999; Yared, 2008) reported that higher education institutions investigated did not to have institutional disability related policies and legislations that guide admission, support provision and accommodations that provide equal opportunities for learning and participation. In a study of the Tirussew et al. (2014), the institutions investigated seemed to adopt some articles about students with special educational needs from higher education proclamation of the 2009. However, most students participated in the study reported that they were not aware of the existence of legislative and policy statements regarding provisions for them and they felt that the legislations are not implemented even if they do exist. This signifies the existence of barrier to access to information for students with disabilities. This challenge was also evident in the study of Tinklin et al. (2004) where most of the students were unaware of the DDA which prevented them from exercising their rights and entitlements for services.

Despite the change in policy context and ongoing massification of higher education in Ethiopia, the situation of students with disabilities in terms of access, student diversity and participation seems similar with the reports of studies since UNESCO (1997). For example, the participation of students with disabilities is still below 1% of the total student population, students with disabilities participated in different studies reported that they still encounter barriers in academic, social, physical and policy environments, and the type of disabilities identified and reported are still limited to physical, hearing and visual impairment.

Therefore, it can be argued that the presence of policies and legal frameworks at national level is not a guarantee for inclusion of students with disabilities in educational settings. In

addition to failure to implementation the available disability related legal instruments, absence of clear institutional level disability specific policy that outlines the mandates and responsibilities of institutions, student support services, faculty members and the entitlements of students, is a missing link in an effort to protect the rights of students with disabilities, widen their participation and inclusion in these educational settings. The failure to protect the rights of students with disabilities within the campus environment leads them to have a negative educational experience and develop a sense of exclusion and marginalization.

Nonetheless, it can be understood form the study of European Agency for Development in Special Needs Education (2006) that developing and responding to general and specific inclusive policies and legislations brings a significant change in the inclusion process across Europe and positive development for higher education institutions to make the learning environments more easily accessible in all respects. Therefore, as Moriña (2017) concluded that "In order to guarantee equal opportunities and facilitate the inclusion of students with disabilities, it is necessary to incorporate the principles of inclusive education and universal design for learning into university policies and practices based on the social model of disability (p:5) Hence, it is the responsibility of policy makers of every nation to demonstrate how policies and practices lead to greater inclusion of children with disability and improved educational outcomes (WHO, 2011). Participants in different studies also suggested that institutions should embrace diversity at the levels of policy, curriculum, and interpersonal interactions and focus on fundamental institutional change that benefits all rather than providing individual support (Tinklin, Riddell, & Wilson, 2004; Hutcheon & Wolbring, 2012).

Summary of Review Literature

Participation of persons with disabilities in higher education is increasing. Persons with disabilities, according to article 1 of the UN Convention on the Rights of Persons with Disabilities (UNCRPD) (2006), include those who have long-term physical, mental, intellectual, or sensory impairments which in interaction with various barriers may hinder their full effective participation in the society on equal basis with others.

Providing access to higher education is always associated with outcomes for the individual in terms of development of knowledge and different life skills, gaining employment opportunities and improvement of quality of life and the society/nation in terms of development of social capital. In addition to these advantages, however, participation in higher education provides persons with disabilities a means to confronting social inequalities deeply rooted in history, culture and economic structure that influence an individual's ability to compete (Altbach et al., 2009; Matonya, 2016) as it allows them to participate in knowledge-production and policy development which reflects their own perspectives (Jung, 2001, cited in Hutcheon &Wolbring, 2012). In addition, higher education is important in the self-esteem and self-actualization of for persons with disabilities.

Despite the implications of higher education indicated above, however, it is well documented in literature that the right to have access to good quality education for persons with disabilities has not been protected. As a consequence, they have been subjected to marginalization and rejection from the education system. Never attending school or dropping out before completing basic education as a result of being a person with disability has often been a reality in Africa in general and many of sub-Saharan African countries (Morely & Croft, 2011). Students with disabilities are the most diverse groups who have been

experiencing rejection form many higher learning institutions too. Hence, it is not surprising that if small numbers of students with disabilities manage to reach to higher education (Yared, 2008; Morely & Croft, 2011) despite a continuous increasing trend of attending higher education.

Despite the development of disability right and inclusive education policies in response to international calls, marginalization of students with disabilities from education is still a concern. The experience of exclusion is not only limited to access to higher education but also within higher education in terms of blocking programs, enrolling programs against their interest, lack of accommodations and support not only in academic aspect but also in their interactions in the social and physical environment (Yared, 2008; Morely & Croft, 2011; Tirussew et al. 2014; Leake & Stodden, 2014).

Similarly, students with disabilities in Ethiopia experience a wide range of barriers in the higher education institutions. The underlying assumptions for the barriers that caused the problems and the interventions followed were rested on the way disability and persons with disabilities defined, viewed and understood. This means that the policies, practices and cultures of higher education intuitions are functioning at the level of the medical model discourse. However, as the researcher argued that most of the barriers that cause disablement to students with different impairment are the higher education environment i.e., the academic, social, physical and policy. In order to ensure equal rights and opportunities for all students in higher education, the principles of inclusive education and universal design for learning should be embedded into university policies and practices (Moriña, 2017). These principles echoed the social model of disability which viewed disability as a diversity.

2.4. Conceptual Framework

Environmental factors, according to WHO (2013), are either barriers to or facilitators of the person's function. Within the framework of social model of disability, the social and environmental barriers restricts full and equal participation, sense of belongingness and inclusion in educational settings. The academic, social, physical and policy environment of higher education are also important dimensions that influence the students' experience. These environmental dimensions are interrelated and interdependent. Therefore, inclusive practices in one dimension generate desirable student experience in that dimension and also positively influence the experience in other dimensions as well and vice versa. Hence, a more accessible and inclusive university environment facilitates a desirable experience of students with disabilities, a more inaccessible environment that is not responsive to the needs of these students purport exclusion and therefore undesirable student experience is the outcome.

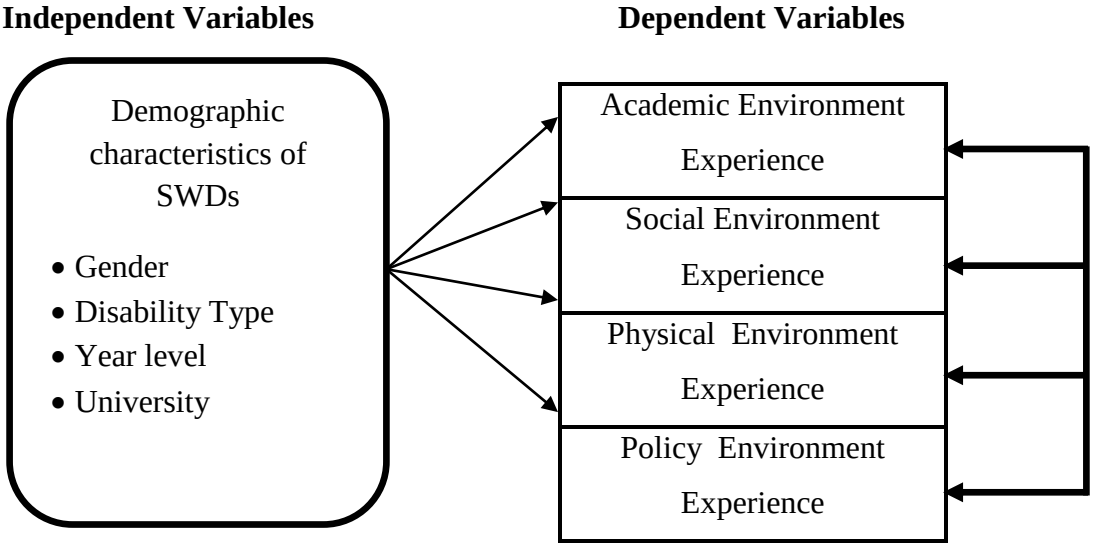

Fig.3. Visual representation of researcher developed conceptual framework

CHAPTER THREE

METHOD

This section of the dissertation presents the detailed descriptions of the philosophical assumptions of the study, research design employed, the study areas, the population, sample and sampling techniques, the instruments employed to collect data, data collection procedures, the methods employed to analyze quantitative and qualitative data and how they are integrated in the study and finally it describes the ethical consideration adhered.

3.1. Philosophical Assumptions

It is imperative that research is conducted under a certain philosophical idea or commonly referred as worldviews or paradigms. Researchers are also urged to locate their research in a selected paradigm (Doyle, Brady, and Byrne, 2009). This is because, according to Creswell (2009), paradigm influences the practice of research, the beliefs that researchers held, and the methods they embrace in their study. That is why Creswell (2009) defined paradigm or worldview as a general orientation about the world and the nature of research that a researcher holds. As a philosophical orientation, in clear terms, paradigm provides an overarching framework to the entire study and informs the meaning and interpretation of research data. Paradigm consists of four distinct elements, namely, epistemology (how we know what we know), ontology (nature of reality), axiology (values) and methodology (the process of research) that influence the research questions that researchers pose and the methods they employ to answer them (Doyle, et al., 2009; Kivunja & Kuyini, 2017)

In general, researchers are greatly influenced by the positivist (quantitative) paradigm, the naturalistic or constructivist (qualitative) tradition (Doyle et al., 2009) and the mixed

methods research (Creswell, 2009). These paradigms influence how we know, our interpretation of reality and our values and methodology in research.

i) Positivism

Positivism, sometimes referred as 'scientific method', is grounded on the rationalistic and empiricist philosophy. According to Kivunja and Kuyini (2017), research in this paradigm is viewed as a scientific method of investigation and relies on deductive logic, formulation of hypotheses, testing those hypotheses, offering operational definitions and mathematical equations, calculations, extrapolations and expressions, to derive conclusions. Thus, researchers in this tradition are considered independent and objective using larger samples to test carefully constructed hypothesis (Doyle, et al., 2009). Thus, reality is assumed to be objective and singular.

ii) Constructivism/Interpretivism

In contrast to positivism which is a quantitative research paradigm, constructivism or interpretivism is a qualitative paradigm that intends to explore human experience in a natural context. The focus of constructivism is to understand the individual and their interpretation of the world around them (Kivunja & Kuyini, 2017) and the meaning they make from their experiences (Creswell, 2009). This means that knowledge in this paradigm is constructed through their individual experience and the meaning participants give to the phenomenon under study. Therefore, the paradigm proposes that reality is socially constructed and multiple.

iii) Mixed Methods Research

The method is referred as the third methodological movement as it combines quantitative and qualitative research methods that represent the aforementioned distinct

worldviews, the positivist and interpretivist/constructivist. Although there is a debate over the possibility of combining the different epistemological and ontological assumptions of positivist and constructivist paradigms in a single study, proponents of the research approach emphasized that the method is evolving and has gained popularity in social science research as it utilizes the strength of both quantitative and qualitative research, provides more insight and an expanded understanding of complex physical and natural phenomenon (Creswell, 2009; Doyle, et al., 2009; Kumar, 2015).

According to Kumar (2015), mixed methods have particular value when a researcher is trying to solve a problem that is present in a complex educational or social context and to obtain a more complete picture of human behavior and experience. Moreover, Creswell (2009) argued that due to the complex nature of problems in social and health science fields, the use of either quantitative or qualitative approaches by themselves is inadequate to address this complexity. The literature review by Doyle et al. (2009) suggested that the purpose of mixed methods research is manifold including triangulation, providing a more complete and comprehensive picture of the study phenomenon, offsetting weaknesses of each approach and providing stronger inferences, answering different research questions that cannot be addressed in either quantitative or qualitative methods, explanation of findings, illustration of data, hypotheses development and testing, instrument development and testing.

3.1.1. The Rationale for Using Mixed Method Designs in Disability Studies

In addition to the merits stated above, using mixed method approach is highly recommended in the field of disability, rehabilitation and special needs education. Disability involves the interaction of a person with a wide range of complex factors in the environment. By nature, disability studies also require a participatory approach that includes people with

disabilities as decision makers throughout the process and this, according to Kumar (2015) requires research designs and methodologies that appropriately and effectively allow for such participation. Odom et al. (2005) also added two important rationales that necessitate the use of more than one research methodology in the field of special education. These are the current conceptualization of research in education that suggests using different research methods is significant to address different research questions in order to provide quality education for all and the complexity of special education as a field.

The features that make the field of special education more complex that require the use of more than one research methodology; according to Odom et al. are the variability or heterogeneity of disability categories and sub-categories and the placement of students with special educational needs in a continuum of educational contexts other than general education classes. This includes home or in an inclusive child care setting outside of the public school settings, special education classes or a combination of special education and general education classes, and also in community living or vocational settings for adolescents and young adults with disabilities in preparation for the transition out of high school and into the workplace.

Cognizant of the fact that a single method cannot adequately address research questions in the field of special needs education due to its heterogeneity of participants and complex nature, the researcher believes that the use of multiple methods research is better to unravel the phenomenon of this complexity. In addition, the researcher strongly argues that instead of using either quantitative or qualitative methods alone, stronger inferences can be achieved from the combination of the two approaches. Odom et al. (2005) also underscored that the

use of multiple methodology research in special needs education has resulted in the identification of effective practices.

3.2. Research Design

This study employed a mixed method approach to investigate the experiences of undergraduate students with disabilities in public higher education institutions in Ethiopia. The rationale for employing this approach is that the experiences of students with disabilities in higher education environment is a complex issue that either quantitative or qualitative methods are insufficient to fully capture the patterns and details of their experiences. As suggested by Creswell (2009) combining the two methods provides more insight and an expanded understanding of research problems. Therefore, this study used quantitative study to explore patterns of the students' experiences in their interaction with the higher education environment. A qualitative approach was used to explain the quantitative findings through examining how the students understand their experience in higher education environment from their own perspective.

More specifically, this study used a sequential explanatory mixed research design (QUAN-qual approach), a two stage research method, where the quantitative data was collected and analyzed in the first phase and the qualitative data was collected and analyzed in the second phase sequentially. Since this design can serve a larger, transformative purpose to advocate for marginalized groups, like persons with disabilities (Creswell, 2009; Shannon-Baker, 2016), it is selected for its appropriateness to provide better descriptions and detailed explanations about the relationship exists between the learning environments and the experiences of students with disabilities in higher education institutions.

The quantitative method, which used a survey method, is the major component of the study and it was used to explore the experiences of students with disabilities in the four dimensions of higher education environments using statistical procedures. The qualitative data were used to explain, expand and corroborate the quantitative results.

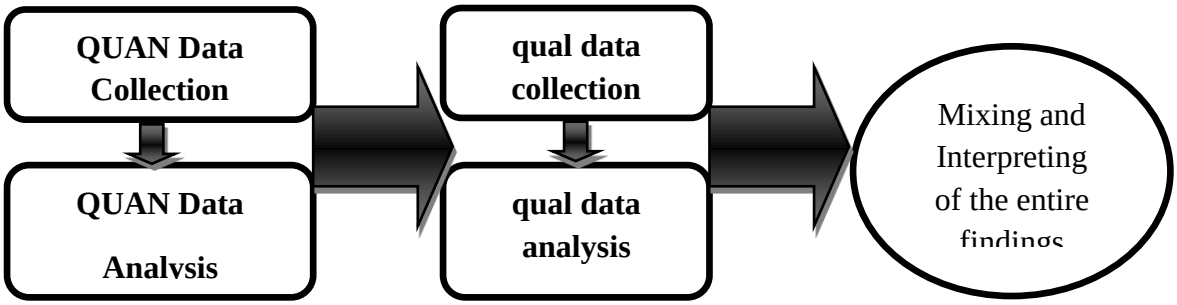

Fig. 4.Visual representation of sequential design of the study

3.3. Study Areas

During the time of data collection i.e., 2016/17 academic year, there were a total of 33 public higher education institutions (Universities) in Ethiopia. Currently (i.e., 2017/18 academic year), the number reached to 43 with the establishment of additional 10 Universities. Out of 43 Universities, 8 of them (Addis Ababa, Haramaya, Hawassa, Mekele, Jimma, Bahir Dar, Gonder and Arba Minch Universities) are recognized as first generation universities. These universities are the oldest ones which are known for admitting large number of students, having diverse research endeavors and community services. In addition, students with disabilities tend to enroll in these universities more so than other institutions. Of these Universities, therefore, three public Universities, Addis Ababa, Hawassa and Haramaya Universities were selected purposefully.

AAU, located in the capital city, was established in 1950 as the University College of Addis Ababa (UCAA), is the oldest and the largest higher learning and research institution in

Ethiopia. The University is a pioneer in admitting students with disabilities and establishing disability support center. Hawassa University, located in Hawassa, the capital city of Southern Nations, Nationalities and Peoples Region. Although it was established in 2000 as a University, it had been operational starting with the college of Agriculture since 1976 and merged Wondogenet College of Forestry and Dilla College of Teacher Education and Health Sciences. Haramaya University is also one of the oldest universities located in Eastern Hararghe zone, Oromia region. The University was founded with the help of Oklahoma State University (OSU), admitting its first batch of students in 1954.

3.4. Sources of Data

Data for the study were gathered mainly from primary sources. The primary sources of data were undergraduate regular students with disabilities (students with visual, physical, and hearing impairments) who were learning in the sample public higher education institutions. In addition, coordinators or experts in Special Needs Support Office (SNSO)/Disability Resource Center (DRCs) of the three institutions were included in the study as key informants.

In addition, relevant literature pertaining to the focus of the study, existing national policies such as FDRE constitutions (1994), Education and Training Policy (1994), Special needs/Inclusive education strategy (2012), reports and statistics from Education Statistics Annual Abstracts and Education Sector Development Program (ESDP) documents, higher education proclamation and other international human right instruments were also extensively reviewed for the purpose of this study.

3.5. Population

All undergraduate students with disabilities (N = 530) who were learning in the three public Universities during the 2016/17 academic year constituted the population of the study (see Table 1 below). Of which the majority of them (312 =227 male and 85 female) were from Addis Ababa University. A total of 126 (87 male and 39 female) SWDs were from Hawassa University, while the remaining 92 SWDs (69 male and 23 female) were learning at Haramaya University. The statistics was obtained from the SNSO/DRC of the three universities.

The data from Table 1 also shows that Addis Ababa University is hosting the majority of students with disabilities. In terms of disability type, there were higher numbers of students with visual impairments followed by students with physical impairments. The number of students with hearing impairments at the universities was lower particularly in Hawassa and Haramaya Universities.

3.6. Sample and Sampling Technique

In order to draw the appropriate number of sample from the total population, Cochran (1977) correction formula for categorical data used by Bartlett, Kotrlik and Higgins (2001) was employed.

$$n1 = \frac{no}{(1 + no/N)}$$

Where: N- is the population size

no – required return sample size according to Cochran's formula = 384

n1 - required return sample size because sample >5% of population.

Therefore, the sample size (n) of the study was calculated as:

$$n1 = \frac{384}{1 + (384/530)}$$ therefore, n1 = **223**(i.e., 42% of the total population)

Table 1

Description of the Population and Samples

HEIs	Participants	Population			Sample size		
		M	**F**	***N***	**M**	**F**	***n***
AAU	SVI	94	42	136	35	15	50
	SPI	62	5	67	26	3	29
	SHI	71	38	109	28	12	40
	Sub- Total	**227**	**85**	**312**	**89**	**30**	**119**
Hawassa University	SVI	63	27	90	19	18	37
	SPI	22	11	33	17	7	24
	SHI	2	1	3	2	1	3
	Sub-Total	**87**	**39**	**126**	**38**	**26**	**64**
Haramaya University	SVI	50	14	64	24	6	30
	SPI	16	9	25	10	5	15
	SHI	3	-	3	3	-	3
	Sub-Total	**69**	**23**	**92**	**37**	**11**	**48**
	Grand Total	**383**	**147**	**530**	**164**	**67**	**231**

Note: SVI – Students with Visual Impairment, SPI - Students with Physical Impairment, SHI-Students with Hearing Impairment

While the minimum number of samples required was 223, the total number of samples included in the study was 231(44%). In order to select the sample respondents from the three disability groups, proportionate stratified random sampling technique was employed. The strata were formed on the basis of type of disability. Then, a simple random sampling procedure was performed to draw samples from each type of disability groups. However, the total population of students with hearing impairments in the two universities (Hawassa and Haramaya) was very small. Therefore, all of them were included in the study.

The qualitative data were obtained from 18 students with disabilities i.e., 6 students with visual impairments (two from each of the three universities), 6 students with physical impairment (two students from each of the three universities) and 6 students with hearing impairments (two from each of the universities) were selected and included in the study. In addition, a total of three heads/experts in the special needs support offices (SNSOs)/disability resource center (DRC) (one from each HEI) were included in the study as key informants with the aim to enrich data specifically on the practice and gaps in disability specific

institutional level policy frameworks and organization and provision of support services to SWDs. The respondents for the qualitative study were selected purposefully.

Table 2

Description of Qualitative Study Participants

University	Participant Code	Age	Sex	Department	Year level	Disability type
AAU	1	22	M	Sociology	1st	VI
	2	20	F	Social Work	2nd	VI
	3	21	M	Accounting	1st	PI
	4	25	M	Social work	3rd	PI
	5	20	F	Ethiopian Sign Language and Deaf culture	3rd	HI
	6	26	M	Accounting	3rd	HI
Hawassa	7	29	F	Journalism	2nd	VI
University	8	24	M	Sociology	3rd	VI
	9	21	F	Management	2nd	PI
	10	23	M	Construction Technology and Management	5th	PI
	11	22	M	Governance	2nd	HI
	12	21	M	Sport Science	2nd	HI
Haramaya	13	25	M	Law	4th	VI
University	14	20	F	Gender & Dev	2nd	VI
	15	19	M	Management	1st	PI
	16	23	F	Biology	3rd	PI
	17	20	M	SNIE	2nd	HI
	18	21	M	Computer Sc.	2nd	HI

Note: VI refers to Visual Impairment, PI refers to Physical impairment, HI refers to Hearing Impairment

For the purpose of anonymity and confidentiality of data of the qualitative participants, codes were assigned to them. Therefore, in this study participants were designated by numbers (i.e., participant 1, 2, 3…18). Moreover, key informant 1 was the senior SNE expert in the disability resource center at AAU, key informant 2 was head of the disability resource center at Hawassa University and key informant 3 was SNE expert in the office of special needs issues at Haramaya University.

3.7. Data Collection Instruments

Quantitative data were gathered using a self-administered questionnaire and two Interview guides were employed to generate qualitative data.

3.7.1. Questionnaire

A survey instrument that was used to collect quantitative data was a self-developed 5 point Likert scale questionnaire having four sub-scales. The sub-scales of the questionnaire were:

i. Academic Environment Experience sub-scale (AE);
ii. Social Environment Experience sub-scale (SE);
iii. Physical Environment Experience sub-scale (PE); and
iv. Policy Environment Experience sub-scales (POE).

Before developing the questionnaire, the researcher conducted a review of relevant studies on the experiences of students with disabilities to look for standardized questionnaire. However, no standardized instrument was obtained specifically related to the objectives of this study as far as the researchers experience is concerned.

Therefore, the survey instrument was developed based on extensive review of literatures related to the experiences of SWDs particularly in higher education setting. Instruments in studies on the situation of higher education students with disabilities in Ethiopia such as UNESCO (1997; 1999), Yared (2008) and Tirussew et al. (2014) were particularly consulted to construct valid items. Moreover, relevant items in the instruments of the reviewed studies and other related instruments such as College Student Experience Questionnaire (CSEQ), fourth edition which was developed by Pace and Kuh (1998) and Wabash National Study of Liberal Arts Education's Students Experience Survey, which was developed by the center of Inquiry in the Liberal Arts at Wabash College, USA were also reviewed and some items were adapted to the study context.

3.7.2. Item Generation Process

In order to pool items into the four experience dimensions, first what constitutes academic (AE), social (SE), physical (PE) and policy (POE) experiences was defined. Hence, AE dimension constitutes experiences in the teaching learning process, assessment and support services and accommodations. Similarly, SE was described by the social interaction and communication participants had with the university community i.e., faculty members, other students and administrative staffs and also the attitudinal environment.

As to the physical environment, accessibility of various buildings and facilities, roads, pathways and landscape, distance to and from different buildings, toilets and washrooms, and recreation areas were the major components identified. Similarly, the status of disability related policy and issues related to the implementation of policies, awareness and knowledge of students with disabilities about policy and related issues were outlined to structure items in policy environment experience dimension.

A series of steps were perused to develop the first draft of the questionnaire. After conducting a comprehensive review of literatures pertaining to students experience in higher education in general and students with disabilities in particular, a list of 109 likert type statements or items was produced. Then again, a careful and systematic review of the items in accordance with the objectives of the study was done and given to the supervisor of the study. Following the comments of the supervisor such as avoiding double barreled and redundant items, clarifying ambiguous items, and improving item brevity, about 9 items were removed as one question was irrelevant and other 8 were repetitions. Then, the first draft of a 5 point likert scale constituted a total of 100 items (47 items deals with academic experience, 30 items about social experience, 13 items about physical environment experience, and 10

items about experience in the policy environment) were developed and given for experts for validation of the instrument.

3.7.3. Validity

The first draft instrument was given to four senior experts in Addis Ababa University (one from school of Psychology and three from the Department of Special Needs Education). They were asked to evaluate each item for its relevance, clarity, redundancy, appropriateness and culture fairness so as to establish face and content validity of the instrument. This practice was instrumental in refining and making the questionnaire more valid.

Overall, suggestions were given to reject few items, to merge similar items and add some others. For example, 3 questions from academic experience dimension were rejected as they were not related to academic experience, 2 questions were moved to the social experience dimension, many others merged and 2 other questions were suggested to be added. In the social experience dimension, 4 questions were removed, 2 questions were merged as they were similar, and 3 new items were suggested to be included.

In the physical experience dimension, one question was split into two separate items, 2 items were merged since both focused on accessibility of toilet and 2 new items were also added. Finally, two items were rejected from the draft items of policy experience dimension, while a new item was added. Therefore, the second draft of the instrument that was distributed for the tryout was designed after incorporating the feedbacks. Hence, the scale constituted a total of 94 items (40 items related to AE, 30 items on SE, 15 items on PE, and 9 items on POE).

3.7.4. Reliability

The questionnaire was distributed to students with disabilities in Kotebe Metropolitan University for try out before the main study. The main purpose of the pilot test was to check the reliability of the instrument. Hence, a total of 40 students (15 students with visual impairments, 15 students with physical impairments and 10 students with hearing impairment) were included using convenience sampling method based on their willingness to participate in the pilot test.

In addition, participants of the pilot test were asked to give comment about the questionnaire. The major comment obtained was about the length of the questionnaire. They reported, up on returning the filled questionnaires, that they were frustrated by the number of questions in the scale. Furthermore, they were asked about the relevance of the items in describing their experiences. Most of them replied that the items were comprehensive and important in that respect. Finally, Chronbach alpha was calculated to see the internal consistency of the instrument and in general it was found to be acceptable level of reliability coefficient for the four sub-scales (see Table 3). Hence, the items were retained for the main study after making improvements on some of the items.

Table 3

Reliability Test Result of the Quantitative Instrument

No	Sub-scales	Pilot Study		Main Study	
		No. of Items	Cronbach Alpha	No. of Items	Cronbach Alpha
1.	Academic Environment Experiences (AE)	40	.80	40	.83
2.	Social Environment Experiences (SE)	30	.79	30	.83
3.	Physical Environment Experiences (PE)	15	.83	15	.88
4.	Policy Environment Experiences (POE)	9	.69	9	.77

Therefore, the final questionnaire that was administered to the main study had two sections. The first section consisted of questions related to respondent's demographic characteristics with the purpose of gathering background information about the participants like personal, family and university education backgrounds. The second section was a 5 point Likert scale survey instrument having four sub-scales.

From the total of 94 items distributed in the main study, 40 items measured the academic environment experiences in the scale ranging from 4 (True nearly all the time) to 0 (Never true), 30 items measured the social environment experiences in a scale ranging from 4 (Always) to 0 (Never), 15 items measured physical environment experiences in a scale ranging from 4 (Highly accessible) to 0 (Not accessible) and 9 items measured the policy environment experiences in a scale ranging from 4 (Strongly agree) to 0 (Strongly disagree). High mean scores on the scale shows student's desirable experience or the presence of more conducive and favorable environment, while low mean scores represent student's undesirable experience or the presence of more barriers in the environment.

3.7.5. Interview Guides

The qualitative part of this study aimed at examining and explaining the quantitative results on the experiences of students with disabilities. Interview method was used to collect qualitative data from the participants and disability support providers. Two interview guides were prepared; a semi-structured interview guide for undergraduate students with disabilities and unstructured interview guide for SNSO/DRC coordinators or experts in the three HIEs

The student's interview guide had two main parts. The first part consisted of questions to collect general demographic information from participants including the age, sex, university affiliation, disability type, age of onset of disability, department, year level and the second

part consisted questions and prompts related to the four dimensions of student experience that guide the face-to-face discussions. The interview questions were developed from pertinent literatures to the research problem and their relevance to elicit rich information to explain and understand results obtained from the quantitative phase.

3.8. Data Collection Procedure

Prior going to the field, a letter of cooperation from the Department of Special Needs Education, AAU was secured. Then, the sample universities were visited in two phases. During the first phase, the researcher discussed the reason for the field visits and presented a letter of cooperation to the concerned officials of the respective universities. As a result, permission was granted to collect data and also received the required support particularly from SNSO/DRC staffs in the sample universities. The quantitative data was also collected during this phase.

Upon distribution of the questionnaire, the sample respondents were briefed about the purpose and the desired outcomes of the study in collaboration with SNSO/DRC coordinators/experts and assistant data collectors to complete the questionnaire responsibly.

The questionnaire was distributed to a total of 231 participants. Quantitative data from students with visual impairment and physical/motor impairments were collected by the researcher and assistants. Each item in the questionnaire was read to the participants with visual impairments and the responses were filled by the data collectors. The researcher supervised the completeness of data upon return of the questionnaires. The researcher provided orientations to assistant data collectors about the purpose of the study and how they collect data from the respondents. Moreover, they were briefed about the essence of each item in the questionnaire so that they can adequately respond to questions from respondents.

During the second phase of the study, individual in-depth interview was conducted with 18 students with disability and three key informants to collect qualitative data. All face-to-face interviews with students with visual impairment and physical/motor impairments were conducted by the researcher with the support of assistants. Interview data from students with hearing impairments was collected by the researcher with the support of sign language interpreters. At AAU, interview sessions were carried out in a separate digital room which is reserved for students with visual impairment. At Hawassa University, interviews were conducted in the office of the head of the disability resource center. At Haramaya University, it was conducted in Gender, HIV/AIDS and Special Needs Directorate Office. Interview with key informants was conducted using unstructured interview guide.

Therefore, there were a total of 21 face-to-face individual interview sessions (i.e., seven in each university). The interview sessions with the individual respondents in the sample universities lasted an average of an hour. All interviews were conducted in Amharic language and were tape recorded with the consent of the participants of the study. Finally, the data was transcribed, translated into English language and organized into established themes for analysis.

3.9. Methods of Data Analysis

3.9.1. Quantitative Data Analysis

The quantitative data gathered was analyzed by using SPSS software package version 20. Both descriptive and inferential statistics were employed to analyze the collected data. Descriptive statistics such as percentage, frequency and mean was computed to describe the characteristics of data set in the demographic variables. Descriptive statistics was also used to compute the nature of experiences of students with disabilities in higher education. To

answer the questions related to determining the nature of experiences students with disabilities, a scale mid-value was used to determine the desirable (high) and undesirable (low) experience of students in the academic, social, physical, and policy environment. The scores of all participants of the study (n=231) was calculated to determine the nature of experiences in the four sub-scales. Correlation analysis was also made to see the relationship existed among the four dependent variables using Pearson product moment correlation.

In addition, to measure mean score differences in the four student experience dimensions across the selected independent variables, a multivariate analysis of variance (MANOVA) was conducted. Post-hoc group comparison was conducted using Tukey-HSD on the four variables resulted significant differences to identify the source of significant differences.

3.9.1.1. Assumptions of MANOVA

Preliminary assumption testing was performed to check the suitability of the data for MANOVA. Assumptions of MANOVA such as independence of observations, multivariate normality, linearity, multicollinearity, and homogeneity of variance-covariance matrices were tested. In general, the tests showed that there was no serious violation of those assumptions.

A. Independence of Observations

The samples of the study selected and the scores in the four dependent variables were obtained using random sampling procedures. Therefore, data are independent of one another, i.e. the measurement of one does not interfere or influenced by the measurement of others.

B. Multivariate Normality

Multivariate normality of distribution of scores was assessed using Kolmogorov-Smirnovtest (see appendix D). In addition, normal probability plot (Normal P-P Plot) was used to illustrate the normality of scores through graphical representations (see appendix E and F). In the present study, we can easily inspect from the Normal P-P plot that points line in a reasonably straight diagonal line from bottom left to top right for all dependent variables. This suggests that the assumption of normality was not violated.

3. Linearity

MANOVA assumes that there are linear relationships among all pairs of dependent variables, all pairs of covariates, and all dependent variable-covariate pairs in each cell. Therefore, when the relationship deviates from linearity, the power of the analysis will be compromised. Therefore, the presence of linearity or non-linearity was inspected using a matrix of scatter plots. It was noted that the plots appeared to be linear showing a reasonably straight line relationship between each pair of dependent variable (see appendix G) and do not show any clear evidence of non-linearity.

4. Multicollinearity

In order to use MANOVA as a statistical tool to examine the difference across combinations of dependent variables, the data should be checked for multicollinearity i.e., whether there is redundant dependent measures or not. To meet the assumption, the dependent variables should not have high correlation among themselves. The bivariate correlation was conducted and the coefficients indicated that the dependent variables correlated positively and they were not highly correlated with each other. This shows that the assumption of multicollinearity was not violated (Appendix H).

5. Homogeneity of variance-covariance matrix

The difference in the amount of variance in the dependent variables for each group was assessed using Box's test and Levene's test obtained from the MANOVA output. Box's test was used to assess homogeneity of covariance matrices. The *p* value obtained in the Box's test of equality of variance should not be less than 0.001 to meet the assumptions of homogeneity of covariance matrices. The obtained values of the independent variables were greater than or equal to the significance level. Hence, it shows no serious violation of assumption (see appendix I).

6. Homogeneity of Variance

Levene's test was used to check the assumption of equality of variance for the dependent variables. The significance level obtained should not be less than 0.05. The *p* value obtained from the Levene's test across all dependent variables was greater than .05 indicating that the assumptions of homogeneity of variance was not violated (see appendix J).

3.9.2. Qualitative Data Analysis

Qualitative data was generated from face-to-face interview method. The data gathered from 18 respondents was first transcribed verbatim in Amharic and then rewritten in English language. Thus, common responses of the cases (participants) were organized under the broader thematic categories and sub-categories. The themes and categories were derived from the quantitative results which were conducted during the first phase of the present study. Codes were assigned to individual cases to ensure anonymity and confidentiality of the data. Therefore, the narrations from the cases were presented thematically supported by quotations/individual phrases. The transcriptions of the interviews were also reread to identify any new or emerging themes that explain the experience of students with disabilities

during their study in higher education institutions. Finally, the entire findings obtained through quantitative and qualitative methods were mixed and interpreted at the data analysis phase.

3.10. Ethical Considerations

Regardless of the type of research conducted, research ethics is an important consideration. For the most part, issues of ethics focus on establishing safeguards that protects the rights of the participants. The traditional and often dominant issues that emerge when considering research ethics involve obtaining informed consent from participants, protecting them from harm, and ensuring confidentiality (Lodico, Spaulding, & Voegtle, 2010).

Accordingly, a letter of support was presented to the respective authorities of the three universities and approval was granted to conduct the study. Moreover, within the framework of ethical principles, SNSO/DRC staffs at the three universities were briefed about the intent of the study. In collaboration with the coordinators and experts, the target population of the study was oriented that the research undertaking was purely an academic work. Furthermore, the students were also briefed about the objectives of the study, participation is entirely dependent on their willingness and that they can withdraw when they feel uncomfortable. In addition, they were assured that their identity and information would be kept anonymous and confidential.

The researcher and experts in the SNSO/DRCs also explained the importance of participating in the study. Hence, the study was conducted after ensuring their consent to participate both in the survey and qualitative stages of the study.

CHAPTER FOUR

RESULTS

This section presents the findings/results of the study in line with the research questions. It begins by presenting the demographic descriptions and characteristics of the samples using descriptive statistics. Then, the quantitative findings were presented, while the qualitative results followed in sequence to elaborate the statistical findings.

4.1.Quantitative Results

4.1.1.Description of Participant Demographic Characteristics

A total of 231 sample SWDs participated in this study. The following table shows the frequency and percentage of the demographic characteristics of participants.

Table 4

Summary of Demographic Characteristics of Participants (n=231)

Background variables	Group	Frequency	Percent (%)
Gender	Male	164	71.0
	Female	67	29.0
	<= 21	89	38.5
Age	22 – 23	77	33.3
	24+	65	28.1
	Visual Impairment	117	50.6
Disability Type	Physical Impairment	68	29.4
	Hearing Impairment	46	19.9
Onset of disability	Before birth	34	14.7
	Afterbirth	197	85.3
University	Addis Ababa University	119	51.5
	Hawassa University	64	27.7
	Haramaya University	48	20.8
	Social science and humanities	100	43.3
	Education	21	9.1
College/faculty	Law	50	21.6
	FBE	19	8.2
	Science and Technology	41	17.7
	1st year	60	26
	2nd year	75	32.5
Year level	3rd year	70	30.3
	4th year and above	26	11.3

As depicted in Table 4, a total of 231 sample participants composed of three types of disabilities participated in this study. The majority of the samples were students with visual impairments (n = 117, 50.6%), while 29.4% (n = 68) were students with physical impairments and the remaining 19.9% (n = 46) were students with hearing impairment. As far as university affiliation is concerned, most of the samples (51.5%, n=119) were drawn from AAU, while the remaining samples i.e., 64 (27.7%) and 48 (20.8%) were taken from Hawassa and Haramaya Universities respectively.

It seems also that the gender gap between male and female students with disabilities in higher education was highly evident. As shown in Table 4, of the total 231 participants, 164 (71%) were male and 67 (29%) were female students with disability. It can also be noted that most of the participants were in their young age. About 71.86% of them were below the age of 23. The sample of SWDs had a mean age of 22.38 years. Regarding the age of onset of disability, it was found that the majority of participants, 197 (85.3%) reported that they had acquired the disability condition after birth and the remaining 34 (14.7%) reported that they acquired the disability condition before birth.

As to the stream wise distribution of participants the data in Table 4 shows that the majority of participants (82.2%) were from the social science fields i.e., Social Science and Humanities, Education, Law and FBE, while the remaining 17.7% were in the Natural Sciences and Technology. Finally, 26% of the participants were in their first year, 32.5% and 30.3% were in their second and third year respectively, while participants in fourth year and above constituted 11.3%.

4.1.2.Description of Participants' Family Background

Table 5

Summary of the Characteristics of Family Background

Family background	Level	Father		Mother	
		N	**%**	**N**	**%**
Education level	Illiterate	102	44.2	139	60.2
	Primary	48	20.8	48	20.8
	Secondary	50	21.6	35	15.2
	Tertiary	26	11.3	7	3.03
	Church Education	3	1.3	-	-
Occupation	Housewife	-	-	152	65.8
	Farmer	151	65.4	37	16.0
	Professional work	27	11.7	7	3.0
	Private work	42	18.2	35	15.15
	Missed	11	4.8	-	-

Average family income/month	Below 1000ETB*		1001-3000 ETB		3001-5000 ETB		5001-10000 ETB		Above 10000 ETB	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
	141	61.04	55	23.81	20	8.66	11	4.76	3	1.3

Note: - ETB refers to Ethiopian Birr*

Table 5 presents the summary of the family background of the participants. Data on the educational background of the parents of study participants indicated that majority of SWDs come from illiterate and less educated family background. For instance, most of the fathers (n = 102, 44.2%) and 60.2% (n = 139) of the mothers were illiterate.

Similarly, Table 5 indicates that most of the parents are engaged in low income generating occupational activities. The data illustrates that the majority (n = 151, 65.4%) of fathers are engaged in farming and 152 (65.8%) of mothers were housewives. This implies that most of SWDs come from lower socio-economic family backgrounds. This is also reflected in the responses of participants of their family's average monthly income. While the majority (n = 141, 61.04%) earn less than 1000 ETB per month.

4.2.The Nature of Experiences of SWDs in HEIs

The students' experience measuring scale consists of four experience sub-scales i.e. Academic Environment Experiences (AE); Social Environment Experiences (SE), Physical Environment Experiences (PE) and Policy Environment Experiences (POE). The nature of experience was analyzed using a descriptive statistics. Hence, the mean scores of participants in each of these dimensions were computed and the mid-scale value of each respective dimension was used to determine the nature of their experience.

Therefore, mean scores that is above the mid-scale value indicates that participants experience more of facilitators in the specific environment dimension and therefore it is a desirable experience. On the other hand, mean score that is below the mid-scale value indicates the presence of more of barriers in that specific environment dimension, which indicates undesirable experience. Moreover, frequencies and percentages were used to calculate the distribution of scores above, average, and below the mid-scale value.

4.2.1. The Nature of Experience in the Academic Environment

Academic Environment Experience (AE) was measured by 40 items. This means that in 40 items of a 5-point Likert scale the possible score ranges from 0(40 x 0 = 0) to 160 (40 x 4 = 160) and the mid-scale value of the scores becomes 80. The following table presents the descriptive statistics of participants' experience in AE dimension. In addition, these descriptive statistics was computed for participants' scores in each of the three disability groups.

Table 6

Descriptive Statistics of the Nature of Experiences in AE Dimension

DV	Disability types	N	Mean	SD	Minimum	Maximum
AE	VI	117	68.56	16.51	29.00	102.00
	PI	68	72.07	18.47	30.00	115.00
	HI	46	71.09	19.19	26.00	118.00
	SWDs as a pool	**231**	**70.10**	**17.65**	**26.00**	**118.00**

Note: Mid-scale value for AE = 80, N-number of participants, SD- Standard Deviation

As shown in Table 6, the score of participants in AE dimension ranged from 26 to 118. Since, the overall academic experience of students with disabilities mean score (*M* = 70.1 and *SD* = 17.65) was less than the mid-scale value (80), the experiences of most participants was undesirable.

Table 7

Frequency Distribution and Percentage of Participants' Scores in AE dimension

Participants	Above mid-scale value		Average score		Below mid-scale value	
	N	%	N	%	N	%
VI	29	24.80	4	3.49	84	71.79
PI	22	32.35	0	0	46	67.65
HI	15	32.61	0	0	31	67.39
SWDs as Pool	**66**	**28.6**	**4**	**1.73**	**161**	**69.7**

Note: Mid-scale value for AE = 80

The frequency result shown in Table 7 also indicated that, of the total samples (n = 231), the majority of participants (69.7%) had scores below the mid-scale value, indicating that participants experience was undesirable, while 28.6% participants seemed to have a desirable academic experience since their score was above the mid-scale value. The descriptive statistics result across the three groups of participant also showed that the majority (71.79%) of students with visual impairment, 67.65% and 67.39% of students with physical and hearing impairments respectively regarded their academic experience as undesirable since the

mean scores were found to be below the mid-scale value. Generally, the finding revealed that participants were experiencing more of barriers in the academic environment, indicating undesirable experience.

A qualitative study using interview method was used in order to explain why the experience of most participants in the academic environment was found to be undesirable in the quantitative study. The findings of the qualitative study in this sub-scale were analyzed in three interrelated sub-themes that define academic experience, teaching-learning process, the assessment methods and strategies employed and the support services and accommodations. In confirming the quantitative finding, the academic environment was perceived by interview participant students as the least enabling environment. The result indicated that the students' experience was influenced by a wide range of barriers in the academic environment. Below the experiences of SWDs in the three sub-themes identified is presented to further explain the major factors for undesirable academic experience.

Experiences in Teaching Learning Process

The results revealed that the special educational needs of students with disabilities were largely unmet in the teaching learning process. The participants believed that their participation and engagement in learning activities such as in attending lectures, participation in class discussions, questioning and answering and group activities was constrained by unresponsive academic environment. Participant students felt that teaching learning practices were more exclusionary for SWDs and depriving equal participation in learning experiences with peers without disabilities.

The major influencing factors that contributed to the problems of accommodation come from, as reported by the participants, lack of teachers' understanding about the special educational needs and knowledge to provide need based support to SWDs, negative attitude of university community and less willingness of teachers to take extra effort to use alternative accommodation strategies during instruction and examination.

Regarding participation in the classroom, SWDs clearly indicated that they have the desire and ability to participate in every class activities like classmates without disabilities. However, they were not participating actively as the level they wanted to participate due to these confounding factors in the learning environment. Furthermore, participants reported that most teachers use teaching methods that did not address their needs. These includes, course contents were not modified, lecturing in a speed that some SWDs couldn't catch up, use teaching materials such as power point presentations without considering their needs, and absence of alternative teaching methods, assessment, and assistive technology. For example, students with hearing impairment reported that teachers more often use teaching methods that favors hearing students.

> *I face challenges when some teachers use power point presentations. It is difficult for me to follow teachers and watch the slides at the same time. Besides, the speed of teachers is difficult for me to take notes form the slide. So, what I do is I try to follow the lecture and read handouts or copy the note later from my classmates.* (Participant 17, a male deaf student at Harmaya University)

Lack of classroom assistants such as sign language interpreter and note takers exacerbated the challenges of SWDs encounter in participating equally and benefit from various classroom academic activities. As to lack of assistants, for example,

> *Despite my wish to participate in classroom discussions, ask and answer questions like other students, I hardly do it because of barriers in communication. All my teachers are*

hearing and there is no sign language interpreter. I depend on lip reading and text reading. (Participant 6, male deaf student at AAU)

From the experience of participant 5, however, it was evident that the presence of multi-lingual teachers and sign language interpreter was highly instrumental for equal and active participation in various academic activities. Except participant 5, other participants from the three universities reported that their participation in various academic activities is not the same as their hearing peers due to absence of such accommodations.

I did not receive any special support in the classroom for the last three years. I have been given with course handouts as hearings students. I even asked my teachers to give me handouts in advance so that I will be ready for lectures. But, they are not willing to do the simplest thing that they can provide for a deaf student like me. (Participant 6, deaf student, AAU)

Learning and taking examination in accessible classrooms was the special educational need all students with physical disabilities required to be accommodated. However, the relationship of attitudinal problem and this accommodation was also reflected in their experiences. Classrooms were assigned in inaccessible buildings that do not have accessible structural features such as ramps and elevator coupled with less willingness of most teachers to relocate classrooms greatly influenced the students' academic progress in their institutions. The influence was expressed in terms of getting tired, missing lecture and exams and sometimes experience health problems. Scheduling classrooms for lecture and examination was another challenge reported that showed lack of attention about the needs of SWDs. Priority accommodation to accessible classroom for these academic activities was barely seen.

Last year, for example, all the classes were assigned in upper levels of the buildings. I asked teachers for relocation. But, the situation continued without a change. I don't want to miss lectures. So, I leave my wheelchair in the ground and climb up the stairs with my hand. In addition to my disability, I have a kidney problem. It is tiresome and painful both physically and psychologically. Very recently, I saw a student who use wheelchair carried by four students to attend lecture. I felt so sad and angry at the same time. I always wonder what teachers feel when they see us struggling and facing this kind of difficulties. Relocating classes to the ground floor is a very simple, but a big solution for us. (Participant 9, female student with physical impairment at Hawassa University)

Participants reported yet another indicator for negative attitude of teachers that had immense potential in their participation in education. That was encouragement and motivation. It was noted in the study that SWDs looked very much in need of their teachers' encouragement and attention. The role of encouragement was described by Participant 7. She said that *"I feel happy when teachers ask me whether I am following lectures or not and the challenges I am facing in my education. It motivates me to learn."* Nevertheless, most participants suggested that it is something that they never heard and an aspect of higher education culture that they needed to see changed.

Teachers' lack of concern and attention, as part of attitudinal factor, was also reflected on the nature of assignment teachers give and the extent of involvement of SWDs in these learning activities. For example, participant 8 reported that *"most group assignments require us to write, submit papers and present. So I remain passive because I cannot write, read and present text. Teachers do not use alternative methods."* Participants also perceived that other students without disability show discomfort in working with them on group works and assignments due to attitudinal problem. In both ways, SWDs felt discriminated in different classroom academic tasks.

Although attitudinal factor dominated, problems in academic accommodation were also attributed to lack of skill and knowledge of teachers.

> *I think some of my teachers have awareness about the issue of disability and they try to support me. However, I see them confused of what to do. The language problem is also a factor that restricts communication.* (Participant 18, Deaf student at Haramaya University)

Lack of appropriate disability specific reasonable accommodation and support has a number of consequences to SWDs. It ranged from dissatisfaction with their learning, experiencing academic stress that resulted from feelings of not acquiring the required knowledge and getting lower grade in exams to a fear of getting dismissed from college. For this reason, SWDs tend to change departments that are perceived had required less academic rigor and a relatively better support. Participant 11, for example, was forced to change a field of study that he wanted to pursue in higher education. He reported that:

> *I joined the university in 2015/16 academic year in engineering department. I learned one year but I didn't want to continue learning in the department because I did not get any kind of support. It was not totally accessible for me to learn equally with other students. Therefore, I applied to change department and it was accepted by the university and I joined the department of Governance and Development in this academic year.* (Male deaf student, Hawassa University)

As to enabling factors with regards to academic accommodations, some students with visual impairments reported opportunities in recording of lectures in the classroom, getting soft copies of handouts, and extra-time for exams. Extra-time accommodation in exams was found to be executed uniformly across sample universities while other services were not. Nonetheless, academic accommodations for students with hearing and physical impairment were scarce.

Assessment Experiences

Participants of the study viewed assessment, evaluation and grades as central to their learning and decisive part of their higher education experience. It was noted that they encountered a wide range of barriers in assessment and also perceived as a factor for low academic experience in higher education. The most frequently cited constraints in assessment were related to the inaccessible physical setting, absence of alternative assessment mode and accommodations, and problems with assistants.

With respect to problems with the physical setting (location), students with visual and physical impairments were more affected. All participants with visual impairment revealed that they were taking examinations in open spaces such as verandas, hallways or corridors of classroom buildings. It was pointed out that their experience in assessment is a clear picture of a disabling environment of higher education institutions. Taking exams in such places exposed them for different environmental conditions such as hot and cold weather conditions and sound destruction which highly influenced their performance in exams. Besides, it is a source of academic stress and psychological despair. In relation to exposure to different weather conditions, participant 2 recalled situations where she was confronted with very cold weather from heavy rain while taking examination in corridor of the classroom building when she was a first year student. In addition, she further said that *"all the readers had to be loud due to the high sound of the rain and we were unable to hear the readers clearly until the rain stops."* The impact of weather conditions was found to be two fold. On one hand, it affects the physical comfort and attention of students with visual impairment and their readers and the student's exam performance and grade on the other. For Participant 14, it is a barrier that was overlooked by others but had a huge impact and said that *"exam readers do*

not have a patience to stay until the end of exam time. So, they tend to read quickly and put us under intense pressure."

The major barrier students with physical disabilities experience in assessment was associated with accessibility of the physical and built environment. Assignment of exam rooms in the upper floors of classroom buildings, inaccessible roads and walkways that restrict easy movement and long distance from dorm to exam rooms which requires longer time, absence of accessible toilet were the major ones. Participant 9 recalled a situation when she was a first year student and said *"…the road that takes to the exam room was under massive reconstruction and I couldn't move my wheelchair. So, I missed a classroom test of Civics and Ethics course."*

Participants with hearing impairment on their part reported yet another challenge that usually go unnoticed by teachers and invigilators during examinations. Whenever there were errors on instructions or questions of the exam booklet, teachers or invigilators verbally read the errors and dictate students to make corrections. Hence, teachers or invigilators were required to write corrections on the board or give corrections individually for students with hearing impairment.

Alternative assessment techniques were found to be limited. Mid and final examinations were raised as assessment practices often used by teachers. Classroom tests, individual and group assignments was also used as a continuous assessment practice. However, participants argued that the purpose of assignments was not to help students to learn independently or in group but rather as a tool to compensate lecture time that teachers did not use properly.

Teachers do not start teaching early and often miss classes. However, they bombard us with lots of assignments towards the end of the semester with the aim to finish the contents of the courses within a short period of time. (Participant 5, female deaf student, AAU)

Therefore, participants considered it as one of the major source of academic stress and a factor for poor academic outcomes. Furthermore, examination and evaluation practices did not consider the special educational needs of SWDs. Examinations and assignments are entirely based on written form and evaluated with the same referencing system. It was not a different examination or evaluation criteria that the participants claimed, but the question of fairness was frequently raised that subjected participants to perceive discrimination. It was paradox for them to expect the same outcome, while the level of the playing field at the universities is quite different. In addition to limited classroom accommodation, absence of alternative assessment modes and techniques perpetuate SWDs academic challenges through limiting demonstration of their learning in alternative mode.

I wonder why examinations are not delivered electronically. If we take exams in a computer, It would have been very useful and keep us from difficulty that we are facing in finding readers and scribes and many problems associated with such assistants. (Participant 1, a male student with visual impairment at AAU)

The quality and personal behavior of exam readers was another major obstacle that affected their performance in exams and education in general. With regards to the quality of readers, limited knowledge on technical terms of certain courses and poor language skill and reading ability such as mispronunciations were also reported as a confounding factor. In addition to the problem of pronunciation of readers, some question or part (s) of exams may be left unread. Participant 2 and 7 reported a similar incident.

I was taking a final exam and there were lists of questions at the back of the question paper which the reader did not see them just out of carelessness and need to finish the job within a short period of time. So, I missed the marks of those questions. I also recently heard the same thing on a student with visual impairment in the department of Sociology where the reader missed six questions. Isn't it disappointing? (Participant 7, female student with visual impairment, Hawassa University)

It was found out that leaving some questions unanswered is not only related to poor quality of readers and scribes but also linked to personal behavior and attitude of readers. The main reason for such incidents, participant 13 explained that *"...getting money is their priority. I am not saying that all readers are the same. But, some of them do not care about the feelings and needs of students with visual impairments."*

On the other hand, participants with visual impairment reported the provision of extra-time accommodation in exams and flexibility of some teachers in accommodating their needs through using alternative assessment modes. On the use of alternative assessment modes, however, some participants such as participant 8, 13 and 17 reported access to the support from some teachers. Participant 8, for example, said:

Sometimes teachers give us quiz or classroom tests or there may be open book tests. So, other sighted students can read and answer questions. At this moment we cannot get readers. So, our teachers change and substitute in the form of assignment. (Participant 8, a male student with visual impairment at Hawassa University)

In line with issues of assessment, participants were asked whether their special educational needs were formally assessed for support provisions and learning accommodations or not. It was found that the available support services were not informed by assessment practices for identifying learning and accommodation needs of students with disabilities.

Experiences in Support Services

Qualitative study participants had a mixed feeling over provisions of support services in their institutions. Some students regarded the role the available support played in their education and others were more skeptical. Overall, however, it was clearly evident from the study that SWDs lack quality, relevant and adequate support services that would have contributed to successful academic integration in higher education. As reported by the participants, the challenges presented below were part of impediment for undesirable academic experience.

As indicated earlier, lack of curricular adjustments and classroom support is the frequently raised source of undesirable experience. Absence and insufficient provision of support services that matched their requirements were also reported as additional constraints to their equal participation and success. For instance, students with visual impairment indicated that provisions of learning materials such as Braille papers, slate and stylus played indispensible role in their education. However, taking the course load they took in a semester and the assignments in each course into account, the Braille papers were in adequate. Moreover, slate, stylus and recorders were provided on a lone basis and a challenge comes when these learning materials become either dysfunctional or get lost. It was noted that the challenges students experience had implication on their education and expose them for additional costs.

Allowance for SWDs was another form of support that was formally provided by the respective institutions of higher education through special needs support offices. Moreover, SWDs particularly students with visual impairment had access to financial assistance to recruit human assistants i.e., text and exam readers and scribes. Participant students revealed

that it was a great opportunity to have access to financial support at their universities. They believed that perusing and persisting in higher education without the support would have been difficult as they cannot afford to cover their personal basic needs and expense related to their education since the majority come from poor socio-economic background. However, the amount of money was found to be insufficient to cover all expenses related to their disability, personal and academic costs. Taking the additional needs of students with disabilities and the ever increasing cost of goods, materials and services into consideration, the amount of the financial grant was insufficient. Almost all SWDs reported that despite their enormous desire to have personal lap top, for instance, the financial constraint was reported as a limiting factor.

The presence of computers and free internet services were perceived by participants as the most important opportunity in their study. However, several challenges also reported in relation to inadequacy of the service including shortage and limited space of computer rooms, shortage of computers proportional to the number of SWDs, malfunction of computers and lack of timely maintenance, and intermittent interruption of electricity and network signal. Another service that was offered to students with disabilities was photocopy and printing services. Photocopy and printing services were offered to students at the disability resource centers. In the same way, the majority of participants reported that the amount of documents that they were able to copy and print in a semester was inadequate when compared to the number of courses and the amount of learning materials such as handouts of each course in a semester and assignments and projects they had to submit. This caused them to use the services outside of the campus, which was expensive for most participants.

Another support required by some students with disabilities was the provision of need based assistive devices such as manual and electronic wheelchair, crutch, cane, and hearing aid. It was reported by the participants that these services were either not available or inadequate. The importance of these appliances is reported beneficial not only to facilitate their inclusion in education but also for independence and everyday life.

> *I depend on wheelchair for mobility. My request for wheelchair service since the beginning of the year is not addressed. So, I am forced to use artificial prosthesis. But, I couldn't use it for longer time because I became exhausted and feel pain in my leg as abrasion and infection occur due to friction between the prosthesis and my leg. I missed class for one week until I got well. Sitting in the library for long period of time was also difficult for me as I feel burn in my leg. So, I had to leave early.* (Participant 3, male student with physical impairment at AAU)

According to participants, delays in service provision were another challenge they experienced in addition to shortage of such devices. In this respect, some of the assistive devices requested by the students were not provided at all or provided long after their request. This in fact makes the student's question of fairness legitimate since it affected their independence and equal participation in education. The story of participant 9 reflects the importance of assistive devices and the challenge students with disabilities may experience due to delays in provision of the service.

> *During the first few months of the first year, I was using my hand to move from place to place including classroom. I had classes in the morning and in the afternoon as well and my hand began to swell and hurt. I was on the verge of quitting my education and return home. Even though I had requested the university to facilitate the provision of wheelchair, I did not get the support. Then, I went to Cheshire Home Service in Hawassa with the help of my friend and requested a wheelchair support. The response was immediate. I sincerely thank the NGO and my friend for easing my life and helping me to continue my education.* (A female student with physical impairment)

In line with problems of untimely service provision, access to timely information was also reported as another barrier by participant students. Campus wide information and notices, academic information from colleges, departments and faculty members hardly reach on time for SWDs. Rather getting information from friends informally was reported as a main channel of information.

It was also evident in the study that not only inadequacy of services was reported as a challenge but also SWDs revealed absence of some services. Provisions as instructional accommodation, specialized assistive devices, learning materials, and support from human assistants such as sign language interpreter, wheelchair driver, and note takers was mostly unavailable in the institutions. It appeared, from the responses of participant students and key informants, specialized assistive technologies were yet to be introduced to higher education disability support scheme of higher education institutions.

In general, students with disabilities experience a wide spectrum of challenges with regard to lack of diverse, appropriate and adequate support services. The cumulative effect, according to the participants, includes relying on friends, making extra-effort, time and money to manage the problems and cope with the demands of the learning environment. The barriers in support services, therefore, were perceived as part of a disabling factor in the academic environment.

4.2.2. The Nature of Experience in the Social Environment

Social Environment Experience (SE) of participants was measured by 30 items. This means that in 30 items of a 5-point Likert scale the possible score ranges from 0(30 x 0 = 0) to 120 (30 x 4 = 120) and the mid-scale value of the scores becomes 60 (120/2).

Table 8

Descriptive Statistics of the Nature of Experiences in SE Dimension

DV	Disability types	N	Mean	SD	Minimum	Maximum
SE	VI	117	60.62	14.61	23.00	96.00
	PI	68	58.15	15.12	28.00	94.00
	HI	46	56.15	13.67	14.00	88.00
	SWDs as a pool	**231**	**59.00**	**14.63**	**14.00**	**96.00**

Note: Mid-scale value for SE = 60

As shown in Table 8, the overall score of SWDs in SE dimension ranged from 14 to 96. The overall social experience of participants mean score (M = 59) is slightly less than the mid-scale value (60). The result revealed that although, in general, the experience of most students with disabilities is undesirable, a significant number of participants had mean scores above the mid-point of the measurement scale. The result also revealed that students with hearing impairments experience more barriers than students with physical and visual impairment with the overall mean score of 56.15.

Table 9

Frequency Distribution and Percentage of Participants' Scores in SE dimension

Participants	Above mid-scale value		Average scores		Below mid-scale value	
	N	%	N	%	N	%
VI	56	47.86	1	0.85	60	51.28
PI	31	45.59	1	1.47	36	52.94
HI	19	41.30	1	2.17	26	56.52
SWDs as Pool	**106**	**45.9**	**3**	**1.3**	**122**	**52.81**

Note: Mid-scale value for SE = 60

The frequency result shown in Table 9 also indicated that 45.9% (n=106) participants had scores above the mid-scale value indicating that they had more of a desirable social experience. However, most students with disabilities (52.81%, n = 122) had scores below the mid-scale value showing undesirable social experience. When we look at the descriptive

statistics result of participants in the three disability groups, most of students with hearing impairment (56.52%, n=26) had a negative social experience than students with physical (52.94%, n=36) and visual impairment (51.28%, n=60).

Although positive social experience was reported by some interview participants, the qualitative result showed that the social environment were segregating and had multifaceted consequence in many areas of student experience. In the social experience dimension of the qualitative study, three sub-themes (i.e., social experiences with faculty members, students and administrative staff) were developed to explain the finding of the overall social experiences of SWDs in higher education through a quantitative study.

Social Experience with faculty members

Despite the significant impact of teacher-student relationship on the psycho-social developments of students with disabilities, most participant students of the study felt that the challenges they experienced in their interaction with teachers and academic environment is originated mainly from lack of understanding of the special educational needs of SWDs and negative attitude of most teachers. In response to indicators of teacher actions or behaviors for perceived challenges, the majority of participants reported that most of their teachers did not interact with them, ask about their educational and accommodation needs, show willingness to listen and solve student's problems and provide instructional and exam accommodations. For example,

> *There is an old saying in our country that says 'teachers are like fathers'. This works in primary and secondary schools, but not in the university. My teachers in the lower level were very understanding and encouraging. Most of the teachers at the university rather avoid interactions with us and do not give time to listen and communicate.* (Participant 1, male SVI, AAU)

Another participant even questioned the role of teachers in higher education.

> *I don't think the role of teachers is only to teach in the classroom, setout exams, test students and correct and give grades. They have to understand that we are learning through different challenges. But, I haven't seen them being concerned about the student's feelings and needs. They are not ready to support and solve our educational problems. Rather they tend to avoid themselves from hearing and solving our problems.* (Participant 9, female student with physical impairment at Hawassa University)

When asked about educational needs that were not addressed as a result of her teacher's lack of willingness, she further stated that:

> *Last year, I missed a classroom test because the road to the exam room was blocked and I couldn't move my wheelchair. I went to the teacher's office and told the reason. But, he refused to accept the reason. What is more shocking for me at the moment was he blamed me and considers it as a deliberate act. The situation affected me in two ways, I have got a 'C' grade and emotionally I felt sad and disappointed.*

In contrast, the importance of faculty member's positive attitude, behavior and encouragement for the positive relationships, motivation and student's self-confidence was vividly evident in the study.

> *I have a good relationship with most of my teachers in my department (Journalism) because they encourage me to participate in classroom discussions. They advised us to learn and study hard and follow the footsteps of prominent Blind journalists such as Tewodros Tsegaye, a vibrant Journalist who is the host of 'Riot' television program on EBS TV and others as an example.* (Participant 7, female student with visual impairment at Hawassa University)

Nevertheless, this was not the case for the majority of the participants. In addition to lack of willingness, lack of knowledge about the type of accommodation needed and how to provide support and accommodate the needs of SWDs is also affecting the positive experiences of the students. In this regard, another student stated that:

I feel some teachers have concern about students with visual impairment. Sometimes, particularly during assignments and group works, they ask me whether the assignment is convenient for me or not. Not knowing how to support is a barrier for teachers to communicate with students with visual impairment. (Participant 13, male student with visual impairment at Haramaya University)

Some deaf students linked the problems in social interaction with members of the campus community to barriers in language and absence of sign language interpreter. In account of distant interaction with teachers, however, most participants claimed the underlying negative attitude of most faculty members that is observed through their behavior and actions. Most teachers seemed to avoid interpersonal relationships and communication with students with disabilities. Lack of motivation, encouragement and assistance from their teachers discouraged the students from approaching and asking teacher for support and accommodations.

In addition, participants believed that faculty members show actions of low expectations for students with disabilities. In this regard, most participants indicated that they have never been appreciated, assigned them to coordinate activities or given any responsibilities in and outside of the classroom by faculty members. Participants also indicated that refusal to appoint students with disabilities to class representation or lead small groups was also evident in peers without disabilities. As to the perceived low expectations of faculty members, one student reported that:

One day I went to the faculty dean of FBE campus to request some services including sign language interpreter. With a sense of surprise, I was asked how I joined the department and persisted. For me, this clearly shows low expectation. I think there is an established belief that SWDs cannot cope up with the academic standard of Faculty of Business and Economics campus. (Participant 6, Deaf student at AAU)

In general, a gap in interaction and interpersonal communication was noted between SWDs and faculty members. Perceived negative attitude of teachers, for most participants, was related to the barriers they experience in academic and physical environment as well since it leads them to be covert to interact with teachers, to disclose educational challenges and needs, and ask for support.

Social experiences with other students

The qualitative study reported that students had mixed feelings on the social interactions of SWDs with other students (with and without disabilities) in their campus. Some participants view their interactions with other students positively and others not. On a positive note, participants who had satisfactory social interaction with other students consider it as a very important factor in their persistence in higher education. Positive experience was expressed in terms of having friends with and without disabilities and getting personal and educational assistance. However, a sense of acceptance and belongingness to the campus environment and improved self-confidence was the most important outcomes reported by these students. The role of friendship for SWDs was expressed in the story of participant 9. She explained that:

> *I have friends both with and without disabilities and I am very happy having them. But, my best and close friend is a female student without disability. She always cares for me and pushes my wheelchair. It is a great opportunity to have friends because I don't feel alienated and lonely in the campus. I am also able to go outside of the campus. I don't know what I would do if I didn't have them. I am sure that it would have been stressful. I can say that they are my energy.* (A female student with physical disability at Hawassa University)

Students with visual impairments at AAU and Hawassa (Participant 1 and 8), although reported better relationships with students without disabilities, they ascertained the existence of ample indications of negative attitude from other students without disabilities that influenced the inclusion of SWDs. Indeed, the interview result showed that the majority of students with disabilities hardly interact with peers without disabilities.

Participants with hearing impairment, for example, reported that having hearing friends and being a friend for them is not often a reality. Language barrier was attributed to the problem by most participants with hearing impairment. Acknowledging the difference in language system as a challenge, other participants with hearing impairment also believed that attitudinal problems of hearing students contributed for the poor social interactions. Participant 5, for example, reported that her friends are only students with hearing impairment. This is because, she said that, "I don't think most of hearing students want to be friends with us since I have never seen them greeting us or try to communicate." Some students with visual and physical impairments also linked the social problem mainly to a general negative attitude towards disability and very low perception they have towards the ability of students with disabilities.

Participant students argued that the negative attitude of peers without disabilities prevailed in situations where they had to work in groups and discussions both in and outside classroom activities. Most participants felt that students without disabilities are uncomfortable to work with students with disabilities and did not require their participation and contributions to group activities and discussions. In this regard, participant 17 stated that *"in most cases, other students do not want my contribution in group assignments. They do all the assignments and submit to the teachers including my name in the list of group members."*

This practice was shared by other participants in the three universities as well. The least that was required from students with disabilities in such activities were to share the cost for writing, printing and binding group assignments. Participant 7, for instance, reported similar experience and said that:

> *Sighted group members have lower expectations for SWDs and they don't believe that we can do the assignments equally. I don't have any other reason for the discrimination and discomfort other students show to work with us except attitudinal problem.* (A student with visual impairment from Hawassa University)

As part of student life and relationships among students in higher education institutions, the experiences of students with disabilities with respect to relationships with opposite sex students were also examined through interview. Generally, the participants reported that such relationships between opposite sex members of students with and without disabilities are hardly seen in the campus environment. The majority of the participants also revealed that they did not have such relationships in the campus, while two of them reported that they had involved in romantic relationships with students who have a similar type of disability in the past. Most of the students indicated that they never thought of having romantic relationships with other students particularly with peers without disabilities. The most emerged reason was giving priority to their education than spending time in dating. Some students, on the other hand, openly said that the attitudinal environment puts both students with and without disabilities in a position to feel unease. They further indicated that students with disabilities prefer to involve with members from the same disability group. The reason given by one student clearly exemplifies the influence of attitudinal factor.

> *In my case, I don't have such a relationship in the campus. But, I sometimes encountered challenges in this regard. As you can see I am partially sighted but my eye looks sighted for other peoples. Therefore, some students tried to approach me with the*

intention to start romantic relationship. But, at the moment they came to know that I am partially blind they tend to run away and say sorry. It is upsetting for me and for this reason I don't want to have such relationships. I want to focus on my education for the time being.

Another barrier that SWDs encountered as a result of undesirable social interaction with other students were lack of timely information related to both academic and non-academic issues. For example, missing lecture when classrooms are changed without being informed is often occurs.

Social relationship with administrative staff

The nature of interaction and communication between SWDs and administrative staff was also reported as similar to the pattern of student-teacher communication. The major problems reported in this regard were most of these administrative staff were not welcoming and concerned about the needs of SWDs, do not respond to the students request adequately and timely or not at all, lack awareness about the special educational needs of students with disabilities. The key informants in the three universities, however, indicated that although there were a number of challenges that influenced the efforts of creating enabling environment, progress have been noted in giving attention to the issues of SWDs from time to time.

With regards to delay in responding to the educational needs of SWDs, students with physical disability reported that their request for relocation of lecture and exam room to the ground floor and the request for disability related support was either not replied or delayed. Participant 3 and 9 reported that though they requested the provision of wheelchair during the first semester of year one, it was not delivered. Participant 3, for example said that *"I requested a wheelchair support during the first semester. I was told that the service will be*

delivered. But, this year is almost over and I am hoping that it will be realized next year." Participant 9 on her part said:

> *I applied to the disability center for a wheelchair support. The center forwarded my application to the management. But, I cannot wait long due to the severity of my problem. So, I managed to get wheelchair from a local NGO in Hawassa.*

Again, for most participants, such behavior and actions of administrative staff is rooted in the underlying attitudinal problem. For example, participant 6 strongly argued that he experienced discrimination in his education not only out of lack of awareness about the needs of SWDs but also the negative attitude a major factor. He supported his argument by stating that:

> *I have been reporting the academic challenges I am facing and requested the department for assignment of sign language interpreter. The response I received from the department was very disappointing. At one time, I was told that "you are the only deaf student in the department and if a sign language interpreter is present in the classroom, the attention of other students will be drawn and disturbs the class." On another time, I was told that "the interpreter to be assigned should have educational background in accounting. We cannot assign an interpreter whose field of study is not accounting.* (A Deaf student at AAU)

A situation where students with hearing impairment in AAU described it as 'paradox' was reported that contradicts the statements of the informants about university administrations giving attention to disability issues. They indicated that most administrative staffs were not willing to communicate with deaf students unless they go with sign language interpreter in spite of the responsibility of the management to meet their special needs with the provision of interpreters. As a result, participant 5 said that *"we mostly fail to get the services from administrative offices."* Participant 10 also added that *"if the administration*

was concerned, the challenges we are facing in attending lectures in upper floor and the pain and extreme fatigue we experience due to long distance between buildings would have been solved."

Overall, participant students had better interpersonal communication and relation with SNSO/DRC staffs, student cafeterias, libraries, dormitories, and campus guards, while they had distant interaction with most of administrative staff and the leadership of the institutions.

Participation in Extra-curricular Activities

Participation in a wide range of extra-curricular activities is highly significant for the student's personal, academic, psycho-social growth. Nevertheless, the qualitative study bear out that most of the participants didn't participate in extra-curricular activities in their campuses.

Mobility problem and physical inaccessibility, lack of adequate information about extra-curricular clubs and their activities, lack of interest to participate in such activities, fear of discrimination and stigma on the basis of their disability, difficulty with adjusting with campus life, giving priority for learning and studying due to fear of dismissal caused by high academic competition with peers without disability and limited effort from the clubs and the university to encourage SWDs in such activities were the reasons reported by SWDs for non-participation. Lack of effective and efficient communication method was also noted as a reason for non participation for deaf students. Participant 5, for example, reported that *"I prefer to go to church to attend spiritual education since there is a sign language interpreter."*

SWDs who participated in extra-curricular activities, however, reported advantages in many areas of student life in and outside of the campus. These includes developing important

skills such as communication and social skills, job skill, meeting with new peoples and interaction with community members in and off campus, rewarded with certificates of appreciations and recognition for participation.

> *…. creates an opportunity for me to meet with different peoples such as university officials, members of administrative staff, student affairs, student's council, etc and other students in the campus. I am able to meet with new peoples in different governmental and non-governmental organizations in the city when we go out for field work related to clubs' activities. So, it helped me to know about work, to develop communication skill, to have better social interaction and to be aware of different offices and locations within and outside of the campus.* (Participant 8, a student with visual impairment, Hawassa University)

Overall, interaction, communication and receiving support they needed from students, academic and administrative staff that are part of student experience were more difficult for most participants as a result of weak social relationships and perceived negative attitude of others. Consequently, these students felt that they were unaccepted and unwanted in their campuses.

4.2.3. The Nature of Experience in the Physical Environment

The Physical Environment Experience (PE) sub-scale was measured by 15 items. This means in 15 items of a 5-point Likert scale the possible score ranges from 0(15 x 0 = 0) to 60 (15 x 4 = 60) and the mid-scale value of the scores in a distribution becomes 30 (60/2). The results of the descriptive statistics are presented below.

Table 10

Descriptive Statistics of the Nature of Experience in PE Dimension

DV	Disability types	N	Mean	SD	Minimum	Maximum
PE	VI	117	26.68	8.31	9.00	52.00
	PI	68	29.06	10.08	9.00	57.00
	HI	46	38.37	10.25	16.00	58.00
	SWDs as a pool	**231**	**29.71**	**10.24**	**9.00**	**58.00**

Note: Mid-scale value for PE = 30

Table 10 shows, the overall mean score of participants in PE sub-scale ranged from 9 to 58 with a mean of 29.71 (*SD*=10.24). The overall mean score is almost equal to the mid-scale value. However, the mean scores across the three disability groups indicated that the mean score of students with hearing impairments was above the mid-scale value (38.37), while the mean scores of students with physical impairment (29.06) and visual impairment (26.68) was relatively below the mid-scale value.

Table 11

Frequency Distribution and Percentage of Participants' Scores in PE dimension

Participants	Above mid-scale value		Average scores		Below mid-scale value	
	N	%	N	%	N	%
VI	35	29.91	7	5.98	75	64.10
PI	29	42.65	0	0	39	57.35
HI	39	84.78	0	0	7	15.22
SWDs as Pool	**103**	**44.6**	**7**	**3.03**	**121**	**52.38**

Note: Mid-scale value for PE = 30

From the results of frequency distribution and percentages in Table 11, it can be noted that the majority of students with hearing impairments (84.78%) scored above the mid-scale value, where as the majority of students with visual impairment (64.1%) and physical impairments (57.35%) scored less than the mid-scale value indicating undesirable experience.

A qualitative study provides in-depth explanations on the nature of interaction and the influence of the physical environment on the students' participation in various activities of student life from the student's perspective.

Hence, participant students and key informants reported encouraging developments in the physical accessibility of higher education institutions. This includes construction of ramps in entrances of some of the new and old buildings, renovated toilet and shower facilities in residential buildings and the ongoing construction and reconstruction efforts to make roads, walkways and the physical landscape accessible. In fact, this partially accessible part of the built environment reduced the challenges that students with disabilities encountered in the ability to move freely, in accessing and using facilities and services. Moreover, accessibility of buildings and facilities of student cafeterias and disability resource centers were viewed positively for making the students' experience desirable. For example, participant 15 and 16 viewed the reconstruction of roads and walkways in their university positively.

> *When I first came to this university, the areas that were accessible to move were limited. Now, the roads and stairs in the roads are reconstructed and are being made flat. I cannot say it is entirely accessible but most part of the campus roads and walkways is becoming accessible for me.* (Participant 16, a female student with physical impairment at Haramaya University)

Despite the progress reported in the physical environment, accessibility of the physical environment of the institutions remains to be one of the major barriers experienced by the participants particularly of students with visual and physical impairments. Accessibility features that resulted undesirable experiences were examined to explain the finding from the quantitative study.

Residential areas/dormitories

In spite of positive experiences in physical accessibility of buildings and facilities in residential areas, students with physical and visual impairments revealed barriers which include shortage of accessible toilet and shower rooms, cloth washing and line areas. Accessible washrooms and toilets for SWDs were very limited in number and location. For example, both female and male participants reported that only one toilet is renovated and made accessible in their respective residential buildings. Considering the number of students with disabilities the available facilities are by far inadequate.

Although these facilities were reported as accessible by some students with disabilities, it was challenging for others to use them. Regarding difficulties in using the shower room, for example, participant 9 stated that *"I have problems with reaching the water tap as it is higher than my height. So, I always need someone to open and close the water tap."* Slippery nature of shower rooms was another challenge that often caused accidents to students who use crutch and Blind students.

Similarly, washing clothes is a challenge for the Blind and students with physical disabilities due to inaccessible roads to the washing area and inaccessibility of the water tap and washing area/bath is not either within the reach of the student or inaccessible. In addition, disparity in access among different sub-campuses of universities was also frequently raised by interview participants.

> *Most modifications and services are concentrated in the main campus. For instance, I never take shower in the campus because it is not entirely accessible to me. The shower room does not have stall, side bar or have water control that I can operate in a seating position. Therefore, I am forced to go outside of the campus to take a shower. It is frustrating for me.* (Participant 3, wheelchair user at AAU)

Another challenge that contributed to the undesirable experience of participants in the physical environment was absence of accessible washrooms and toilet facilities in various buildings of their campuses, particularly around classroom, library, disability resource room and other buildings where participants often spend most of their time. Participant 15 explained that *"a problem with sanitation coupled with absence of disability friendly toilet/washroom in different buildings in the campus makes it more challenging for SWDs."* In consequence, SWDs were required to return back to their dormitory to use these facilities. Therefore, the students had to make extra effort and time than students without disabilities and most of them felt disadvantaged and ignored. Participant 3, for example, said that *"once I go out of my dorm for attending lecture or other purposes and whenever I need to use toilet and shower room, I have to return back to the dorm to use toilet. In fact, traveling is tiresome."*

The participants reported that the absence of such infrastructures are a clear reflection of the inequalities existed in higher education. Moreover, since the distance between classroom and other buildings to the dormitories is long, it also takes them longer time to reach to attend lectures. Therefore, coming late and missing classes in yet another consequence. It was also reported that this situation was severe during the time of examination in addition to the anxiety associated with examinations.

Roads and walkways

Although roads and walkways in some part of the institutions are accessible, most areas are still inaccessible for students with disabilities. The participants revealed that their free movement was obstructed by the presence of a number of stairs, open holes, standing or

fixed objects, mass objects such as construction materials and remains or debris that blocked roads and narrow roads that exposed them for car accidents.

Parallel to citing the barriers in the physical environment of campuses, interview participants were narrating the consequences of these barriers in their mobility, health, access to services, and education. The story of participant 1 illustrated the challenge SWDs face with regards to free movement in the campus.

> *There are fixed objects and openings in the pathways and road sides and it is a common incident for students with visual impairments to fall and collide with fixed objects and other peoples. Earlier when I fell or collide, I used to get very angry and sad. But, now I get used to it and it is becoming that I make fun out of it with my friends because I knew that I cannot change anything by getting angry or feeling sad.* (A student with visual impairment at AAU)

Experiencing physical injury from falling is also raised by participant 7 and 8.

> *In the first semester of this academic year (2016/17), an exam room was assigned to a building which I do not know before. I fell down into an open ditch and I was injured in my knee and my trouser (pants) also torn apart. I was disappointed and informed the officials about the incident. Due to that the ditch was covered. But, there are a number of open ditches and holes in many parts of the campus.* (Participant 8, male student with visual impairment at Hawassa University)

The buildings found in high elevated location, presence of cars in front of building entrances and the high speed of cars within the campus were also factors for lack of access to the services and obstructing free movement. With regards to challenges in getting the needed services in the campus due to inaccessible physical location of buildings, participant 9 indicated that:

The road to the campus clinic is not accessible for wheelchair users and students with severe physical disabilities. The clinic is found in a higher place and the slop of the ramp is too steep or the elevation is high. So, I cannot easily enter by myself. Whenever I needed the service, I usually go with two or more of my friends to push the wheelchair.

In addition to accidents, inaccessible roads and walkways caused them to relay on friends, which most of them didn't access. Hence, they were required to move slowly and carefully, which again caused them to be late for lectures and exams.

Accessibility of campus Buildings

Participant students of the study clearly indicated that their attendance to higher education institutions is a great opportunity. However, the inaccessibility of the buildings where most of the learning activities takes place influenced their desire to regularly attend and benefit out of their participation in these activities. Besides, it was emotionally discouraging for them.

The findings revealed that lectures and examinations often take place in upper floors of the buildings and most of classroom buildings didn't have ramps and elevators. Although there were ramps in the entrances of some buildings, SWDs particularly of physical/mobility impairments were not able to reach rooms in upper floor of the buildings since they were challenged by stairs. The students had doubts that the units or offices that schedule classroom and exam programs and departments do consider their needs when assigning rooms to these academic tasks. Lack of access to classroom buildings was frequently raised by students as a major source of dissatisfaction and intention to withdraw. In supporting this argument, participant 9 said that *"I wanted to go back home until I received wheelchair from Cheshire Home Services, a non-governmental charity organization."*

As to accessibility of library buildings, participants indicated that most libraries in the three institutions were partially accessible. The presence of ramps for entering and exiting and separate reading rooms for students with visual impairment was reported as facilitator. However, participants also raised challenges in this area that affected their mobility and education. The most frequently raised problem was related to restrictions to use library services located upstairs particularly by students with mobility problem.

Participant 4 and 9 indicated that they had to reach as early as possible in order to get chair in ground floor of the library especially during exam times. They also suggested that the institutions should either reserve accessible areas for students with disabilities or create equal opportunities through constructing ramps or installing elevators so that they can use all rooms, facilities and services within the library like other students. Wheelchair user students also reported that they often depend on handouts and internet sources since most of the books and reference materials were located in high shelves and inaccessible areas within the library.

Despite the ongoing efforts of modifications in the physical environment, however, most administrative, department offices were found in upper floors of the buildings. Elevator and ramps do not exist and using stairs was found to be the sole option to reach and get services from these offices. However, this is not always possible for some students with disabilities. Hence, meeting with designated personnel in these offices was impossible for some students.

Student Lounges and recreational areas

The data from interview showed that that student lounges and recreational areas including sport fields were not accessible since they are designed for students without disabilities. Therefore their participation in these areas was extremely low. Almost all participant students revealed overwhelming need for these facilities and perceived it as yet

another indication of inequality. They believed that it would have been helpful to spend leisure time and establish social networks. However, they felt that it was an area least recognized by the universities management and SNSO/DRCs. On the need for accessible recreational areas, one student stated that:

> *I need a recreation center or activity to release my academic stress and relax myself. For example, other sighted students have the opportunity to watch different TV programs, DSTV programs and can easily go out and relax. But, students with visual impairment face difficulties in this regard. Therefore, it would be nice if this is facilitated by the university.* (Participant 8, student with visual impairment, Hawassa University)

Distance of buildings in the campus

It was evident in the study that the universities were making efforts to build ramps in the new buildings in the campus. However, the ramps were constructed only on the ground floor of the buildings. In addition to inaccessibility of buildings, another concern that was raised by the students was the distance of new buildings from dormitories. It caused them physical pain, exhaustion, being late for lecture and exams.

Overall, the study revealed that the institutions were engaged in activities that remove barriers in the physical environment. However, emphasis was given on placing students with disabilities in the ground floor of the residential buildings and modifying washrooms, removing barriers on the roads, walkways and landscape. Irrespective of these activities, SWDs were experiencing barriers in attending lectures, taking exams, use facilities and services that would help them to equally participate in their education and different dimensions of student life.

4.2.4. The Nature of Experience in the Policy Environment

Policy Environment Experience (POE) sub-scale was measured by 9 items. This means in 9 items of a 5-point Likert scale the possible score ranges from 0(9 x 0 = 0) to 36 (9 x 4 = 36) and the mid-scale value of the scores becomes 18. The descriptive statistics of the nature of experiences of participants in policy environment is presented below.

Table 12

Descriptive Statistics of the Nature of Experience in POE Dimension

DV	Disability types	N	Mean	SD	Minimum	Maximum
POE	VI	117	17.38	5.37	6.00	32.00
	PI	68	17.35	5.93	7.00	34.00
	HI	46	17.59	6.20	7.00	31.00
	SWDs as a pool	**231**	**17.42**	**5.69**	**6.00**	**34.00**

Note: Mid-scale value for POE = 18

As presented in Table 12, the distribution of scores ranged from 6 to 34. The overall mean score of participants in POE sub-scale (17.42 and SD =5.69) was almost equal to the mid-scale value (18). The mean scores across the three disability groups were also found to be similar to the overall mean value.

Table 13

Frequency Distribution and Percentage of Participants' Scores in POE dimension

Participants	Above mid-scale value		Average scores		Below mid-scale value	
	N	%	N	%	N	%
VI	42	35.9	6	5.13	69	58.97
PI	20	29.41	7	10.29	41	60.29
HI	19	41.3	2	4.35	25	54.35
SWDs as Pool	**81**	**35.1**	**15**	**6.49**	**135**	**58.44**

Note: Mid-scale value for POE = 18

The frequency of scores and percentages in Table 13 shows that, of the total sample (n =231), the majority of participants (58.44%, n = 135) had scores below the mid-scale value.

Whereas, 35.1% of participants scored above the mid-scale value and the remaining 6.49% had scores equal to the average score.

Looking at the frequency distribution and percentages of participants across the three disability groups, 60.29% students with physical impairments followed by 58.97% and 54.35% students with visual and hearing impairments respectively scored below the mid scale value. This implies that, although a considerable number of participants perceived a favorable policy environment, the majority of participants did not.

In order to explain the finding of the descriptive statistics on the experiences of SWDs in the policy environment, interview participant students were asked questions on their awareness of disability specific policies and legislations in their university and how it impacted in protecting their right and disability specific support provisions and education. Overall, participants reflected a similar perception on the presence and functionality of institutional level disability specific policies and legislations in their respective universities.

The finding indicates that most students had a general awareness on the availability of national level disability related legal frameworks that promote the inclusion of disability issues in education. Whereas, they lacked awareness on the presence or absence of institutional level disability related policy, while the key informants affirms the absence of clearly articulated disability related policy except some statements in the senate legislations. These statements also lacked comprehensive descriptions of the rights and entitlements of SWDs, roles and responsibilities of various management sectors and staff of the institutions.

As to the reasons for lack of awareness, participants indicated that they were not informed by the university regarding specific policies and the entitlements of SWDs for support services and reasonable accommodations. Students were asked about whether

orientations programs addressed issues related to disability policy and legislations or not. Most respondents did participate in orientation programs when they first came to the respective institutions. The contents of the orientation were about the university life in general, issues related to duties and responsibilities of the universities and the students as well, the available support services for SWDs in the campus, and institutions' future plans. However, they didn't recall discussions on issues related to the presence or absence of disability specific policy, its contents, entitlements of students with different types of disabilities, and the responsibilities of the different administrative bodies and teacher in relation to supporting students with disabilities.

Despite lack of awareness, however, participants mentioned some positive responses and actions from their universities that seemed guided by some form of legislation. Participants perceived that financial provisions, University entrance procedures (through lowering the cut point for SWDs), priority in entering the choice of their University and field of study, and easy transfer from one university to another were the outcomes of policy. However, from the stories of the students, it was noted that most of the responses and actions of the institutions were based on affirmative action strategies that were in place for students with disabilities that are implemented across institutions at a national level than directed by institutional level legal frameworks. For example,

> *I was first placed in Semera University by ministry of education (MoE). But, I wanted to move to AAU due to absence of services for students with hearing impairment in Semera and applied to MoE. My application was immediately accepted and transferred to AAU within a short period of time. I think it is because of some policy that my transfer is possible.* (Participant 5, a female Deaf student, AAU)

Although participants were not aware of the presence or absence of disability related policies at their institutions, most of them perceived that either policy were not available at

all or not implemented effectively and efficiently. The following statements showed the perceptions of students with disabilities. If policy exists:

- *...we would know about the presence and the contents of the policies.* (Participant 2, female student with visual impairment, AAU)
- *...support services would not be provided irregularly* (participant 9, female student with physical impairment, Hawassa University).
- *...it would have solved many of our problems and provide SWDs the opportunity to learn with their special needs addressed.* (Participant 17, deaf student at Haramaya University)
- *...support service provisions would have been uniform across departments and different sub-campuses of a university. I think only 2 or 3 departments in the main campus have provisions of a sign language interpreter service for students with hearing impairment. No other departments in the main campus and other campuses of AAU have this service.* (Participant 6, Deaf student at AAU)
- *I think laws are equal for all. But, when I see the services and accommodations for SWDs in the university, it is not the same. Students with visual impairment have better services than us (i.e., students with physical disabilities). If policies were present, our needs would have been treated equally.* (Participant 4, a student with physical impairment at AAU)

Despite the intense need for protection of their right through policies and legal instruments, adapting international and local disability right and inclusive education legal instruments or enacting institutional level policies in compliance with the principles of inclusion was the major gap identified for the perceived pitfalls in the educational

environment. Most participants also indicated that support services would not be given in fragmented and ad hoc manner rather it would have been planned and provided based on the needs of students with disabilities. This kind of inconsistency in support provision is partly resulted from absence of a policy or failure of the institutions to implement the existing policies. Furthermore, participant 1 and 7 linked the problem with negative attitude of the university leadership towards disability. They believed that the attention given to disability issues was by far less than the issue of gender is one indication for the negative attitude.

In contrary to the students' view, the key informants indicated that the leadership of the institutions is becoming concerned and attentive to disability issues than before though much is left to do. Recognizing the gap in policy, for example, the universities started to develop a disability related policy guideline in consultation with their respective SNSO/DRC offices.

4.3. Relationship Among the Four Environmental Dimensions

The Pearson correlation was computed to examine the relationship among the environmental experience dimensions of the study.

Table 14

Pearson Correlation among Experience Dimensions

Variables	SE	PE	POE
AE	.332**	.320**	.609**
SE		.233**	.241**
PE			.261**

***. Correlation is significant at the 0.01 level (2-tailed)*

As shown in table 14, there was a statistically significant positive correlation among all dependent variables. This implies that as one experience dimension becomes more conductive, other experience dimensions becomes also more conductive and vice-versa. Although the four dependent variables had a positive relationship, there was a variation on the strength of correlation. According to Cohen (1988), a correlation coefficient within the

range of .10 to .29 can be considered as small or weak, from .30 to .49 medium and from .50 to .10 large or strong. Therefore, the strongest correlation coefficient among the four dependent variables was between academic environment experience and policy environment experience, $r = 0.609$, $p < 0.01$. The second strong correlation was between academic environment experience and social environment experience, $r = 0.332$, $p < 0.01$. The third strong correlation was between academic environment experience and physical environment experience, $r = 0.320$, $p < 0.01$. Hence, academic environment experience had a moderate relationship with the social and physical environment experiences. On the other hand, weak correlations were noted in the following variables. The correlation between physical environment experience and policy environment experience was found to be, $r = 0.261$, $p < 0.01$. The social environment experiences had a correlation of $r = 0.241$ and $r = 0.233$ with policy environment and physical environment experiences respectively at a significant level of 0.01.

4.4. Mean Score Differences Among Groups of Demographic Variables

Examining whether there was a mean score difference between groups of demographic variables on the four dimensions of students' experience (AE, SE, PE and POE) was one of the major research questions of this study. The groups of independent variables of the study were gender, disability type, year level, and University. In order to examine mean score difference between groups of these demographic variables on the four experience dimensions, a one way multivariate analysis of variance test was performed.

4.4.1. Comparison of Students' Experience by Gender

Table 15

Descriptive Statistics of Experiences by Gender

Dependent Variable	Participants Gender	N	Mean	SD
AE	Male	164	67.82	18.14
	Female	67	75.66	15.09
SE	Male	164	58.76	14.77
	Female	67	59.58	14.36
PE	Male	164	29.55	10.29
	Female	67	30.10	10.18
POE	Male	164	16.88	5.66
	Female	67	18.73	5.56

In order to examine mean score difference between male and female participants on the four dependent variables, a one way MANOVA was performed.

Table 16

Multivariate Test by Gender

Effect		Value	F	Hypothesis df	Error df	Sig.	$\eta 2$	Noncent. Parameter	Observed Power
Intercept	Pillai's Trace	.957	1271.587	4.000	226.000	.000	.957	5086.349	1.000
	Wilks' Lambda	.043	1271.587	4.000	226.000	.000	.957	5086.349	1.000
	Hotelling's Trace	22.506	1271.587	4.000	226.000	.000	.957	5086.349	1.000
	Roy's Largest Root	22.506	1271.587	4.000	226.000	.000	.957	5086.349	1.000
Gender	Pillai's Trace	.045	2.689	4.000	226.000	.032	.045	10.754	.741
	Wilks' Lambda	.955	2.689	4.000	226.000	.032	.045	10.754	.741
	Hotelling's Trace	.048	2.689	4.000	226.000	.032	.045	10.754	.741
	Roy's Largest Root	.048	2.689	4.000	226.000	.032	.045	10.754	.741

P< .05

As shown in Table 16, there was a statistically significant mean score difference between male and female students with disabilities on the combined dependent variables, Wilks' Lambda= .955, F (4, 226) = 2.689, $p < .05$, partial eta squired = .045. Power to detect the effect was .714.

4.4.1.1. Independent Sample t-test of Gender Differences on Experience Dimensions

Table 17

The Independent Samples t-tests Results of Groups of Gender

Dependent Variables	Groups	Mean	SD	*t*	*df*	*Sig.*
AE	Male	67.82	18.14	-3.119	229	.002*
	Female	75.66	15.09			
SE	Male	58.76	14.77	-.374	229	.700
	Female	59.58	14.36			
PE	Male	29.55	10.29	-.386	229	.709
	Female	30.10	10.18			
POE	Male	16.88	5.66	-2.268	229	.024
	Female	18.73	5.56			

*$p < .013$

Table 17 shows that when the results for the dependent variables considered separately using Bonferroni adjusted alpha level of 0.013,there was a statistically significant AE mean score difference between male and female students, t (229) = -3.119, $P < .01$. The AE mean score for female SWDs was greater (M = 75.66, SD = 15.09) than that of male SWDs (M = 67.82, SD = 18.14) with a mean difference of -7.83; implying that female SWDs have better academic experience than that of male students with disabilities. On the other hand, there was no statistically significant mean score difference between male and female SWDs on SE, PE and POE measures.

The qualitative result obtained using interview indicates that gender responsive policies at national level and the affirmative action policies and various activities being implemented to narrow the gap between male and female students at institutional level was emerged as the most credible explanation for the difference. Although further studies are required to understand the extent of impact of affirmative action policies, it was noted from the study that the attention given for empowerment of female SWDs and opportunities of participation in various training programs such as leadership, mentoring, life and study skill trainings, counseling support from gender experts and tutorials had both direct and indirect

contributions to the better desirable experience. The most important outcomes of these trainings were improved self-confidence, motivation, and it induced the spirit of '*I can*'. Some male participants also shared the views of their female peers.

> *I don't think the experience in the learning environment for male and female SWDs is different since instructional accommodation does not exist. However, the extra support they are receiving from gender office might cause the difference* (Participant 15, student with physical impairment at Haramaya University)

Female participants perceived that the culture of poor academic participation and performance of female students in general is changing. Despite their underrepresentation in higher education, they are attending to these institutions better than before and their academic performance is visibly increasing from time to time.

> *Today it is becoming common to see female students with and without disability receiving academic excellence awards. This is partly the outcome of gender sensitive policies and trainings that we took especially during the first year.* (Participant 2, student with visual impairment, AAU)

Another factor that was captured in the interview was that female SWDs had a tendency of spending more time and effort on study. It was also noted that they had a practice of studying together than male SWDs.

> *In my opinion, female students with visual impairment have better performances than male counterparts. In fact, we participate in different trainings such as assertive and study skill trainings. But, I also think that we study courses together than male Blind students.* (A female student with visual impairment at Hawassa University)

On the issue of working together, a female students with physical disability (participant 9) also affirmed that she often study with her friends with and without disabilities. Participant

16, in contrast, prefers to study individually although she engaged in group discussions during exam time. Working in groups provided opportunities for sharing ideas and materials, gaining different perspectives, to clear concepts that were not or vaguely understood during lectures and using as a platform to exercise some important communication skills through expressing thoughts, debating and arguing.

4.4.2. Comparison of students' Experience by Disability Type

Table 18

Descriptive Statistics of Experience by Disability Type

Variables	Disability types	N	Mean	SD
AE	VI	117	68.56	16.51
	PI	68	72.07	18.47
	HI	46	71.09	19.19
SE	VI	117	60.62	14.61
	PI	68	58.15	15.12
	HI	46	56.15	13.67
PE	VI	117	26.68	8.31
	PI	68	29.06	10.08
	HI	46	38.37	10.25
POE	VI	117	17.38	5.37
	PI	68	17.35	5.93
	HI	46	17.59	6.20

Note: VI- Visual impairment, PI-Physical Impairment, HI, Hearing Impairment

Table 18 illustrates the number of participants by disability type with their mean scores and standard deviations. In addition, a one way MANOVA was performed to examine mean score difference among the three groups of participants on the four dependent variables. The following table indicates the MANOVA result by disability type.

Table 19

Multivariate Test by Disability Type

Effect		Value	F	Hypothesis df	Error df	Sig.	$\eta 2$	Noncent. Parameter	Observed Power
Intercept	Pillai's Trace	.959	1309.671	4.000	225.000	.000	.959	5238.684	1.000
	Wilks' Lambda	.041	1309.671	4.000	225.000	.000	.959	5238.684	1.000
	Hotelling's Trace	23.283	1309.671	4.000	225.000	.000	.959	5238.684	1.000
	Roy's Largest Root	23.283	1309.671	4.000	225.000	.000	.959	5238.684	1.000
Disability Types	Pillai's Trace	.257	8.318	8.000	452.000	.000	.128	66.542	1.000
	Wilks' Lambda	.747	8.826	8.000	450.000	.000	.136	70.608	1.000
	Hotelling's Trace	.333	9.334	8.000	448.000	.000	.143	74.671	1.000
	Roy's Largest Root	.317	17.930	4.000	226.000	.000	.241	71.721	1.000

P<.001

As shown in table 19, there was a statistically significant mean score difference among the groups of disability types on the combined dependent variables, Wilks' Lambda= .747, F (2,228) = 8.826, p< .001, partial eta squired = .136. Power to detect the effect was 1.000.

4.4.2.1. Univariate ANOVA Tests Among Groups of Disability Types

Table 20

Univariate ANOVA Test for Types of Disability

Source	DV	Type III Sum of Squares	Df	Mean Square	F	Sig.	$\eta 2$	Noncent. Parameter	Observed Power
Corrected Model	AE	588.731	2	294.366	.945	.390	.008	1.890	.213
	SE	727.843	2	363.922	1.711	.183	.015	3.422	.357
	PE	4549.786	2	2274.893	26.534	.000	.189	53.067	1.000
	POE	1.730	2	.865	.027	.974	.000	.053	.054
Intercept	AE	996258.467	1	996258.467	3198.119	.000	.933	3198.119	1.000
	SE	680012.199	1	680012.199	3197.144	.000	.933	3197.144	1.000
	PE	196859.274	1	196859.274	2296.113	.000	.910	2296.113	1.000
	POE	60852.004	1	60852.004	1866.231	.000	.891	1866.231	1.000
Type of Disability	AE	588.731	2	294.366	.945	.390	.008	1.890	.213
	SE	727.843	2	363.922	1.711	.183	.015	3.422	.357
	PE	4549.786	2	2274.893	26.534	.000*	.189	53.067	1.000
	POE	1.730	2	.865	.027	.974	.000	.053	.054

p<.013

As indicated in Table 20, when the results for the dependent variables considered separately using Bonferroni adjusted alpha level of 0.013, there was a statistically significant mean score difference among the three groups of SWDs on PE, F= (2,228) = 26.53, p < .013. However, there was no statistically significant mean score difference between groups of disability type on AE, SE and POE.

In order to examine the mean score difference among the three groups of disability type on PE, a post hoc comparison using Tukey HSD were made. The following table shows post hoc group comparison by disability type on PE.

Table 21

Post hoc Comparisons among Groups of Disability Type

DV	Type of disability	Type of disability	Mean Difference	Std. Error	Sig.	95% CI	
						Lower Bound	Upper Bound
AE	VI	PI	-3.5180	2.69139	.393	-9.8673	2.8314
		HI	-2.5314	3.07157	.688	-9.7776	4.7148
	PI	VI	3.5180	2.69139	.393	-2.8314	9.8673
		HI	.9866	3.36944	.954	-6.9624	8.9355
	HI	VI	2.5314	3.07157	.688	-4.7148	9.7776
		PI	-.9866	3.36944	.954	-8.9355	6.9624
SE	VI	PI	2.4683	2.22390	.509	-2.7781	7.7148
		HI	4.4632	2.53804	.186	-1.5243	10.4508
	PI	VI	-2.4683	2.22390	.509	-7.7148	2.7781
		HI	1.9949	2.78417	.754	-4.5733	8.5631
	HI	VI	-4.4632	2.53804	.186	-10.4508	1.5243
		PI	-1.9949	2.78417	.754	-8.5631	4.5733
PE	VI	PI	-2.3751	1.41195	.214	-5.7060	.9559
		HI	-11.6858	1.61140	.000*	-15.4873	-7.8843
	PI	VI	2.3751	1.41195	.214	-.9559	5.7060
		HI	-9.3107	1.76767	.000*	-13.4809	-5.1406
	HI	VI	11.6858	1.61140	.000	7.8843	15.4873
		PI	9.3107	1.76767	.000	5.1406	13.4809
POE	VI	PI	.0317	.87075	.999	-2.0225	2.0859
		HI	-.2023	.99375	.977	-2.5467	2.1420
	PI	VI	-.0317	.87075	.999	-2.0859	2.0225
		HI	-.2340	1.09012	.975	-2.8057	2.3377
	HI	VI	.2023	.99375	.977	-2.1420	2.5467
		PI	.2340	1.09012	.975	-2.3377	2.8057

**p<.008 VI- Visual impairment, PI- physical Impairment, HI- Hearing Impairment*

From Table 21, it can be noted that there was a statistically significant difference between the mean score of students with hearing and visual impairments with a mean difference of 11.69 and between hearing and physical impairments with a mean difference of 9.31. This implies that students with hearing impairments had a higher mean score (M = 38.37, SD = 10.25) than students with physical (M = 29.06, SD = 10.08) and visual impairments (M = 26.68, SD = 8.31). However, there were no significant mean score difference between students with physical and visual impairments.

In compliance with the quantitative finding, the qualitative part also indicated the students with visual and physical impairments had undesirable experience due to a wide range of barriers in the physical environment. Shortage of accessible washroom in convenient locations across the campuses and sub-campuses were highly problematic. The students' learning was hampered by inaccessible classrooms, exam locations for students with visual impairment, lack of alternative classroom arrangement including relocation to accessible rooms.

Restrictions in movement due to inaccessible roads, very narrow roads and walkways, presence of open holes and ditches in the roads and road sides, presence of stairs in the roads or pathways, presence of some buildings in inappropriate places (too high/too steep), presence of physical objects in pathways that obstruct movement including fixed objects and mass of objects and materials, car parking in front of buildings and speed of cars in the campus, long distance between buildings within the campus and from different campuses of universities were part of the students experience in the physical environment.

In addition, efforts of accessibility such as renovations and construction of ramps focused only on the ground floors of buildings and absence of elevators which in turn leads to inability to use facilities and services in upper floors of the buildings and shortage of accessible recreational areas that restricts students from using the services and social relationships were also the major challenges shared by participants.

4.4.3.Comparison of Students' Experience by Year level

Table 22

Descriptive Statistics of Participants' by Year Level

DV	Year level	N	Mean	SD
AE	1st year	60	69.77	18.41
	2nd year	75	73.93	17.15
	3rd year	70	67.49	18.14
	Above year 4	26	66.81	14.52
SE	1st year	60	57.95	15.31
	2nd year	75	59.40	14.01
	3rd year	70	59.17	15.13
	Above year 4	26	59.81	14.14
PE	1st year	60	31.05	9.54
	2nd year	75	30.73	10.87
	3rd year	70	28.73	10.85
	Above year 4	26	26.31	7.22
POE	1st year	60	17.35	5.62
	2nd year	75	17.59	6.08
	3rd year	70	17.99	5.61
	Above year 4	26	15.54	4.69

Table 22 shows the descriptive statistics of participants' experience on the four dimensions by year level of participants. In addition, a one way MANOVA was performed to examine the mean score difference between groups of year level on the four dependent variables. The following table shows MANOVA result by year level.

Table 23

Multivariate Test by Year Level of Participants

Effect		Value	F	Hypothesis df	Error df	Sig.	$\eta 2$	Noncent. Parameter	Observed Power
Intercept	Pillai's Trace	.956	1229.347	4.000	224.000	.000	.956	4917.387	1.000
	Wilks' Lambda	.044	1229.347	4.000	224.000	.000	.956	4917.387	1.000
	Hotelling's Trace	21.953	1229.347	4.000	224.000	.000	.956	4917.387	1.000
	Roy's Largest Root	21.953	1229.347	4.000	224.000	.000	.956	4917.387	1.000
Year level	Pillai's Trace	.081	1.561	12.000	678.000	.098	.027	18.737	.830
	Wilks' Lambda	.921	1.560	12.000	592.940	.099	.027	16.479	.765
	Hotelling's Trace	.084	1.556	12.000	668.000	.100	.027	18.669	.828
	Roy's Largest Root	.050	2.810	4.000	226.000	.026	.047	11.240	.763

As shown in Table 23, there was no statistically significant mean score difference among groups of year level on the combined dependent variables. The qualitative result indicates that except problems related to adjusting with the new environment during their first year was mentioned by some, it seemed that year level did not affect the three groups of students with disability much differently.

4.4.4.Comparison of Students' Experience by University

Table 24

Descriptive statistics of Participants' by University

Dependent Variable	University Name	N	Mean	SD
AE	AAU	119	65.48	16.21
	Hawassa University	64	75.02	18.97
	Haramaya University	48	74.98	16.44
SE	AAU	119	61.32	13.46
	Hawassa University	64	59.69	16.78
	Haramaya University	48	52.33	12.46
PE	AAU	119	32.04	10.53
	Hawassa University	64	26.53	8.70
	Haramaya University	48	28.17	10.14
POE	AAU	119	16.00	4.98
	Hawassa University	64	18.95	6.35
	Haramaya University	48	18.88	5.61

Table 24 shows the descriptive statistics of participants' experiences by sample universities. In addition, a one way MANOVA was performed to examine mean score difference among groups of universities on the four dependent variables. The following table shows MANOVA result by university.

Table 25

Multivariate Test by University

Effect		Value	F	Hypothesis df	Error df	Sig.	$\eta 2$	Noncent. Parameter	Observed Power
Intercept	Pillai's Trace	.958	1286.326	4.000	225.000	.000	.958	5145.303	1.000
	Wilks' Lambda	.042	1286.326	4.000	225.000	.000	.958	5145.303	1.000
	Hotelling's Trace	22.87	1286.326	4.000	225.000	.000	.958	5145.303	1.000
	Roy's Largest Root	22.87	1286.326	4.000	225.000	.000	.958	5145.303	1.000
University	Pillai's Trace	.304	10.122	8.000	452.000	.000	.152	80.976	1.000
	Wilks' Lambda	.706	10.676	8.000	450.000	.000	.160	85.407	1.000
	Hotelling's Trace	.401	11.230	8.000	448.000	.000	.167	89.838	1.000
	Roy's Largest Root	.361	20.382	4.000	226.000	.000	.265	81.530	1.000

P<.001

As shown in Table 25, there was a statistically significant mean score difference between groups of sample universities on the combined dependent variables, Wilks' Lambda = .706, F (2,228) = 10.68, p < .001, partial eta squired = .160. Power to detect the effect was 1.000. The following table shows the results of univariate ANOVA result.

4.4.5. Univariate ANOVA Test by University

Table 26

Univariate ANOVA Test by University

Source	DV	Type III Sum of Squares	Df	Mean Square	F	Sig.	$\eta 2$	Noncent. Parameter	Observed Power
Corrected Model	AE	5230.244	2	2615.122	8.982	.000	.073	17.964	.973
	SE	2803.718	2	1401.859	6.886	.001	.057	13.771	.920
	PE	1408.173	2	704.087	7.075	.001	.058	14.150	.927
	POE	491.995	2	245.997	8.077	.000	.066	16.154	.956
Intercept	AE	1034935.296	1	1034935.296	3554.568	.000	.940	3554.568	1.000
	SE	669765.412	1	669765.412	3289.792	.000	.935	3289.792	1.000
	PE	167711.365	1	167711.365	1685.289	.000	.881	1685.289	1.000
	POE	64586.660	1	64586.660	2120.612	.000	.903	2120.612	1.000
University	AE	5230.244	2	2615.122	8.982	.000*	.073	17.964	.973
	SE	2803.718	2	1401.859	6.886	.001*	.057	13.771	.920
	PE	1408.173	2	704.087	7.075	.001*	.058	14.150	.927
	POE	491.995	2	245.997	8.077	.000*	.066	16.154	.956

**p<.013*

As noted in Table 26, when the results of the dependent variables were considered separately, there was a statistically significant mean score difference between groups of university on all dependent measures, using Bonferroni adjusted alpha level of .013. Significant mean score difference was obtained for AE sub-scale (F = 8.98, df = 2,228, p =.000), SE sub-scale (F = 6.89, df = 2,228, p = .001), PE sub-scale (F = 7.08, df = 2,228, p = .001) and POE sub-scale (F= 8.08, df = 2,228, p = .000). A Tukey HSD post hoc test was performed to see if there was a significant mean score difference between the universities on each of the four experience dimensions.

Table 27

Post hoc comparisons for Mean Score difference by University

DV	University	University	Mean Difference	Std. Error	Sig.	95% CI	
						Lower Bound	Upper Bound
AE	AAU*	HAWU	-9.5366*	2.64500	.001	-15.7765	-3.2968
		HARU	-9.5002*	2.91761	.004	-16.3832	-2.6172
	HAWU*	AAU	9.5366*	2.64500	.001	3.2968	15.7765
		HARU	.0365	3.25808	1.000	-7.6497	7.7227
	HARU*	AAU	9.5002*	2.91761	.004	2.6172	16.3832
		HAWU	-.0365	3.25808	1.000	-7.7227	7.6497
SE	AAU	HAWU	1.6318	2.21177	.741	-3.5860	6.8497
		HARU	8.9860*	2.43973	.001	3.2304	14.7416
	HAWU	AAU	-1.6318	2.21177	.741	-6.8497	3.5860
		HARU	7.3542*	2.72443	.020	.9269	13.7814
	HARU	AAU	-8.9860*	2.43973	.001	-14.7416	-3.2304
		HAWU	-7.3542*	2.72443	.020	-13.7814	-.9269
PE	AAU	HAWU	5.5108*	1.54634	.001	1.8628	9.1588
		HARU	3.8754	1.70572	.062	-.1487	7.8994
	HAWU	AAU	-5.5108*	1.54634	.001	-9.1588	-1.8628
		HARU	-1.6354	1.90477	.667	-6.1290	2.8582
	HARU	AAU	-3.8754	1.70572	.062	-7.8994	.1487
		HAWU	1.6354	1.90477	.667	-2.8582	6.1290
POE	AAU	HAWU	-2.9531*	.85547	.002	-4.9713	-.9350
		HARU	-2.8750*	.94364	.007	-5.1012	-.6488
	HAWU	AAU	2.9531*	.85547	.002	.9350	4.9713
		HARU	.0781	1.05375	.997	-2.4078	2.5641
	HARU	AAU	2.8750*	.94364	.007	.6488	5.1012
		HAWU	-.0781	1.05375	.997	-2.5641	2.4078

*$p < .05$*AAU- Addis Ababa University, *HAWU- Hawassa University, *HARU- Haramaya University*

The post hoc analysis result in Table 27 indicates that participants in AAU had reported undesirable experiences in AE than both Hawassa and Haramaya Universities with almost equal mean difference (*MD* = -9.54 and -9.50 respectively). Meaning, the mean scores of participants from Hawassa University (*M* = 75.02, *SD* = 18.97) and Haramaya University (*M* = 74.98, *SD* = 16.44) were higher than participants from AAU (*M* = 65.48, *SD* = 16.21),

while there were no significant AE mean score difference between participants from Hawassa and Haramaya Universities.

Looking at the result of SE dependent measure, the mean scores of participants from AAU (*M* = 61.32, *SD* = 13.46) and Hawassa University (*M* = 59.69, *SD* = 16.78) were higher than participants from Haramaya University (*M* = 52.33, *SD* = 12.46) indicating better desirable social experience. A significant PE mean score difference was obtained between participants from AAU (*M* = 32.04, S*D* = 10.53) and Hawassa University (*M* =26.53, *SD* = 8.70) with a mean difference of 5.51. In terms of policy environment, participants from AAU had lower POE mean score than participants from Hawassa University (*MD* = -2.95) and Haramaya University (*MD* = -2.88). Meaning that the POE mean scores of participants from AAU (*M* = 16.00, *SD* = 4.98) was lower indicating undesirable experience than participants from Hawassa and Haramaya Universities.

The qualitative result obtained using interview revealed more of similar academic experience among SWDs in the three universities. Although some differences were notable on the availability and extent of general and academic support services, most of the facilitators and the barriers were shared by all participants. Yet, the academic experience of SWDs in the three universities was found to be influenced by various factors mainly of lack of reasonable accommodation in curricular contents, methods, approaches and assessment procedures, absence or inadequate disability specific support services, classroom assistants such as sign language translators and note takers, and assistive and technological devices. In addition, the knowledge, attitude and willingness of teachers to identify and accommodate the special educational needs of SWDs and inaccessible physical environment that obstruct

their full access, participation and learning were also raised as confounding factors in the academic environment from participants in the three universities.

Although academic experience is the least rated by participants of the study, the follow-up qualitative interview data indicated that students with disabilities in AAU showed higher dissatisfaction with their academic experience. This was presumed to be due to the difference in expectation before coming to the institution and the actual experience. For example, participant 2, 3, 4 and 6 reported that they felt happiness when they were placed in AAU. They reported, however, their happiness reduced eventually as they began noted discrepancy. They also indicated that there was a difference between what they were told about the services and support provisions available for SWDs in orientation programs and the support they were actually receiving.

> *AAU was my first choice and I was happy when I was placed in the university because I thought it is more accessible and I will get better accommodation. I also participated in the orientation program for first year students and they were telling us the presence of diverse support services for students with disabilities. I again felt happy. But, I found it the otherwise as I continue to learn. I was learning most of the courses in upper floor of classroom buildings. For example, I took Introduction to Management course in the 4th floor. It was tiresome both mentally and physically. First semester ended like this despite my frequent request for accommodation.* (Participant 3, a student with physical impairment at AAU)

Participant 2 also reported that:

> *Last year, we (i.e., SWDs) had a meeting with members of the top management together with leaders of the disability resource center. We reflected the challenges that we were facing and we were told that the university will do its best to address the problems. But, we are learning in the same way like before. I haven't seen much change until now except some environmental modifications and I do not expect change will come in the future.* (A student with visual impairment at AAU)

The dissatisfaction among participants in AAU, despite the university was in a better position in terms of support services, could also be related to the disproportion between the number of SWDs seeking disability related support and the available support services since AAU hosted the largest number of SWDs than the two Universities.

The quantitative result on the social experience dimension, on the other hand, revealed that participants from AAU had higher mean score followed by Hawassa University than Haramaya University. In general, the interview finding revealed that the social attachment between SWDs and the university community particularly with faculty and administrative staff was weak at their universities, but some participants had established friendships with other students in their campuses. For these students, their socialization was a source of external support in terms of access to information, educational and psychological or emotional support, participation in various activities in and outside of the campus, and enhanced a sense of belongingness in the social environment.

However, this desirable experience was not reported by most interview participants. The attitude of others was regarded as the major barrier restricting these students from enjoying a desirable social experience and establishing a satisfying social network. Therefore, better students' relationship with other students in the campus was the possible explanation for the statistical difference noted. Better social environment perhaps depends on the presence of more number of SWDs. it gives them the opportunity to socialize. Since AAU has a long history of admitting students with disabilities, students contact and direct experience of learning with SWDs might contribute to the relatively better social experience.

Despite the statistical difference observed between the universities in the physical environment dimension of the quantitative data, the finding from the qualitative phase

showed that the facilitators and the barriers these groups of students experience in the three universities were more similar. On the other hand, removing architectural barriers was a dimension given better attention by the institutions than the rest three environmental dimensions. Hence, some positive developments were evident that enhanced mobility and participation of SWDs. Ongoing construction and reconstruction efforts were also noted during the time of data collection. Construction of ramps in entrances of new buildings and some of the old buildings and roads and pavements in a large scale in AAU might contribute to the statistical difference in experience in the physical environment. For example, constructions of ramps in female dormitory, new library, registrar office, and disability resource center were facilitating easy entrance though access to upper level floors and facilities was challenging specially for students with mobility impairment.

The difference in experience obtained in the initial quantitative study in the policy environment between the universities was not related to the gap in policy and practice since there was no concrete and explicit institutional level disability related policy frameworks. For participants, the individual behavior and willingness of academic and administrative staff and the student's personal determination to protect their right was found to be contributing factors than legal driven accommodations. In this respect, participant 9 stated that:

> *I don't think there is a policy that enforces program planners and teachers to use accessible rooms for lecture and exams. I am saying this because despite my request for accommodation, I am still attending lectures and taking exams in classrooms in upper floor of the buildings. Some teachers are willing to change and some are not. Even if teachers are willing to relocate, free classrooms may not be available as it is already assigned to other class sessions. So, I am forced to climb up the stairs with great difficulty. My rights to learn in accessible environment were not protected by legislations.*

The importance of self-advocacy and self-determination as a tool to access support services was also reflected in the study. Participant 1, 8, 13 were vocal on the significance of these skills in accessing support.

> *I fell down in an open hole/ditch on the road side and get injured when I was going to exam room. I immediately reported to the university management. The management took an immediate action and covered it. But, still there are open holes across the campus.* (Participant 8, student with visual impairment at Hawassa University)

For this reason, one participant student suggested that:

> *I think SWDs have to be more united under our association. Because, I have seen that most of the changes occur after we ask the top management or when it is advocated by disability office or by concerned individuals within the academic or administrative staff.* (Participant, 16, female student with physical disability at Haramaya University)

4.5. Organization and Provision of Disability Related Support Services

In this section, the experience of SWDs on disability related support services were assessed through interview method. The findings from students with disabilities and key informants are presented. Thus, the structural organization of disability support offices and the type of support services available and the challenges both the students and the institutions experience were discussed.

4.5.1. Organization of Disability Related Support Services

Institutional level disability related support organization approaches were quite different in the three higher education institution investigated. AAU had better organizational structure and professionals than other institutions. The University is a pioneer in establishing a center for SWDs which were named as disability resource center structurally organized under the office of the dean of students in 2006. Currently, the center is reorganized and renamed as Special Needs Support Office run by a qualified personnel (PHD in the field of SNE) and is accountable to the academic vice president of the university. Moreover, it consisted of

different professionals including a SNE expert, a sign language interpreter and other administrative staff.

As to Hawassa University, a disability resource center (DRC) is responsible for planning, organizing and delivering support services to students with disabilities. In Haramaya University, however, the disability support office was organized under the Gender, HIV/AIDS and Special Needs Issues Mainstreaming Directorate as disability issues considering disability as one of a cross-cutting issue. In general, there was shortage of qualified experts and professionals in special needs support offices particularly in Hawassa and Haramaya Universities. For example, the office in Haramaya was coordinated by one expert (MA in the field of SNE) and an assistant, while a contact person or coordinator of the DRC in Hawassa had MA degree in Sociology. In addition, there were no sign language interpreters and professions related to disability studies or special education.

The discrepancy of support organization approaches reflects the absence of cross-national standards for organizing support, minimum requirement for disability related services to be offered and professionals to be assigned.

4.5.2. Types of Support Services and Provisions

Although some variations existed in the three institutions in terms of quality and quantity of disability related support services, however, most service are similar in terms of type. Common services includes provision of learning materials for students with visual impairments, financial assistance, computer and internet services, photocopy and printing, assistive devices, trainings, and counseling services. The presence of a separate library for students with visual impairment was also a common approach in the three institutions. Hence, this section presents the findings from students with disabilities and key informants.

Educational material support

Provisions of educational materials for SWDs are provided largely for students with visual impairment. Although differences noted in the three universities, in general, provision include Braille paper, slate, and stylus, digital voice recorder, audio book, tape recorder and cassette, battery for recorder, white cane, and Braille writer. While participants from AAU and Haramaya reported a provision of 3 reams of Braille papers in a semester (i.e., 6 for one academic year), in Hawassa Braille paper was provided on monthly basis. Slate and stylus was provided once at the beginning of every academic year. In addition, a sign language dictionary is provided to students with hearing impairment in Haramaya University with the purpose of increasing the communication skill.

The support services were regarded as an important facilitator in their learning. Since the majority of participants come from poor socio-economic backgrounds, it would have been difficult for them to acquire the learning materials. In addition, the presence of Braille section or rooms in libraries was viewed positively by students with visual impairment in the three institutions. Despite the importance of the provision, however, participants also reported non-availability and shortage of learning materials at their universities that greatly affected equal participation. The most frequently raised problem by students with visual impairment was lack of text and reference books in their alternative reading format in the libraries, Braille books. The available Braille books are outdated and unreadable. Participant 8 added that "*I don't usually go to the library because there are no reference books in Braille format."*

On the other hand, it was reported that the learning materials provided were also inadequate and sporadic. For example, case 5 from AAU said "…*given the number of courses in a semester, the amount of workload and lecture notes, the provision of 3 ream*

Braille paper is not adequate." In general, participants suggested that the services in learning material support is limited and should be made available, as participant 8 underlined *"if we are supposed to equally learn and participate in academic or teaching leaning process."*On the other hand participant students with physical and hearing impairments revealed that learning material support was not available to them at their universities.

Financial assistance

Financial assistance was one of support strategies rendered to SWDs through the special needs support offices. The support was provided on a monthly and yearly basis. Regarding monthly financial assistance, 120, 100 and 200 ETB per month for 10 months were provided to SWDs in AAU, Hawassa and Haramaya Universities respectively. A key informant in AAU disability resource center also indicated that additional 200 ETB was also provided to students with multiple disabilities and students with disabilities who come from very poor socio-economic backgrounds. Moreover, students with disabilities were granted 500 ETB once every year at their universities until completion of the study. Gender mainstreaming offices at the universities were also another source of finance for female students with disabilities.

Participants indicated that the financial support was important in fulfilling their personal and learning needs such as buying stationary materials, sanitary materials (soap and detergents and for payment of peoples who wash clothes for the students (cleaner), transportation, and mobile card and photocopy, printing and binding documents and assignments as well. Female SWDs also reported that the financial support was vital to meet their basic personal care needs that they have as a woman including beauty and sanitary or disposable menstrual pad. However, all participants of the study reported that the financial

assistance was inadequate considering the ever increasing costs of transportation, materials in the market, and their academic, medical and personal need as a student.

Shortage of support services at the universities also caused the students to use off-campus services with payment. However, there are times when these students unable to get the services due to lack of money. Participants also reported that it is becoming ordinary for higher education students to have personal laptops and related technological devices. However, it was difficult for students with disabilities to buy specialized equipments and devices since most of them depend on the financial grant from the universities. In turn, students with disabilities were restricted to use computer and internet services only at DRCs. For example, participant 3 said that "*…the pocket money (while laughing) is helping me to buy soap and other materials. But, it is not sufficient to cover the daily expense related to academic and personal costs."* Participant 8 added that *"In fact, for students who come from boarding schools or poor economic background, 100 birr per month is important. But, it is a very small amount."*

Computer and internet service

Another support service provision was related to computer and free internet service within the campus environment. SWDs reported that they had computer labs for all SWDs in the disability resource centers. Moreover, students with visual impairment had computer labs solely for them. Participants highly valued the availability of computer service and free internet service at their universities. Besides using computer and internet for academic tasks such as reading learning materials and doing assignments and projects, it was used as a means to spend leisure time and source of information. On the significance of the service for

academic purpose, participant 6 said that *"learning would have been very challenging since there are no instructional supports at the university."*

Although computer and internet services were viewed as one of the contributing factors in the academic environment, barriers were also reported that affected their academic experience, success and equal participation in learning. Absence of such services in sub-campuses since most of the services were accumulated in the main campuses, shortage of computers in the disability resource centers, small size of computer rooms, interruption of light and network problem, malfunction of computers and taking longer time for maintenance were the most frequently reported barriers.

The use of assistive technology in classrooms, library, resource centers and other locations was also reported as a widely ignored aspect of support at the institutions. For example, participant 1 indicated that *"the problems in getting timely information and reading posted notices, in exams and lectures can be easily removed if electronic methods were used."* Other students with visual impairment also spoke about the role of embosser, if available, in removing barriers related to reading and writing learning materials. In fact, the key informant from AAU reported steps taken in this regard and mentioned the recently started text scanner technology service for students with disabilities in its new library.

Photocopy and printing services

Special needs support offices or DRCs at the three institutions offered free photocopy and printing services for students with disabilities though the services vary across the institutions. For instance, participants with physical and visual impairment in Hawassa University reported that they had access to copy 100 pages in a semester (200 in a year). Conversely, students with hearing impairment indicated that there was no page limit for

them. They can copy any material in an amount they require. In AAU, 120 pages per semester (i.e., 240 pages in a year) were reported by all participants. However, such services were non-existent in Haramaya University. Printing documents was another enabler service reported by participants. These services were significant in their education considering the extent of workload in a semester and the limited financial assistance.

Nonetheless, participants expressed their dissatisfaction over the adequacy of support services in this regard. Participants were taking a maximum of 6 courses in a semester (participant 5 and 7 reported the maximum) and reported that they were required to copy handouts, supplementary materials, power point presentations, individual and group assignments of each courses. Hence, they are required to use off campus services which often constrained by shortage of finance. The participant students, therefore, suggested that provision should consider the number of courses and academic tasks in a semester.

> *I have access to copy materials at the resource center. But, I usually finish the quota before the end of the semester. Therefore, I have to use the service from private centers outside of the campus. But, there are also times I do not copy due to lack of money.* (Participant 5, a female deaf student at AAU)

Guidance and counseling service

It was noted that there were guidance and counseling services provision at the universities. In AAU and Hawassa Universities, the support was mainly given by heads or directors of the disability resource centers. In Haramaya University, on the other hand, students who required the service were referred to the guidance and counseling office under the student service directorate. It was noted in the study, however, SWDs do not often visit the offices rather they try to cope by themselves. Lack of qualified professionals in the offices and effective counseling services in a wide range of issues were regarded as barriers.

Assistive Devices and Appliances

The need for disability specific assistive devices and appliances was expressed by participants of the study. Indeed, these devices facilitate movement, independence and equal participation in different aspects of the university life. It was also reported that they had some provisions of assistive devices and appliances in their universities. These include provision of wheelchair, crutch, and rubber-tip for students with disabilities, cane and digital recorders for students with visual impairments. Students with hearing impairment seemed the least benefited group from the provision of assistive devices and appliances.

Pitfalls on assistive devices and appliance support services were rather more prevalent. The problems in this regard were absence, inadequacy, malfunction and lack of maintenance and untimely delivery of devices and appliances. On the impact of absence and untimely delivery, participants pointed out that it is one of the factors for SWDs to lag behind in participating in various curricular and extra-curricular activities when compared with peers without disabilities.

> *I depend on wheelchair for mobility. My request for wheelchair service since the beginning of the year is not addressed. So, I am forced to use artificial prosthesis. But, I couldn't use it for longer time because I became exhausted and feel pain in my leg as abrasion and infection occur due to friction between the prosthesis and my leg. I missed class for one week until I got well. Sitting in the library for long period of time was also difficult for me as I feel burn in my leg. So, I had to leave early.* (Participant 3, a student with physical disability at AAU)

Similarly, participant 9 reported that wheelchair is a significant assistive appliance for her movement in and outside of the campus. However, her request was not replied on time.

When I came to this university (i.e., Hawassa University), I was using my hand to move from place to place including classroom. I had classes in the morning and in the afternoon as well and my hand began to swell and hurt. I was on the verge of quitting my education and return home. Even though I had requested the university to facilitate the provision of wheelchair, I did not get the support. In contrast, I went to Cheshire Home Service in Hawassa with the help of my friend and requested a wheelchair support. The response was immediate. I sincerely thank the NGO and my friend for easing my life and helping me to continue my education.

Absence of maintenance services for malfunctioned assistive devices and appliances was yet another barrier. Maintenance services were not available at the institutions and therefore student were forced to get off campus paid services. This also had financial implication in addition to being restricted to move around. Students with visual impairment, for example, indicated that Dictaphones and cane were provided on a lone basis. They borrow the devices at the beginning of each year and return at the end. So, the devices are usually outdated, overused and most of the time they fail to function. Moreover, the life time of batteries for digital and tape recorders was short which exposed them for additional cost.

Human assistants

Another support dimension emerged from the qualitative study was support services from human assistants. Although the presence of classroom assistants was hardly reported, some students benefited from the provision of individual assistants in academic and daily life activities. These participants mentioned access to sign language interpreter, text and exam readers and scribes, and wheelchair drivers.

All participant students with visual impairment had access to hire assistants who read learning materials and read and scribe in examinations. However, students also reported a range of barriers associated with quality and behavior of readers particularly during

examinations which in turn contributed to poor performance. Note taker service for students with visual impairment didn't exist at the universities though some students needed the service. The need for quality note-taker was emerged out of the challenges they encountered in recording classroom lectures. Some teachers are not willing to allow students to record lectures. Students who had access to record, on the other hand, reported that the quality of the recorded lecture is reduced due to the poor quality of the recorder, low voice of some teachers and the sound disturbance within and outside of the classroom. Students with visual impairments believed that these challenges would not exist if quality and professional note-takers were used.

In terms of access to human assistants, students with physical and hearing impairments were the least benefited. Students with physical impairments particularly wheelchair users required helpers who move them around the campus and off-campus as well. However, the service was available only in Hawassa University. A key informant from AAU also indicated wheelchair driver can be used if the student had additional medical case. This implies that students with physical impairments/wheelchair users were dependent on the willingness of others or else on their own.

Sign language interpreter is the most basic reasonable accommodation students with hearing impairment could get. However, the study revealed that the support is largely absent at Hawassa and Haramaya universities. Although the presence of the service is reported in AAU, it was limited to the DRC and only students with hearing impairment in the department of Ethiopian Sign Language and Deaf Culture and Special Needs Education had access to sign language interpreter in the classroom. The key informant from Hawassa University reported that they started to implement STTI (Speech To Text Interpreter)

program for deaf students during the second semester of the 2017 academic year. STTIs are human assistants personally assist students with hearing impairment through listening teachers lecture, take note using laptops and give the note to the student. While participant 11 viewed the service positively, participant 12 reported problems related to quality of notes.

In general, despite the benefits some students gained from these services, arguably, the available support service in this regard at the universities was found to be negligible particularly for students with physical and hearing impairments.

Trainings

The qualitative study showed that the training needs of SWDs in higher education in wider aspects of campus life were high. Informants of the study also indicated that SWDs, in addition to psycho-social challenges, have gaps in important life skills and skills in using technology. However, both SWDs and key informants reported that the trainings were limited in type and were infrequent.

Most of the trainings focused on awareness trainings, leadership skill, HIV/AIDS and reproductive health, study and life skill (assertive) trainings, computer literacy and are offered during first year. Training opportunities in later year levels are scant. It was also noted that female SWDs had better opportunities of participating in such trainings. As to the reason, participants indicated that most of the trainings were organized by Gender offices in the institutions with the aim to empower female students including female students with disabilities. In reporting positive experiences in training, most of them regard computer literacy training as significant for their participation in learning. Students with visual impairment reported that the application of JAWS software which gave them the opportunity

to use internet, write and read learning materials. Students with hearing and physical impairment also expressed the importance of the training.

> *I came from a rural part of the country and I didn't know what computer is and how to operate it. After I came to this university am able to access computer in the DRC and able to use it for doing academic tasks, assignments and use internet for information.* (Participant 5, a female deaf student, AAU)

Female SWDs also reported positive gains in relation to raised awareness on issues of gender, campus life and acquisition of skills that helped them to be empowered and independent. Then again, participants reported that they needed trainings that empower and enhance their participation and progress in different campus activities. However, the themes of the trainings are limited and provided sporadically. It was also noted that important trainings that would have helped SWDs to adjust with the learning environment was not offered. In this regard, mobility and orientation training was frequently raised by most students with visual impairment. They indicated that adjusting to the campus environment during their first year is challenging particularly for Blind students.

> *I don't think the difficulties that we encounter in this regard are recognized and understood by the university. Because, similar to provisions of learning materials, devices and skill trainings, mobility and orientation training is important for us to quickly adjust with the physical and social environment.* (Participant 8, student with visual impairment, Hawassa University)

Apart from academic and social adjustment, the training is essential to be independent and protected from physical injuries and psychological distress resulted from falling and collision with objects. All participants regarded their own individual effort and support from senior students with visual impairments as enabling factor for adjusting with the higher

education environment. The central role of friends for quick adjustment was illustrated by participant 13. He said that *"the University is so wide and it would have been discouraging for me to without the support of senior friends."* Participant 2 also raised the wideness and complexity of AAU and the difficulty for students with visual impairment to navigate and adjust particularly for students who come from rural areas.

Access to information

Accessing timely and accurate information was another area where most participant students reported undesirable experiences mainly because of lack of support and accommodation in getting information in alternative format. Participants discussed challenges in accessing information from different academic and administrative offices and faculty members. Students with visual and hearing impairment were more vocal than students with physical disabilities.

Participants witnessed some progress in providing information through official websites of the institutions. Information they received in this regard included information on registration date and getting grade report online. Nonetheless, it was reported that posting notices, schedules and various information on notice boards and building walls was the ordinary ways of information delivery method at the universities. Hence, students with disabilities were required to get information informally from other students. The mechanisms these students received information includes directly from their friends and class representatives and indirectly when other students discuss on a particular issue around dormitory, student lounges or classrooms and at the disability resource centers. Participant students with visual and hearing impairments revealed that they had to deliberately ask other students whether there is new information or not. As suggested by these participants, it would

have been better if all the information made available through electronic mode. Participants with hearing impairment revealed that getting timey information mostly from faculty members were problematic.

> *Usually teachers deliver messages on exam dates, changes in schedules, assignments and submission date and other information to the classroom representative. But, sometimes he (the representative) forgets to tell me the message or tells me at the 11th hour. For example, there are times that I missed make-up classes without being informed.* (Participant 18, male deaf student, Haramaya University)

Participant 12 also had a similar experience and said that *"last time I went to attend a regular lecture session but my classmates and the teacher were not there. I didn't know the class was postponed."* This implies, therefore, the right to access information in alternative format was not practically implemented at the universities and led the students to lag behind.

CHAPTER FIVE

DISCUSSION

5.1. Introduction

This chapter discusses the findings of the present study in line with previous pertinent literatures with its implication for theory and practice. The study investigated the experiences of undergraduate SWDs who were learning in three public higher education institutions of Ethiopia. The nature of the students' experience was explored in the four major environments of higher education i.e., the academic, social, physical, and policy environments. In addition, the difference in experience based on some selected demographic variables (gender, disability type, year level, and university) and the relationship existed among the four experience dimensions. Further, the support organization and provision in the universities were also examined.

A sequential mixed method was employed (QUAN-qual approach). Of the population of students with disabilities (n = 530) who were learning in three oldest universities (Addis Ababa, Hawassa and Haramaya) in 2016/17 academic year, 231 randomly selected samples filled in the instrument pack. In addition, 18 purposefully selected SWDs and 3 key informants were part of the qualitative study. The analysis was made based on the research questions and objectives of the study.

5.2.Demographics of the Sample

A total of 231 SWDs (117 or 50.6% students with visual impairment, 68 or 29.4% students with physical impairments and 46 or 19.9% students with hearing impairment) participated in this study. Despite lack of clear data on the respective representation in the society, it can be noted from the study that students with visual and physical/mobility

impairments had better access to higher education than students with hearing impairments. This pattern was also evident in the recent study of Tirussew et al. (2014) that reported only 9.8 % of students with hearing impairment participated. As noted from disability studies conducted over the last two decades in the country, the trend in terms of diversity among students with disabilities seemed unchanged.

These three groups of students with disabilities are also the participants in many of the previous studies in Ethiopian higher education system (UNESCO, 1997; 1999, Tirussew et al., 2014). The likely explanation for this may be students with other types of disabilities are not reaching higher education, they may not disclose their disability status, or they may not be formally identified and assessed at the universities.

With regards to representation of male and female students with disabilities at the institutions, this study showed that the number of female students with disabilities were significantly lower than their male counterparts. Of the total population of 530, the majority (n=383, 72.26%) were males and the remaining 27.74% (n = 147) were females. Accordingly, 71% males and 29% female students with disabilities were included in the study sample that represented the population. Some previous studies (Tirussew et al., 2014; Herbert et al., 2014; Matonya, 2016) reported a similar trend. Matonya (2016) argued that participation of women with disabilities in sub-Saharan Africa is low since the opportunities to obtain any formal education is limited when compared with male peers due to factors including negative attitudes of the parents and the community towards people with disabilities, lack of role models and poor teaching materials and inaccessibility of educational environment. A tendency of parents keeping girls in general and more girls with disabilities in particular due to the socio-cultural beliefs coupled with the high drop out of girls from

primary and secondary schools in Ethiopia (Tirussew, 2006; Katsui et al., 2014) contributed for the gap observed in higher education.

This implies that the socio-cultural and educational barriers female students with disabilities face since primary education should be tackled and it necessitates revisiting the implementation of gender responsive and affirmative action policies and practices for SWDs to further narrow the gap. More importantly, however, it requires a concerted effort to remove cultural, attitudinal and environmental barriers within the society and schools. In contrast to the finding of this study, many studies conducted elsewhere showed higher prevalence rate of female students with disabilities than male peers (Getzel & Thoma, 2008; Garrison-Wade, 2012; Pingry O'Neill, 2012; Wizikowski, 2013; Al-Hmouz, 2014).

The study showed that the participants mean age was 22.38 years and a majority of the participants' (71.86%) was below the age of 23. This finding contradicts with the conclusion made by OECD (2011) that stated students with disabilities reached higher education appear older than the student average. Recent studies, on the other hand, argued that the age difference for completing secondary education and starting higher education between students with and without disabilities is becoming similar (Pingry O'Neill, 2012; Tirussew et al., 2014; Al-Hmouz, 2014). For example, over 72% of participants in Ethiopian universities were between 21-25 with a mean age of 22.66years (Tirussew et al., 2014), while age range from 19 to 23 years with the majority being 20 years old was reported in Al-Hmouz (2014). Citing the data from National Center for Education Statistics (NCES) (2010), Pingry O'Neill (2012) reported that there was a 12.1% percentage decrease in the undergraduate enrollment among students 30 years of age and older between 2003-2004 and 2007-2008, but there was a similar percentage increase in enrollment among younger students between 15 and 29 years

of age. Similarly, Wizikowski (2013) indicated that postsecondary students with disabilities were on average four years older than their typical peers in 2000. But, in 2008, this average decreased to only one year older than their peers without disabilities implying that SWDs are able to start primary education at the appropriate age similar to their peers without disabilities.

Students with disabilities are hardly seen studying natural science and technology fields in higher education. This study also revealed that only 17.7% were enrolled in these fields. The finding is consistent with most previous studies (Fuller et al., 2004; Almog, 2011; Al-Hmouz, 2014; Tirussew et al., 2014). Of the three groups of participants in the present study, students with physical impairment tend to enroll in science and technology fields (36.76%) followed by students with hearing impairment (32.5%), while none of students with visual impairment attended these fields.

With regards to distribution across universities, students with visual and physical impairments were found across the universities. However, the majority of students with hearing impairment were admitted to AAU since most deaf students prefer to study Ethiopian Sign Language and Deaf Culture, the only program in AAU. This implies that the options for these students to choose from universities are extremely narrow.

In addition, a tendency of enrollment of SWDs into social sciences and humanities is not in line with the government's professional mix guideline of 70:30 which was passed a decade ago that gives priority to science and technology. This might be considered as a systemic or institutional discrimination since the pursuit of learning and leading a carrier in the sector is hampered by program and curriculum access. This implies that the employment opportunities of these students are placed in a disadvantaged position since massive work force is required

from science and technology fields. The finding is also supported by the literature synthesis of Mutanga (2017) that reported students with disabilities in South Africa are excluded from engineering and natural science fields. Mutanga further explained that lack of disability awareness of teachers played its own part for the exclusion. For this reason, students with disabilities choose their field of study and specific university in light of their disability (Fuller et al., 2004; Almog, 2011).

5.3.The Nature of Experiences of SWDs

Examining the nature of experiences of SWDs in the four higher education environments was one of the research objectives of this study. Hence, discussion on the four dimensions is presented in the following sections.

5.3.1.Experiences in Academic Environment

The descriptive statistics analysis of this study showed that the majority of students with disabilities had undesirable experience in the academic environment. As noted from the result section, the overall mean score of academic experience dimension (the scores ranged from 26 to 118) was 70.1(*SD* = 17.65), was below the mid-scale value (80). The frequency distribution result also indicated that over two third of the participants (69.7%) had undesirable academic experiences. The findings suggested that students with disabilities encounter greater barriers in the academic environment. Indeed, academic experience sub-scale was the least rated by participants than the rest three sub-scales.

The interview results also suggested that teaching learning processes, assessment, feedback and evaluation practices, disability related support services, technology and accommodations were not responsive to students with disabilities. This implies that the

educational needs of students with disabilities were largely unmet due to discriminatory practices in education.

International and national anti-discrimination policies and laws that promote equal opportunity and inclusion of students with disabilities require educational settings to facilitate curriculum access through making appropriate modifications so as to make the learning environment least restrictive. The findings of the study, however, revealed that lack of accommodation and adjustments in teaching-learning and assessment, which Konur (2006) referred as 'curriculum access', was found to be the major contributing factor for the students' undesirable experience in academic environment. Curriculum access, as noted by Konur (2006), includes presentation adjustment (presenting the curriculum in accordance with the specific needs of the student, for example, in the form of paper text format, signed language format, audio format, script format, or electronic format), response adjustment (which also refers to creating access to the student to respond in the same or preferred format that the curriculum is presented), time adjustment (which commonly applied in extending time during assessment) and setting adjustment (which is related to the physical setting where students take exams, attend lectures and work).

Aspects of the barriers in the academic environment that restrict equal participation and satisfaction of SWDs included lack of disability specific instructional modifications and adaptations in the classroom, teaching materials, such as power points that do not take account of the needs of SWDs, classroom and group activities that are not participatory, absence of human assistants such as note takers and sign language interpreters, learning and taking examinations in inaccessible buildings, absence of alternative assessment methods and accommodations, and poor quality of assistants such as exam readers and scribes.

These barriers, as perceived by participants, were caused by the underlying negative attitude of the university community particularly of teachers and administration which was expressed in terms of lack of attention and concern for the issues of SWDs, less willingness of teachers to make extra effort to use alternative accommodation strategies in instruction and examination, lack of understanding and knowledge on the special educational needs of SWDs and how to provide accommodations. Yet, these factors are considered as key in creating an inclusive learning environment (Swart & Greyling, 2011).

The method of teaching applied in the classroom was an important theme emerged in the study that denies these students the opportunities to equally learn with their peers without disabilities and acquire the maximum advantage out of their participation. Contemporary theories of teaching-learning have given greater attention to teaching methods that actively engages students in the learning process. Empirical evidences showed that this approach helps students to develop skills, knowledge and attitudes so as to operate in new environments, improves academic success, motivation and achievement, promotes inclusion of learners through increasing staff-student and peer interaction, sense of belongingness, and accepting differences and embrace diversity (Altbach et al., 2009; Crosling et al., 2009).

Despite these significances and against the principles of inclusive education, however, the traditional lecture method continue to be the predominant method of teaching in higher education which in turn restricted the participation of SWDs in various classroom activities. This finding is congruent with other research findings which reported how the academic environment caused disablement due to lack of alternative methods that address their special needs and provide equal opportunities for participation in a wide range of academic activities in and outside of the campus (Fuller et al., 2004; Healey et al., 2006; Safder et al., 2012;

Reed & Curtis, 2012; Moriña, 2017).In contrast to student-centered method, this pedagogical approach also restricted the students' participation in classroom activities, note taking, and questioning and answering.

Ensuring access to the curriculum for students with disabilities is primarily the responsibility of managers and teachers to create an educational setting or environment that facilitates students with disabilities' engagement in various activities and learning that leads to success (Crosling et al., 2009). In support of this idea, Obiozor et al. (2010) indicated that instructors and professors in higher education institutions of America, for example, are expected to recognize the special educational needs of SWDs and provide the necessary support required by the student in the classroom during instruction and assessments. However, it was notable in the study that failure to use alternative teaching methods coupled with absence of effective and efficient policy that enforce teachers and service providers perpetuated marginalization in education. Indeed, lack of access to reasonable accommodation caused students with disabilities functional limitation in their learning (Tinklin et al., 2004; Al-Hmouz, 2014).

Another theme surfaced in the qualitative study for reasons of undesirable academic experience was lack of understanding and willingness of teachers to provide curriculum adjustment that is instigated by underlying negative attitude. The finding correlate with previous studies which underlined the centrality of teacher attitude and knowledge for a successful integration in the academic environment of higher education and the difficulty these students experience due to lack of either of the two or both (Rao, 2004; Konur, 2006; Crosling et al., 2009; Garrison-Wade, 2012; Tirussew et al., 2014; Matonya, 2016; Abdella, 2017; Moriña, 2017). In the study of Fuller et al. (2004), for example, unwillingness of some

teachers were expressed in the form of forbidding their lecture to be tape-recorded, unrealistic expectations about the amount of new reading that students could reasonably manage during a taught session, or failing to provide user-friendly handouts. In addition to less willingness of teachers to make adjustments, questioning the capacity of SWDs to study in university (Moriña, 2017), inattention to whether students with hearing impairment understood instructions or not (Safder et al., 2012) and relaying too much on visual formats, like PowerPoint (Reed & Curtis, 2012) were challenging for students with disabilities which are reflections of negative attitude.

In contrast to the perceptions of SWDs in this study, a recent study conducted by Abdella (2017) on instructors' willingness to provide instructional accommodations to SWDs in four universities of Ethiopia (Jimma, AAU, Adama and Ambo) reported high willingness. Other studies also reported similar findings (Vickerman & Blundell, 2010; Mutanga, 2017). Despite teachers' willingness, however, the authors also indicated that making major changes in teaching learning and assessment is found to be less.

Parallel to willingness, teacher's lack of knowledge on how to make adjustments was also raised by participants in the present study as a barrier to receive accommodations. It was revealed that some teachers were positive and encouraging, but making adjustments was a big challenge. In support of this finding, teachers in study of Kioko and Makoelle (2014) admitted that they had doubts about their awareness and knowledge about specific disability categories despite their efforts to provide support. Indeed, lack of knowledge regarding accommodations is a significant barrier for SWD (Sniatecki, Perry, & Snell, 2015). From the extensive literature review, Moriña (2017), found that positive experiences in the learning environment came from faculty that have increased awareness and knowledge of the

characteristics and needs of students with disabilities, and those who incorporate concepts of universal design into their instruction and curriculum.

The available support services at the institutions did not match the requirements of the students and is perceived as a major factor for undesirable academic experience. The consequence of not getting appropriate support and accommodations in their education was reflected in the emotions and experiences of participants of this study. Despite their utmost desire to interact with teachers, to be encouraged, motivated, understood and supported by their teachers, most SWDs were forced to depend on services at DRCs and some friends to fill the gap in accommodations. This required them to make extra time and effort to cope with the competitive academic environment and successfully complete higher education. Hence, students end up with academic stress and psychological distress. As also evident from the study of Garrison-Wade (2012) study, a feeling of self-doubt to succeed, stigmatized, marginalized and perception of viewed as a problem by others was the resulting effect of lack of understanding and low expectation of others particularly of faculty members.

The implication of these experiences is that in order to address the special educational needs of SWDs and maximize their opportunities to equally participate in learning activities, teachers' disability awareness and instructional accommodation trainings are decisive if not exclusive. Taking courses on special needs education in pre-service teacher training or university programs and in-service specialized trainings seemed to contribute for better teacher willingness and practice to provide accommodations to SWDs (Matonya, 2016; Abdella, 2017). The literatures reviewed by Moriña (2017) also reported that the attitude of the faculty members improved after they had been trained and had more experience in how to respond to the needs of the students with disabilities.

Collaboration between teachers and departments with student support offices was found to be helpful in increasing teacher's ability to teach a diverse range of students (Kioko & Makoelle, 2014). This implies that higher education institutions are expected to challenge the status quo and begin to restructure their institutional ethos and practices. For example, redesign their curriculum emphasizing the principles of inclusive education and universal learning designs so that teachers will be prepared to meet the learning needs of diverse students in higher education.

Response, setting and time adjustments are related with making assessment and evaluation practices responsive to the special educational needs of students with disabilities. Today, the purpose of assessment is changing. Measuring students' performance in carrying out pre-defined tasks in a pre-defined environment referred as 'assessment of learning' (WHO, 2013) has long been criticized and taking assessment as an integral part of the curriculum that should be used to gain information on achievement or progress in learning which is referred as 'assessment for learning' is gaining acceptance.

This study, however, revealed the continuation of using assessment for the former purpose. Despite the need for adjustments, as suggested by Konur (2006), alternating assessment modes tailored to the needs of students with disabilities was almost non-existent. The finding showed that examinations and assignments were entirely written based that didn't take the diverse needs of students with disabilities into consideration. Previous studies also reported that written course work and written based examinations were the most confounding factors in the education of these students (Hall & Healey, 2004; fuller et al., 2004; Hanafin et al., 2007).

Another concern for the participants was the uniformity of assessment and evaluation procedures that teachers use. These procedures were similar for all students and it was one of the major aspects that the academic environment of higher education failed to adequately respond to the special needs of students with disabilities. This raised a question among participants over the fairness of the procedures in the absence of equal opportunities in education. In congruent with the findings, the issue of unfairness of assessment and evaluation procedures was reflected by participant women with disabilities in Matonya (2016) study. They reported that the university grading system was a challenging experience as it didn't consider their backgrounds.

When assessment and evaluation procedures take the special needs of students with disabilities into account such as alternative format tests, exam arrangements, extra-time, use of computers and technology and flexibility in assignment and test dates, on the other hand, it yields a positive academic outcome and foster inclusion (Hall & Tinklin, 1998; Kioko & Makoelle, 2014) and is among the determinant factors that predicted student graduation (Pingry O'Neill et al., 2012).

For some students, the problems come from inaccessible exam sites or buildings. Students with visual impairment in the present study indicated that the most stressful barrier they experienced in assessment was taking exams in open settings that exposed them to sound disruptions and unfavorable weather conditions. Inaccessible buildings, roads and walkways, long distance between buildings and absence of accessible and clean toilet around buildings severely affected the assessment experiences of the students with disabilities.

The effect of access problems during examination was also indicated in the study of Hanafin et al. (2007). Participants in the study of Hanafin et al. reported that they were

challenged by buildings that had no ramps, shortage of accessible toilet and going to remote toilet and back. Hence, students were required to waste extra time and effort to negotiate with the physical environment and being assessed under pressurized examination conditions which have a direct effect on the achievement.

Poor quality of exam readers and scribes particularly for students with visual impairment was another source of difficulty. Although the service was available at the institutions, the pros and cons of the service had not been assessed. Consistent with this finding, Alomg (2011) revealed that participants experienced challenges from assistants who are unfamiliar with terminologies of the field, insensitive towards students with visual impairments and their needs and assistants who had unclear accent. Previous studies in Ethiopia also reported similar findings (Yared, 2008; Tirussew et al., 2014) that higher learning institutions tend to keep traditional institutional cultures and resistant to change the status quo of teaching-learning practices despite their rhetoric of student-centered teaching methods.

Unlike the findings of previous studies in Ethiopia, a progress in applying continuous assessment in the form of classroom tests, individual and group assignments or projects was noted in the present study. The use of continuous assessment modes is essential to promote and enhance learning, students' confidence, motivation, and engagement in higher education (Crosling et al., 2009). From the perspective of SWDs in this study, however, a couple of problems affected the effectiveness of the use of continuous assessment. In addition to absence of response adjustment in the students' preferred format, most teachers used assignments as a strategy to share their burden to the students and cover the contents/topics that they were not able to cover within the specified time period of a semester. Individual and group assignments of different courses often come together and towards the end of the

semester. It puts the students under pressure and caused stress to the students. Although it is natural for all students to be stressful and feel anxiety at the time of examination, however, it is much more stressful and frustrating for students with disabilities because of the absence of enabling environment and the presence of inequalities in educational opportunities in higher education.

Another important element in assessment for learning is teachers' feedback on assignments and academic progress. Feedback is significant for both the students and teachers (Crosling et al., 2009; Obiozor et al., 2010; Kioko & Makoelle, 2014). For students, it plays an important role in their academic success, interaction and involvement with other students in learning in the classroom and for teachers, it gives an opportunity to initiate and maintain communication with the students. Despite the immense contribution feedback has, this study revealed that feedback either on assignments, tests exams or on academic performance was unavailable. Most students with disabilities were not asked by their teachers about their special educational needs for accommodation, they had never been given feedback on their achievement and progress.

Similarly, in line with issues of learning assessment, the available support services provided to SWDs were not informed by formal assessment practices for identifying specific learning and accommodation needs of the individual student. Since students with disabilities are heterogeneous group, their support needs may differ and can change overtime (Swart & Greyling, 2011). Therefore, this requires careful and continual assessment of needs to be in place to provide individualized support, which did not exist.

Overall, the barriers SWDs experience in assessment and evaluation has a backwash effect on the curriculum and teaching process as the practices and procedures are restricting

students to achieve success to the best of their potential. The participants of the study also consider the results in exams and their cumulative grade point is the output of their individual effort that was obtained with little support at their universities.

The implication of these findings, therefore, is SWDs in higher education institutions of Ethiopia are experiencing marginalization in academic environment due to lack of equal opportunities and lack of reasonable accommodations in teaching learning and assessment. Unless the equal rights of these students are ensured and given the same educational opportunities like that of students without disabilities, the barriers will likely to be further aggravated as diversity of these student population coming to universities increases.

5.3.1.1. Relationship between background Variables and Academic Experience

Multivariate Analysis of Variance (MANOVA) was used to examine differences in student experience in academic environment as a function of some selected background variables (gender, type of disability, year level, and sample University).

Accordingly, the result showed that there were a statistical significant difference in the academic experience means scores of groups of gender and sample universities. With regards to the difference in AE as a function of gender, the result showed that there was a statistically significant academic experience means score difference between the two groups. Female students with disabilities (M = 75.66) had shown better experiences in the academic environment than that of male students with disabilities (M = 67.82).

In support of the finding, Pingry O'Neill et al. (2012) observed female students graduating approximately 1.5 times larger than male students with disabilities which the authors reported that their result was also consistent with the national report of NCES of the USA (2010). Another study by Jorgensen, Fichten, and Havel (2012) in Quebec colleges and

their review of other research evidences elsewhere indicated that the participation and completion rates are better for females than males. In contrast, a comparative study of Wasielewski (2013) between students with and without disabilities, female SWDs was exceeded by their peers without disabilities as measured by cumulative GPAs. However, a statistical significant difference was not observed between male students with and without disabilities. This implies that female SWDs showed lower academic performance.

As noted from the qualitative study findings, additional services such as financial assistance and trainings on self-empowerment and skill development trainings such as leadership and study skill they had received as part of gender responsive practices in the respective universities were perceived as the possible explanation for the difference. In addition, the tendency of female students to study longer, harder and in a team was another explanation emerged that attributed to the difference. In relation to working in group, similar to the finding, female students with disabilities in the study of Matonya (2016) often used small group discussions and indicated it was an effective strategy for their successful participation in higher education.

Despite its long history of admitting students with disabilities, being a pioneer in establishing a special needs support service and rendering a relatively better support services, the mean scores of participants at AAU were lower (M = 65.48) than the mean scores of participants from Hawassa (M = 75.02) and Haramaya universities (M = 74.98). The available few previous studies also reported better status of AAU in terms of support structure and diversity of support for students with disabilities (Yared, 2008; Tirussew et al, 2014).

Taking the relative difference in history of admitting students and the number of SWDs among the institutions, one may have an impression that the institutions vary greatly in terms of program and curriculum accessibility. However, the qualitative study yielded similarity on students' experience in terms of perceived facilitators and barriers in the academic environment among universities. One possible explanation notable for the variance was that participants from AAU seemed less happy with their academic environment due to discrepancy between expectation and actual support from their university and teachers. Participants had higher expectation for better access and services in AAU and this expectation led them to choose the university. Mismatch between expectation and reality about the support services and accommodations seemed to affect the students' academic life at universities. Participants in the study of Matonya (2016) conducted in Tanzania revealed that their higher expectation of modern support facilities made them to apply to the university, but they felt that access to the facilities was found to be poor even compared to access in their lower educational level.

Similarly, the mismatch between the number of students seeking disability related support at AAU and the available support services might also caused shortage of resources that led to dissatisfaction. In support of this idea, Tirussew et al. (2014) indicated that this might be true as the number of students with disability increases their education might be affected due to scarcity of resources.

5.3.2. **Experiences in Social Environment**

One of the objectives of this study was to determine the level of experience of students with disabilities in the social environment of higher education institutions (SE). The descriptive statistics result indicated that, although a significant number of participants

showed a desirable social experience, most of them (54.9%) had undesirable experience. From the qualitative study, it was also noted that the social and attitudinal environment of higher education is critical for academic and non-academic engagements and overall success of students with disabilities. Although some interview participants reported facilitators for desirable social experience, the social environment was still segregating and had multifaceted consequence on many areas of student experience.

The attitude of the university community was the central theme that was emerged as an explanation for the undesirable social experiences. In fact, the determinant effects of the attitude of others towards students with disabilities to the success and inclusion in higher education have been reported in many studies (Rao, 2004, Almaz, 2014; Tirussew et al. 2014; Al-Hmouz, 2014).

Above all, it was revealed that the attitude of instructors is the most influential not only on their social integration and interaction in their university but also on provisions of support services and accommodations in the learning environment. It was also noted from interview data that students who had positive interaction and received encouragement from their teachers expressed better satisfaction with their academic experience despite the extent and adequacy of support provided.

The implication of this is that teachers need to be aware of the enormous impact communication and encouragement has on the students' feelings of acceptance, belongingness, satisfaction and overall success. Capitalizing on the importance of attitude of faculty members towards students with disabilities, Rao (2004) and Herbert et al. (2014) indicated that it is essential to establish one's identity and self-determination to persist and achieve success. All participants with disabilities in Kioeke and Makolle (2014) study also

believed that positive relationships and interpersonal communication were the essential parts that contributed for their positive social and academic experiences in their university.

However, as evident in this study and argued by other researchers, lack of awareness and knowledge were additional barriers to implement inclusive theories and strategies even if faculty had positive attitude (Swart & Greyling, 2011; Sniatecki et al., 2015; Morina, 2017). Confirming this finding, teachers in the study of Kioeke and Makolle (2014) and Sniatecki et al. (2015) had reported a general positive attitude towards SWDs but also revealed lack of awareness and knowledge on support. Furthermore, teachers in these studies professional development opportunities and support from disability offices might reinforce their support to the students. This implies that issues of disability and inclusion need to be incorporated not only in pre and in-service teacher trainings but also across all disciplines in higher education institutions.

As to the teacher-student relationship, it was expressed by most participants as distant, rejecting and not caring. Participants perceived that most instructors did not have the will to interact with SWDs, to get to know and understand not only the special educational needs but also their abilities or qualities, and provide basic accommodations that do not even require special trainings. These findings are consistent with previous studies that reported attitude of faculty members as the most significant barrier that subjected students with disabilities for feelings of isolation and marginalization (Leake & Stodden, 2014; Tirussew et al., 2014; Moriña, 2017).

Students with disabilities reported lacked appreciation, encouragement, and cooperation from most of their teachers and described as unwilling to listen to their problems and respond to their needs. In support of this argument, Fuller et al. (2004) for example, revealed that

teachers were unhelpful to make accommodations and be flexible though they were fully aware of the presence and needs of SWD. In such instances, the negative attitude held by teachers towards students with disability plays more than lack of knowledge. As a result, students with disabilities indicated that they kept themselves from interacting and asking personal and academic support from their instructors.

Interaction with administrative staff is yet another equally important factor for the students' desirable or undesirable social and academic experience at university (Rao, 2004). The study revealed that there was a wide gap in interaction and communication between administrative staff and SWDs. In addition, most of the staff was unwelcoming, lacking awareness and concern about the needs of SWDs. A tendency of not responding to students' request of services or complaints in a timely manner, reluctance in renovating or relocating administrative offices to help SWDs easily access buildings and designated personnel, reluctance in availing human assistance such as sign language interpreters for deaf students and a tendency of taking disability issues as a separate and sole responsibility of disability support offices was noted as indicators of poor interpersonal interaction and communication.

Friendship with other students is regarded as an essential protective factor since students can get practical and emotional support from peers (Fuller et al., 2004, Shevlin et al, 2004; Matshedisho, 2010, Swart & Greyling, 2011, Mutanga, 2017). This study showed that social interaction of students with disabilities was relatively better with peers without disabilities than faculty and administrative staff. Some participants revealed the indispensible role their friendship played in increasing self-confidence, a sense of acceptance and belongingness to the campus environment and in fostering their persistence in higher education through personal and academic support such as sharing information and learning materials, studying

together, going out for shopping and spending leisure time in and outside of the campus. For these students, the role of friendship also extended to easy adjustment of the campus environment.

Coming and adjusting to the higher education environment is a new and difficult experience for all students. Since, most of these learning institutions are not disability friendly, for students with disabilities adjustment may take more time and effort than students without disabilities. Starting social networks and having friends as early as possible has a potential to reduce the struggle these students might go through without their support (Moriña, 2017). Participants of this study who had friends during their arrival or soon after had the opportunity to navigate through a campus environment and were given with relevant information for easy adjustment. However, similar to the finding in Hadjikakou et al. (2010), the majority of them had to struggle on their own.

Indeed, the social environment was not conductive and interactive for most participants of the study mainly due to perceived negative attitude of other students. For this reason, in line with the literature, they tend to socialize within their own group. Socialization of students with hearing impairment was exacerbated by barriers in language and communication in addition to attitudinal factor. Unwelcoming social climate blocked most participants from establishing friendships with peers without disabilities. Apart from lack of interaction and communication, they revealed that they experienced some form of rejection that was reflected, for instance, during group works and activities that require collaboration of all students. Consistent with the finding, students with visual impairment in Reeds and Curtis (2012) study felt that peers without disabilities often become nervous around them.

Problems of getting timely information related to both academic and non-academic aspects were part of the consequence of distant relationships among students. Although some studies reported a general positive social experience of SWDs with peers without disabilities (Jacklin et al., 2007; Almog, 2011), the lack of interaction and poor socialization of SWDs with peers without disabilities reported in many studies can be seen as a representation of unwelcoming social climate of higher education institutions. In supporting this finding, a study conducted in Jordan by Al-Hmouz (2014), reported that about 78% of participants (students with visual, hearing and physical impairment) revealed experiencing attitudinal problems in campus and about 87% did not have friends without disabilities and they hardly received support from students without disabilities.

In general, the study revealed that the extent of interaction between students with disabilities and the academic and administrative staff is problematic since it severely affected the students' social and academic integration. Although socialization and peer relation with students without disabilities was also affected the social experiences of some of SWDs, a positive progress was also observed in the relationship between students with and without disabilities which resulted positive outcomes in forming student's identity through developing a positive attitude towards themselves, self-esteem and self-confidence.

Clearly, the positive impact of good interaction, communication and encouragement on the self-confidence of students with disabilities which was expressed in terms of coming forward to talk about their disability openly and communicate with academic and support staff was found in the study of Kioko and Makoelle (2014). In their review of various articles, Leake and Stodden (2014) found out that students who felt socially accepted are more likely to persist and graduate than those who do not. The authors, however, found out

that most students with disabilities experienced social marginalization on campus as a result of many social barriers and they are more prone to dropout as they often experience stigmatization and social exclusion due to negative attitudes of the university community. Summarizing the works of other researchers, Leake and Stodden (2014) concluded that students with disabilities more likely to dropout unless they develop supportive social networks and feel that they belong to the campus environment within eight weeks of arriving on campus. This is alarming since the attention given to the social dimension of student experience by higher education institutions or disability support providing offices is significantly low.

Hence, structured programs that facilitate the participation and engagement of SWDs in social and various co-curricular activities that may improve interaction of SWDs with other members of campus community and accelerate inclusion was non-existent. Participants with hearing impairment in Safder et al. (2012) study also revealed that there was no system that encourages them to participate in social and different activities.

Participation in different clubs and societies at higher education institutions provides opportunities for students with disabilities to become active members of the university community, to enable them to socialize, make friends and advocate and raise awareness about disability (Yoh et al., 2008; Swart & Greyling, 2011). The few interview participants of the study who participated in these activities ascertained that they gained important life and job skills, able to interact with members of the university community and become active members as well. However, the study revealed that the majority of participants were not participating in extra-curricular activities such as in different student clubs and movements in the campus and leisure and sport activities. The comparative study of Saches and Schreuer

(2011) between students with and without disabilities also indicated that the participation of students with disabilities in class activities and extracurricular activities like music and arts was less than their peers without disabilities.

The major factors for non-participation was related to unavailability of sign language interpreters that facilitate communication for deaf students, the physical inaccessibility of offices of some clubs that restrict students with physical/mobility impairments from attending, lack of adequate information about extra-curricular clubs and their activities, lack of interest to participate in such activities, fear of discrimination and stigma on the basis of their disability, difficulty with adjusting with campus life.

Moreover, as has been discussed, students with disabilities tended to give priority for learning and studying due to fear of dismissal caused by high academic competition with peers without disability and limited effort from the clubs and the university to encourage SWDs in such activities. In congruent with the finding, Leake and Stodden (2014) reported that the participation of SWDs in these activities was found to be insignificant and the negative and stigmatizing perceptions of disabilities commonly seen in different co-curricular centers or clubs were the major reason for non-participation. As clearly noted in the study of Tinklin et al. (2004), non-participation of SWDs participated in their study not only resulted in lack of social networks but also missed the opportunities for informal learning which would have been important for positive higher education experience.

It was noted from the study that members of the universities community i.e., university managements, support providers, departments either were not aware of the benefits of extracurricular activities for the holistic development and desirable social experience of students in higher education or they were inattentive to the needs of these students. Absence

of strategies that enhance the students' participation in these activities in support packages of the universities can be seen as indicative of lack of concern and attention. Reporting a similar finding, Leake and Stodden (2014) revealed that equal access to co-curricular activities and the importance of supportive social relationships was not considered as an essential domain in the student support system and in disability accommodations policies of higher education as well.

5.3.2.1. Relationship between background Variables and Social Experience

An attempt was made to see the statistical difference in participants' mean scores of SE dimension as a function of some demographic variables, gender, type of disability, year level and the sample universities. Except the university variable, the remaining variables didn't result significant mean score difference between groups. Hence, the finding showed that participants from AAU had a higher social experience with a mean score of 61.32 (*SD* =13.46) followed by Hawassa University (*M* = 59.69, *SD* = 16.78) and participants from Haramaya University (*M* = 52.33, *SD* = 12.46) have the lowest social experience.

Again, as noted from the qualitative study, the facilitators and challenges in social environment at the institutions were commonly shared by students with disabilities. Possibly, however, better socializations in AAU may come largely from students' relationship within their own group and other students without disabilities. In fact, AAU is known for admitting large number of students with disabilities for a long time than the two universities and a pioneer in establishing and providing support services to these students. Hence, the likely explanation for this might be the change in attitude of students without disabilities due to more contact and direct experience of learning and sharing facilities with students with disabilities.

The presence of large number of students in general and students with disabilities in particular might give them, though further research is required, the advantage to be member of student groups of both with and without disabilities. Swart and Grayling (2011) also argue that growing diversity including SWDs of campus community is an asset that provides opportunity to socialize, participate and choose friends. Students' interpersonal contact also plays an important role in reducing stereotypes and prejudice against students with disabilities (Almog, 2011).

In addition, there was a statistical PE mean score difference among groups of university (see Table 24 and 27), where the mean scores of participants from AAU was higher than Haramaya and Hawassa Universities. Therefore, the relative better accessibility of AAU might be another factor that created opportunity for social contact between students with and without disabilities.

The possible explanation that suggests the relative accessibility of AAU provided a relative advantage for social interactions was supported by Christensen (2010) by stating that positive physical environments facilitate the opportunities for passive contact through spontaneous casual interactions that may develop into more involved relationships, proximity to others and appropriate space to interact.

5.3.3. **Experiences in Physical Environment**

In the analysis of participants' experience in the physical environment, two important findings emerged. The first one was that the institutions investigated were engaged in efforts of removing architectural barriers to improve accessibility of buildings and facilities to enable students with disabilities to make university life less challenging. Placement of students with disabilities on ground floor or accessible dorm rooms, construction of ramps in

entrances of new buildings and some of the old buildings such as library, dormitory and cafeteria, reconstructing roads and walkways, and renovating toilets and shower rooms around dormitories were part of the efforts identified.

Despite the optimistic initiatives noted, however, SWDs being deprived of equal opportunities for participation in curricular and extra-curricular activities in higher education due to partially accessible or lack of access to the larger part of the built environment and facilities was the secondly emerged finding of the study. Although students benefited from the newly constructed and retrofitted parts of the built environments, however, most of these areas were partially accessible. For instance, the renovated toilet and shower rooms were not corresponding with the number of students (one renovated toilet in male and female dormitories each), shower rooms was not easy for some students to operate by themselves, and wheelchair users and students with severe physical disability were unable or struggle to use rooms and facilities located upstairs though they may have ramps at the ground floor.

Inaccessibility of the built environment also influenced the experiences of students with visual and physical impairments negatively. Of the total sample (n =117), 70.09% of students with visual impairment and 57.35% (n = 68) of students with physical impairments had mean scores below the mid-scale value indicating a substantial number of these participants had undesirable experience in the physical environment. Congruent with the present study, previous studies done in Ethiopia also reported the overwhelming frustration of students with disabilities due to inaccessible physical environment (Yared, 2008; Tirussew et al., 2014). For example, in the study of Yared (2008), almost all aspects of the physical environment and facilities of the institutions such as classroom buildings for lecture and exams, libraries, toilets, roads and pavements were not accessible for these students.

This finding is also compatible with many other studies that reported the continuation of the built environment as a disabling factor in higher education despite the enactment of endless anti-discrimination policies that urge higher education institutions to provide barrier-free university environment (Almog, 2011; Klinger, 2014; Al-Hmouz, 2014; Matonya, 2016; Morina, 2017). For example, Klinger's (2014) scoping review of 49 articles on physical accessibility for students with physical/mobility impairments revealed that out of nine ICF categories of accessibility used for analysis, the barriers identified was numerous in eight of them. Similar to the finding of the present study, the only facilitator identified was related to accessible housing or dorm room and dining halls (cafeterias). This entails the extensiveness of the problem and the degree of inequality existed between students with and without disabilities in terms of access. This gap calls higher education institutions to be pragmatic in putting policies and laws that promote inclusion into practice.

As has been noted from the result section, access to classrooms for lecture and examination was the significant challenge experienced by the participants. Wheelchair user students in particular experience double discrimination at their institutions. On one hand, lectures and exams are often assigned upstairs of classroom buildings and on the other hand, they find most teachers less willing to relocate classes to accessible rooms. Another most pressing finding of the study was the problem of finding accessible toilet during lecture and examination which was frustrating as it leaves them with the option of either returning back to dormitories or wait until the end of either of the academic tasks. Lack of access to toilet, as reported by WHO (2011), also affects the everyday life of peoples with disabilities. The finding concurs with the study of Garrison-Wade (2012) that reported that it was among the major source barrier for students with disabilities.

Distance between buildings and facilities within the campus and sub-campuses was another barrier that affected the students' experience as it caused them fatigue, health problems, and miss out lectures and exams. This challenge and its consequences on the academic, physical, psycho-social and health of students with disabilities are the most overlooked aspect in higher education practice and disability research in Ethiopia. Similarly, arriving late for lecture due to obstacles such as open pits on roads, lack of teachers' understanding about the challenges of SWDs, such as getting angry on late arrival were also the reported challenges in Tirussew et al. (2014) associated with distance problems. Healey et al. (2006) confirmed that distance was identified a significant barrier in missing lectures in higher education. Currently, establishment of new public universities and massive expansion projects within many of the existing universities is evident. Since, the universities cover a wide geographical area, most new buildings and sub-campuses are constructed far from the center and student residential areas.

Recreational areas and sport fields and facilities were another environment that portrays the exclusion of students with disabilities in higher education. The participation of the majority of these students in these activities was extremely low due to inaccessibility and lack of adapted facilities. Inaccessibility has not only influenced academic participation but also, as confirmed by Shevlin et al. (2004), mediated as an obstacle for students with mobility impairments in their pursuit of normal involvement in college life, programs and events. Non-participation of students with disabilities in extra-curricular activities was also exacerbated by inaccessibility of the built environments and facilities. Despite the importance of regularly participating in physical and recreational activities in improving social

relationships, physiological strength, enhancement of self-esteem, Yoh et al. (2008) revealed that the participation was significantly low for students with disabilities.

The consequence of inaccessible environment is not only limited to getting into these buildings and locations and reduced participation in curricular and extra-curricular activities but also affects independence and led students to relying on the support of others. In support of this idea, Morley and Croft (2011) found that the built environment impeded the independence of students with disabilities and forced them to seek external support from peers. As discussed in the social experience dimension above, however, support from others is not always possible as disability is not free from negative attitude and prejudice. Hence, they are required to invest extra effort and time to adapt or negotiate the environment that is built for peoples without disabilities. This was confirmed by Shevlin et al. (2004) as participants reported expend enormous amounts of time and energy in negotiating many seemingly accessible buildings. Another study by Matonya (2016) also indicated that female students with disabilities had to walk slowly and carefully so as not to get lost or obstructed and therefore it takes them longer to reach the classroom. It was further revealed that these students required an assistant so that they wouldn't be lost and miss classes. Therefore, it was another source of stress for these students that they have to deal with as it affects the academic and social integration.

The effect of inaccessibility of the built environment discourages students with disabilities to participate in higher education and is one of the leading factors for dropping out (Matonya, 2016). The implication of the study, therefore, it is pertinent to design and construct buildings, facilities and physical structures in line with the principle of universal design so as to make the infrastructures usable by all peoples.

5.3.3.1. Relationship between Background Variables and Experience in the Physical Environment

Examining the relationship between background variables and PE was another purpose. Of the four independent variables, type of disability and university variables resulted in significant mean score PE difference among the groups, while gender and year level background variables did not. As to the difference as a function of type of disability, students with hearing impairment had desirable experience in the physical environment (M = 38.37, SD = 10.25), while most of participants with visual and physical impairments had mean scores below the mid-scale value with a mean of 26.06 (SD = 8.31) and 29.06 (SD = 10.08) respectively.

The possible explanation noted from the study is that accessibility of the physical environment is preventing equal participation of most students with visual and physical impairments in many aspects of student life in higher education. In substantiating this assumption, Almog (2011) suggested that students with visual impairments experience barriers in the physical environment of higher education as it is designed and constructed for students, faculty and administrative staff without disabilities. Hence, it caused functional difficulty to the individuals. The finding of Al-Hmouz (2014) also concurs the finding that reported only 10% of the participants reported most part of the physical environment was accessible, while the remaining felt that either some part of the environment was accessible to them or at all. In contrast to these findings, most participants with physical impairments in the study of Hadjikakou et al. (2010) were satisfied with the physical access of their campuses as there were special parking places, ramps, lifts and able to easily reach different

rooms within the institutions although the universities was chosen by the students for their better accessibility.

The implication of the finding is that it is essential to include the needs of students with disabilities in architectural designs and constructions so as to ensure equal opportunity, full participation and inclusion in curricular and extra-curricular activities. Using the principles of inclusive education and universal design is suggested as strategies to overcome access barriers (Morley & croft, 2011; Yoh et al., 2008; Klinger, 2014; Morina, 2017).

As to the university background variable, the study showed that the experiences of students at AAU had higher PE mean score (M = 32.04, SD = 10.53) followed by Haramaya University (M = 28.17, SD = 10.14) and participants from Hawassa University had lower level of experience with the overall mean score of 26.53 (SD = 8.70). It was noted in the study that the three institutions were making modifications in the physical environment. However, some factors may contribute to the relative difference among the institutions.

The larger student with disability population in AAU was reported by the key informant as a push factor for the disability support service office and the university to engage in environmental accessibility activities. Indeed, given the number of students with disabilities, the enormous barriers students face in the built environment, and the increasing enrollment trend of students with disabilities into the university, removal of architectural impediments should be a priority. Possibly, being the oldest university in admitting students with disabilities and a pioneer in establishing disability support office may put pressure on the university to provide access equivalent that matches its reputation.

5.3.4. **Experiences in the Policy Environment**

Examining the experiences of students with disabilities in the policy environment of higher education was part of the objectives of the study. The descriptive statistics analysis revealed that most of students with disabilities had undesirable experiences in the policy environment. This finding was also supported by the qualitative study that showed the human rights of students with disabilities that are enshrined in various internationally binding human right and disability right instruments were not fully ensured and protected since the institutions did not have a disability specific policy or clearly articulated policy statements in compliance with international human right instruments. Lack of equal opportunities for access and participation in academic, social and physical environments exhibited in this study also reflected the gap in policy and practice in the institutions. This finding concurs with the previous studies done in Ethiopia (Yared, 2008; Tirussew et al., 2014).

Although the education policy and disability related policies at national level assumed to facilitate the increasing enrollment of students with disabilities at different levels of the education system in Ethiopia and required institutions to enable them to learn with their needs addressed and make their facilities, programs, academic and physical environments accessible to these students (MoE, 1994; FDRE, 2009), the experiences of students with disabilities in higher education does not reflect inclusion.

In fact, the passage of anti-discrimination laws in U.S. America and international human right conventions and declarations led to the development of national and institutional level public policies and disability specific policies are attributed to the increasing access and participation of students with disabilities in the global higher education system (Stodden, et al., 2001; Konur, 2006; Morely & Croft, 2011; Moriña, 2017). These legal frameworks

brought a paradigm shift in conceptualization of disability as a restriction in the environment that the society imposes through its cultures, practices, and policies as opposed to viewing disability as charity, individual deficit and abnormality and secondly, by underscoring education as a human right and therefore exclusion based on disability is an act of violation of human right.

In contrast to the findings of this study, students with disabilities in European countries are entitled to access to and within higher education institutions although the legislative forms varies country to country (European Agency for Development in Special Needs Education, 2006). The study of the agency further showed that the responses of higher education to legislative changes resulted in at least four major positive developments. It contributed to create a more easily accessible learning environment, changes in societal views of disability, provides flexible enrollment schemes through different qualification routes, and enables student litigation for access to support services.

However, it is a global reality that equal rights for equal opportunities are yet to be ensured within higher education. The outcomes between students with and without disabilities are still wide. For example, representation of students with disabilities particularly of women is very low and the exclusion they experience due to a wide range of social, physical and academic barriers is much higher than students without disabilities. Because of the existing inequalities, Morina (2017) from extensive review of different literatures concluded that students with disabilities are at greater risk of early dropout than their peers without disabilities.

In congruent with the finding of this study, Obiozor et al. (2010) argued that either lack of effective disability related legislation and policy or failure to implement well developed

policy plans are affecting the development of African institutions and the teaching of students with disabilities. In support of the argument, Mutanga (2017) and Matshedisho (2010) indicated that despite the recognition of the right of education and support for students with disabilities, higher education institutions of South Africa failed to transform these rights into real rights which played for the continued exclusion and inequality. On the other hand, Emong and Eron (2016) the legal frameworks and a bulk of infrastructures aimed at promoting inclusive education in Uganda gives much emphasis to primary and secondary education than higher education. This seems the existing reality of many African countries including Ethiopia.

Because of failure of higher education institutions to enforce basic human right and disability right laws, therefore, students with disabilities are placed in a disadvantageous position due to lack of appropriate support and accommodations that would have contributed immensely to their academic success (Morely & Croft, 2011; Pingry O'Neill et al., 2012). The attention given to policy issues in universities of Sub-Saharan Africa is so little which enabled the institutions to maintain the status quo of inequality of students with disabilities (Morely & Croft, 2011).

As evidenced in this study and the previous studies, the problem was not only limited to lack of clearly articulated policy but also implementing the available legislations. Key informants of this study reported the increasing attention is given to the issues of students with disabilities by the leadership of the universities than ever before. However, the commitment of the leadership was not reflected in translating the national policies and proclamations into specific guidelines and strategies and more specifically in putting the available legal documents in to practice. A study by Tirussew et al. (2014), for example,

indicated that despite having different articles in the senate legislations of most public universities investigated, limitations in disseminating and executing the available legislative provisions were observed.

Participants of the study lacked awareness on whether national and institutional policies or policy statements about disability issues exist or not. The recent study conducted by Tirussew et al. (2014) in Ethiopia also reported a similar finding. Possibly, lack of access to information and problems of dissemination contribute in part for the gap. Lack of awareness about the policies or legal frameworks that guides access, inclusion and support services to students with disabilities in higher education seemed a similar trend in literature. Summers et al. (2014) in their examination of researches done earlier and recently on knowledge of students with disabilities about their legal rights found out that lack of knowledge appears to continue to be the case. The finding of Summers et al. (2014) seemed acceptable since the most recent studies also reported similar findings (Moriña, 2017; Al-Hmouz, 2014; Hadjikakou et al., 2010).

In order to overcome the structural inequalities present in higher education and to level the playing field for all, Morina (2017) also suggested that designing policies and strategies that promote inclusive education and universal design of learning is necessary. However, Al-Hmouz (2014) argued that developing inclusive policies is not sufficient to create a fairer higher education environment unless the legislations are enforced and the practices and procedures are continually reviewed. Moreover, this institutions need to be challenged (Vickerman & Blundell, 2010), as discussed in the literature section, to detach from a bio-medical perspective of disability that blocks institutions from embracing diversity and to emancipate to create welcoming and accommodating environment. This may have useful

implications to researchers, special needs educators, students with disabilities and peoples with disabilities organizations (DPOs) to put pressure on policy makers and institutions to respond to the principles of equal rights and opportunities.

5.3.4.1. Relationship between Background Variables and Experience in the Policy Environment

Another purpose of this study was to examine the relationship between the background variables and experiences of students with disabilities in the policy environment. The study revealed that there was statistically significant experiences mean score difference among participants in the three universities.

It was revealed that apart from support provisions through disability resource centers, accommodations in teaching learning and examination were not policy driven rather it was based on the willingness of individual teachers. As noted earlier most teachers lack willingness and knowledge of making adjustments which implies that the rights of students with disabilities in receiving reasonable accommodation is unmet. Matshedisho (2010) sensibly stated how this 'voluntarist' approach coupled with weak policy implementation puts students with disabilities in universities of South Africa in a disadvantageous position. Hence, systematic discrimination is found to be yet another form of discrimination students with disabilities experience in higher education. It is systematic, Matshedisho (2010) further explained as these institutions have been perpetuating structural inequalities and social injustice.

Therefore, the statistical difference in the mean scores of participants in the three universities obtained in the quantitative study might be caused by the presence of more

willing academic and administrative staff in Hawassa and Haramaya Universities than AAU since there was no substantial disability related policy difference in the three universities.

5.4. **Correlation Among the Four Experience Dimensions**

Another purpose of the study was to examine the relationship among the four dependent variables of the study. Therefore, the correlation result showed that there was a statistically significant positive correlation. This means either the facilitator or barrier in one dimension influences the experience of students in another dimension although the extent of relationship and influence varies. The study also revealed the importance and interdependence of each of environmental dimensions for desirable experiences and overall success of SWDs.

The study showed that the correlation coefficient between AE and POE was more strong ($r = 0.609$, $p < 0.01$) than the remaining correlation results. Literature indicated that various policies introduced aiming at promoting the rights and inclusion of PWDs in higher education have produced successful outcomes creating access, increasing enrollment and participation, and provisions of disability specific support. Indeed, institutional policies that guide service delivery are environmental factors that influence student success (European Agency for Development of Special Needs Education, 2006; WHO, 2011; Pingry O'Neill et al., 2012).

However, it was evident in the study that there was no explicit disability related policies at the institutions, which caused lack of planning and institutional system that effectively responds to the heterogeneous needs of these student. The effect, as perceived by the participants, was inability to use their maximum potential and perpetuate the continuation of barriers in the learning environment. Almost all of them reported that they have the potential to cope with the higher education standard if their special educational needs were fully

addressed and the environment is enabling. Hence, they attribute absence of clear disability related policy and lack of implementation for inadequate services and lack of equal opportunities for participation in the academic environment.

Another way that policy and academic success is linked with the level of awareness and knowledge of SWDs about their rights and the instruments existed to protect their rights in education. Concurring on the finding of the study, Summers et al. (2014) confirmed that students with disabilities who have limited knowledge about their rights and who do not request accommodations have been found to experience significantly lower levels of academic achievements.

The study revealed that AE and SE of higher education institutions positively correlated, $r = 0.332$, $p < 0.01$. The social environment of higher education was found to be the most critical for the successful integration of SWDs. The interaction they had with their teachers, other students and members of administrative staff had both positive and negative contributions to the satisfaction and motivation in their education, instructional accommodation and a sense of belongingness to the higher education community in general.

The existence of significant relationship between the two experiences was shown in the study of Jackline et al. (2007) who reported that students were more likely to be either happy or unhappy with both their social and learning experiences, than they were to be happy with one and unhappy with the other. For example, of the total 192 participants 55.1% were happy with both their social life and learning experiences and 7.5% of them were unhappy with both.

Positive faculty-student relationship and communication is an essential element that is believed to contribute to the academic success through teachers' encouragement and support

which Kioko and Makoelle (2014) referred as an important ingredient in fostering the inclusion of students with disabilities. It was evident during the interview sessions that students with disabilities were in need of their instructors understanding and encouragement more so than policy and accessibility of the physical environment. Teacher's attitude is highly important as it is interconnected with provisions (Hanafin et al., 2007).

Unfortunately, however, faculty negative attitude, lack of awareness and unwillingness of teachers to interact and communicate are the most frequently reported barriers students with disabilities in the present and other previous studies perceived that has a direct impact on curriculum access (Hanafin et al., 2007; Pingry O'Neill et al., 2012; Reed & Curtis, 2012; Leake & Stodden, 2014; Sniatecki, Perry, & Snell, 2015). Lack of teacher support and reasonable accommodation required students with disabilities to invest most part of their time dealing with academic tasks, which in turn significantly reduces opportunities for socialization. The finding of Sachs and Schreuer (2011) concurs with the results of the study that reported participants with disabilities lacked time for social participation and self-maintenance than that of the comparison group of the study, students without disabilities.

In addition, the study revealed that the attitudes of other staff members and students without disabilities of higher education also have an influence on the academic success of SWDs. This was supported by the findings of Reeds and Curtis (2012) where the participation of students with visual impairment in group activities was restricted by other students being apprehensive in working with them (Pingry O'Neill et al., 2012). As a result of limited interaction, students with disabilities went from deciding not to demand accommodations and services they needed to as far as non-disclosure of disability status (Leake & Stodden, 2014).

Overall, the existence of a strong connection between the social interaction in the classroom and the students' learning was shown by Hurst, Walace and Nixon (2013). Participants in their study (15 undergraduate and 30 graduate students) perceived that the classroom social interaction improved their learning by enhancing comprehension and retention by activating prior knowledge, making connections, consolidating new ideas, created a positive working environment, and provided a means to view topics from multiple perspectives and enhanced their critical thinking and problem solving skills. The implication is that students with disabilities in Ethiopian higher education institutions are passive in the classroom since they are not engaged in the learning process due to the unidirectional teacher dominated model that contradicts with the philosophy that learning is a social activity (Hurst et al., 2013; Matonya, 2016).

The other positive correlation obtained in this study was between AE and PE, $r = 0.320$, $p < 0.01$. It was noted in the study that accessibility of the physical environment had a huge impact on the experiences of SWDs in the academic environment. Accessible part of the institutions facilitated the students' free movement and access to use academic and other facilities in the campus. However, for students with disabilities, access to the physical environment was difficult that obstructed to easily move and restricted equal opportunities to access to attend classroom lectures, examination, information and accessing services and facilities. This findings correlate with studies that found the connections between the physical and academic environment. For example, the library, science laboratories and many classrooms were inaccessible (Morley & croft, 2011) which in turn influences the student's ability to meet the academic demands and function as an equal in university (Almog, 2011) and restricts students from participating in off campus educational activities such as field

trips (Shevlin et al., 2004). The effect of the physical environment on assessment was also revealed in Hanafin et al. (2007) as students with physical disabilities struggled due to inaccessible exam rooms and facilities, and toilets.

The PE and POE also correlated at $r = 0.261$, $p < 0.01$. It was revealed in the study that, although institutional level disability policy was unavailable, the institutions gave a relatively better emphasis for accessibility of the physical environment than academic, social and policy environments. Since the higher education proclamation (FDRE, 2009) is a guiding legislation of higher education institutions of the nation, its article 40 might contribute in part for the ongoing efforts of overcoming architectural barriers. However, this study also revealed that voluntary approach to provisions dominated than policy driven ones. As evident in WHO (2011) world disability report, this approach on accessibility is not sufficient to remove barriers unless accessibility minimum standard is adapted. As noted from this study, the physical environment of the institutions was not enabling for students with disabilities. Hence, accessibility efforts necessitate designing policies that indicate the standards for accessibility so as to create an enabling environment to facilitate full inclusion of students with disabilities.

The fifth correlation was between SE and POE ($r = 0.241$, $p < 0.01$). Higher education and students with disability exists within the society and the culture and belief systems of the society have an influence on their interaction within their community. Considering disability as a curse, a consequence of wrongdoing, superstitious and segregating or discriminating within the society are some of the traditional cultural beliefs and attitudes that have been negatively affecting many people with disabilities in Ethiopia (Tirussew, 2005; 2006; Almaz,

2014). Hence, students with disabilities experience social exclusion and inequality in higher education though some positive signs of improved attitude were noted.

According to Link (2015) a paradigm shift from a discourse that focuses on the individual's limitation (medical model) to the limitations of the environment that restricts equal participation (social model) by itself is changing the beliefs that society's held and it is empowering for PWDs as well. However, promoting social inclusion and development of social skill of SWDs was not given due attention in policy and practice of higher education. The finding implies that, therefore, higher education institutions should engage in designing policies and structured opportunities that foster social connectivity and inclusion.

The last correlation was between the SE and PE, $r = 0.233$, $p < 0.01$. As discussed above, positive social integration is a predictor of better academic outcome for students with disabilities. Greater social inclusion and meaningful social contact with other peoples in the community is possible when the physical presence of PWDs accompanied with active participation in various community activities and using facilities (Link, 2015). In higher education context, this means, equal participation of students with disabilities in curricular and extra-curricular activities and events may give an opportunity to create friendships with others. However, inaccessibility of the physical environment was not only affecting SWDs in their learning but also in their interaction with the university community.

The implication is, therefore, higher education institutions need to adapt a comprehensive approach in their effort of disability inclusion. Since the environmental dimensions are interconnected, as WHO (2011) suggested, people with disabilities will not be able to benefit fully from improvements in one domain if the others remain inaccessible.

5.5. Organization and Provision of Disability Related Support Services

In order to overcome the inequalities within the environment of higher education, academic and non-academic support need to be planned, organized and allocated to boost the retention and achievement of students with disabilities.

As to the forms of organization of special needs support offices or DRCs, the study revealed that the three institutions had three different ways of organization. At AAU, the special need support service was organized at the level of directorate that includes a director/contact person, SNE expert and sign language interpreter, while Hawassa and Haramaya universities had contact person or coordinator. Although AAU had a relatively better organization and staffing, the status of support at the institutions was considered as a minimum level of support. Despite universities have the autonomy on how to integrate disability support in their structures, it is suggested that it needs to be organized on a multidisciplinary team basis to effectively address the diverse needs of students with disabilities especially in large universities (European Agency for Development of Special Needs Education, 2006).

Despite minimal support, participants of the study reported that the available few staff at special needs support offices or DRCs were interactive, helping and cooperative. This implies that it is not only the support that matters but also positive interaction and support was equally important. In supporting this idea, a study by Graham-Smith and Lafayette (2004) revealed that the presence of caring staff in the disability support office helped SWDs to feel secured and safe in addition to other forms of support in teaching- learning, assessment, counseling and skill development trainings.

With regards to the role of disability units, most participants of this study felt that it is the major enabling factor at their institutions despite pitfalls on the quantity and quality of services. Other studies also reported how disability support offices are beneficial to independence, enhance functionality, sense of belongingness and facilitate persistence and completion of their studies (Matshedisho, 2010; Summers et al., 2014; Graham-Smith & Lafayette, 2004; Wasielewski, 2013; Mutanga, 2017).

The combined stress these students experience as a result of inaccessible learning environments of higher education necessitates a more targeted support than peers without disabilities (European Agency for Development of Special Needs Education, 2006). Herbert et al. (2014), on the other hand, reported two contradicting views on the importance of support services. The authors, citing a 30 years review work of Pascarella and Terinzini's (2005), reported the significance of a wide range of support services including counseling and academic advising particularly during early college years influence college attainment and persistence. However, Herbert et al. (2014) were skeptical and questioned the importance of services because of the findings they obtained in their study which revealed that the graduation rate between students with disabilities who received support services and those who didn't were almost similar (66.5% and 65.1% respectively). Despite this debate, many studies and disability right instruments underlined the importance of structured and need based support services for students with disabilities at higher education institutions.

Before discussing the finding of the study in relation to experiences of students with disabilities in the provision of support services, it is pertinent to look at the trends of support services in Ethiopian higher education. In both of the UNESCO studies (1997; 1999) conducted in English speaking countries in Africa in which AAU was participant, office for

special needs support and support for SWDs was almost non-existent. Similarly, Yared (2008) also found that except AAU which established disability resource center in 2006, none of the public and private institutions had such support centers. Although establishment of the center and better provisions in AAU was a positive development, the level of support was low in all of the institutions. Tirussew et al. (2014) also revealed that higher education showed developments in opening disability support offices or DRCs and improved the type of support services. However, participants were experiencing difficulties in education due to very low or non-existent services that would have facilitated overall integration in higher education.

The present study also revealed positive developments in terms of establishment and organization of special support offices or DRCs, and efforts to diversify support services. However, a number of barriers were noted that are associated with absence, inadequacy, untimely provision of services and related information which altogether adversely influenced the academic experiences of students with disabilities. For example, inadequacy of the financial assistance was one of the most frequently raised challenges among participants. Since the majority of students with disabilities come from low socio-economic status, the increased need of financial assistance is implicit. In supporting the finding, Yared (2008) reported that 75% of public higher education institutions of Ethiopia had provision of financial assistance but it was very minimal and inadequate to help students cover even their basic expenses.

The impact of financial constraint on the education of SWDs should not be underestimated since it influenced the academic functioning and level of independence of participants. Assistive technology such as laptops (Almog, 2011), resources, medical needs,

transportation, housing, and special equipment to enhance learning (Garisson-Wade, 2012) are issues that most students cannot afford. Moreover, variations in the amount of student allowance and provision among universities and disability types were noted. For example, students with visual impairment in the three universities had access to hire text and exam readers and scribes although poor quality of readers and scribe and lack of note takers were the associated challenges. Whereas, none of the departments in Hawassa and Haramaya universities and the majority of departments in AAU did not have financial support for hiring sign language interpreters for deaf students.

Consistent with studies done in Ethiopia (Yared, 2008; Tirussew et al., 2014), only deaf students in AAU had a sign language interpreter in the office of student support and two departments in the main campus. Lacking of the service means, as respondents in the study of Safder et al. (2012) indicated, affects the communication and the ability to understand teachers' instruction which in turn caused frustration. Similarly, except wheelchair user students in Hawassa University who had access to driver support, students with physical disabilities in other disabilities did not. This indicates that services are not provided based on assessment and evaluation of the actual situation and challenges of students with disabilities. Indeed, the gap in disability related policy is another source of disparity among universities and students with different types of disability.

It was also revealed in the study that, except computer services and free internet service and the recently added Braille scanner in AAU, specialized assistive technology yet to be introduced to higher education disability support scheme. The importance of the availability and improvement of a wide variety of assistive technology was shown in different studies. For example, survey participants in the study of Graham-Smith and Lafayette (2004)

indicated that it changed the learning environment for the better through accommodating their needs and increasing the number of options available to them.

In the longitudinal study of Almog (2011), some students with visual impairment who were dependent on others for reading learning materials and taking notes during their first year becomes not only independent to carry out this tasks during their second year as they have got assistive devices (such as Braille monitor) but also becomes students who independently read and shared their notes with the rest of the class. This shift form dependence to interdependence was also resulted in creating friendships with other students, helped them to view themselves not only recipient of support but also as individuals giving support to others, consider them as a contributing member of groups and decrease the amount of time dedicated to these academic tasks.

In general, the existing services have not reached to the level of satisfaction of students with disabilities. Studies done in Africa (Matshedisho, 2010; Morely & Croft, 2011; Mutanga, 2017) and elsewhere (Hadjikakou et al., 2010; Reed & Curtis, 2012; Al-Hmouz, 2014) also revealed that the needs of students with disabilities were unmet due to unavailability and inadequacy of resources and support services. The findings implicated that the institutions had not kept equal or greater pace with the increasing number and diverse needs of students with disabilities and therefore they need to act to strengthen support systems envisioning the future. This is very important because, as Mutanga (2017) suggested, when institutions failed to adequately address the support need of students with disabilities, a feeling of unwelcome at their universities sets in. In addition to inadequacy, it was notable in the study, support services that positively influenced the education of SWDs which are commonly found in various literatures such as orientation and mobility training, self-

advocacy and determination skill trainings, captioning, note takers, room arrangements for lectures and exams, adapted texts, diagnostic assessment, and vocational rehabilitation counseling were unavailable in the support package of higher education institutions in the institutions.

Another important finding of the study was the tendency of the academic and administrative staff considering support provision for students with disabilities is the sole responsibility of special needs support offices. Participants of the study revealed that they often depend on the DRCs, their friends or else themselves. Academic and administrative staff also rarely consults these offices. Research findings that reported positive experiences of SWDs with the support provided at their universities showed that collaboration and communication between the special needs support offices and teachers, members of the university community and other professionals is a key element for successful support provision, to remove environmental barriers and address the need of SWDs (Kioko & Makoelle, 2014; Leake & Stodden, 2014).

Overall, the study indicated that the role of special support offices or DRCs is immense for students with disabilities in materializing a range of resources that they cannot afford by themselves. As described by Graham-Smith and Lafayette (2004), these offices are a major source of stability for students with disabilities. Nonetheless, they are confounded with limitations in access to adequate services and provisions, untimely and sporadic provision, shortage of qualified manpower, differential treatment in support provision among disability groups, limitations in diversity of support and functions and lack of a legal framework that guides the functions. Hence, higher education institutions are required to reorganize special

needs support offices and their functions in line with the social model of disability. This would help to remove barriers and increase functional independence and participation.

5.6.The Impact of Higher Education Environment and the Social Model of Disability

The present study used the social model of disability to examine the experiences of students with disabilities within the context of public higher education environment in Ethiopia. Disability, in the view of the social model, is conceptualized as a social construction emerging from society's environmental, economic, and cultural barriers to full social acceptance and inclusion (Leake & Stodden, 2014).

According to Matonya (2016), education is also determined by the physical materials, social, attitudinal and environments, in which people live, socialize and conduct their lives. These environments have a direct influence to either advance the student's potential to the optimum or impede from moving forward and achieve the same outcomes as his/her peers without disabilities. When a deaf student learn without a sign language interpreter, a wheelchair user in a building without an accessible bathroom or elevator, or a blind person using a computer without screen-reading software are examples of inaccessible environments that create disability and barriers to participation and inclusion of such students (WHO, 2011). This implies that, based on the understanding of the social model, peoples may have differences and impairments that can be of physical, physiological and psychological. However, these can be disabling when the environment, social/attitudinal, physical, institutional, fails to embrace disability and consider it as human difference.

Again, the potentials and abilities of persons with disabilities that need to be nurtured by the environment from early childhood will be impeded and left untapped due to the tendency of focusing on the impairment of the individual. Furthermore, the barriers in higher education

institutions greatly affect the formation of self-concept, beliefs, identity, health and further opportunities of students with disabilities (Hutcheon & Wolbring, 2012). Thus, the social model emphasized that educational institutions should bring about a systemic change in their policies, practices and cultures so as to make the learning environment barrier free for SWDs and enjoy similar outcomes like their peers.

Therefore, it was evident that the four dimensions of higher education environment in this study, as postulated by the social model of disability, posed disablement to the students by restricting their equal rights for participation, a sense of belongingness and achievement. The results of the study also revealed that students with disabilities constituted underrepresented group despite the increasing trend of enrolment of SWDs into higher education observed globally.

In addition, it was revealed that these students are experiencing practical barriers in both program and curriculum access. These includes lack of accommodations in teaching learning, inaccessible learning materials, inequality in examination conditions, inadequate understanding of the students' needs and lack of inclusive academic environment, absence, inadequate and untimely support services and accommodations that is delivered in ad hoc manner as it is primarily based on, as Matshedisho (2010) described it volunterist approach than driven by structured policy, attitudinal barriers that restrict communication and socialization with university community, designs of university physical environments and facilities that deny equal participation in learning, social, leisure and recreational and other student life activities.

Despite the role of the disability resource centers in providing support services to SWDs, they are bounded with providing generic services and lacks specialized services to

heterogeneous needs of students with disabilities. This approach is more of a medical model as it neglects other important issues in the learning environment of SWDs. For example, the communication and collaboration between the special needs support offices or DRCs and departments and faculty members that would have facilitated equal participation and inclusion in classroom activities rarely occurred. Yet another area that is overlooked is the issue of social discrimination SWDs experience in higher education. Therefore, activities of the offices or DRCs should be reformed through the adoption of social model of disability. In addition, apart from ratifying human right and disability right instruments and passing laws that reflected the principles of inclusion and social model of disability at national level, in practice higher education institutions failed to adopt these principles into their laws, cultures and practices. On the other hand, as Swart and Greyling (2011) argued that institutions may have policy that explicitly promotes social model of disability but the everyday experiences of these students do not reflect inclusion. In both ways, therefore, access, equity and equality of opportunity that are enshrined in these instruments are not realized and probably will continue in the future unless the education system reoriented towards viewing disability as a difference and an integral part of diversity.

The result entails, however, the traditional way of conceptualizing disability is playing underneath in beliefs, systems and practices in higher education. Supporting this argument, in her study on the attitudes of Ethiopian college students toward peoples with visible disabilities, Almaz (2014) discovered that diversity is narrowly understood in terms of gender in AAU. However, according to Morina (2017),

> Diversity is conceived in a broad sense comprising the different capabilities, gender differences and differences in social and cultural origin. These differences are seen as a

> benefit rather than as a problem. The belief is that all students, without exception, should benefit from high-quality learning and enjoy full participation in the educational system. (p.3)

Apart from viewing disability as entity within the individual, the adoption of medical model leads higher learning institutions structure individualized response and tend to overlook considering environmental factors such as attitudinal, institutional culture and structure as a barrier that needs to be changed (Hutcheon & Wolbring, 2012). This assumption and the failure of higher institutions to consider disability as a difference and part of diversity were evident in the extensive literature review of Leake and Stodden (2014). They examined all peer-reviewed articles (n=906) that appeared in five journals devoted exclusively to higher education from 2006 through 2012 and indicated that SWDs was not a high priority in HE and the least among other diverse sub-populations that are included in diversity initiatives in higher education institutions.

Hence, conceptualization of disability, experiences of exclusion and inequality of SWDs in education discussed above are mainly influenced by the medical model of disability. According to Almog (2011), placing emphasis solely on the deficits of the individual and overlooking the impact of the social context is the major limitation of the model. This is because Hutcheon and Wolbring (2012) underlined that higher education institutions policy and practices are constructed within the social and cultural production of abilism and ableness and the ability-preferences. This, according to the authors, influences both the institutions' response to diversity and the students' self-perception, social lives and interactions as they may accept the socio-cultural rejection of difference.

Therefore, it is the culture and environment of higher education that caused specific problems that individual with disabilities experiences (Almog, 2011; Matonya, 2016). This has both theoretical and practical implications to higher education institutions to align their cultures, practices and policies with the principles of inclusive education and universal learning designs to enable the environment to fit diversity and accommodate differences.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This section presents the summary of the study and the conclusions drawn from the findings and the recommendations forwarded that are assumed to have an implication for the efforts of making higher education environment barrier-free for students with disabilities.

6.1. Summary

This study investigated the experiences of undergraduate regular students with disabilities who were learning in Ethiopian public higher education institutions from the students' perspective. Specifically, their experience was examined within the four major university environments. These are the academic, social, physical and policy environments. The experience of the students within these environments was studied following the social model of disability perspective. Hence, exploring the influence of these environmental dimensions on the students' overall integration experience was the main objective of the study.

The study used an explanatory sequential mixed research method with the aim of drawing a comprehensive understanding about the students' experiences. Quantitative data were collected from a total of 231 randomly selected students with disabilities (117 students with visual impairments, 68 students with physical/mobility impairments and 46 students with hearing impairments) who were learning in AAU, Hawassa and Haramaya Universities.

A five point likert scale consisting of four sub-scales was developed to gather quantitative data based on extensive review of literatures dealing with experiences of students with disabilities in the academic, social, physical and policy environments in general and higher education in particular. Therefore, a total of 40 items measured the students'

experience in the academic environment sub-scale, the social environment experience sub-scale measured the students' social experience with 30 items, and the physical and policy environment experiences were measured by physical and policy environment experience sub-scales with 15 and 9 items respectively.

Qualitative data, using interview method, were gathered from purposefully selected 18 students with disabilities and 3 experts from SNSO/DRCs at the three universities sequentially. The interview with SWDs was conducted with a semi-structured interview guide, while unstructured interview schedule was employed to gather data from key informants. Finally, the quantitative data were analyzed using descriptive and inferential statistics such as percentage, frequency, mean and standard deviations, Pearson product-moment correlation and one way MANOVA, while thematic analysis was employed to analyze interview data. The major findings of the study are summarized and presented below.

Descriptive statistics were used to examine the nature of experiences of students with disabilities in the four experience dimensions. As to AE, the results revealed that the overall mean score of participants (70.1) was below the mid-scale value (80). The percentage and frequency distribution result also revealed that 69.7% of the participants had scores below the mid-scale value implying that most of the participants had undesirable experiences in the academic environment.

The descriptive analysis result also revealed that the overall mean scores of participants in remaining three dimensions, SE, PE, and POE, were close to their respective mid-scale values. The result indicates the presence of positive aspects of these environments that enable desirable experience. However, the results of percentages and frequency distribution of participants indicated that most students with disabilities had undesirable experiences

indicating that the institutions are not fully inclusive. For example, 52.81% and 58.44% of participants had their social and policy environment experience mean scores below the respective mid-scale values. In addition, 64.1% of students with visual and 57.35% of students with physical impairment had PE mean scores below their respective mid-scale values.

The qualitative findings further revealed that lack of adjustments and accommodation in teaching learning and assessment i.e., lack of alternative teaching methods and testing procedures due to perceived negative attitude of teachers, lack of awareness and knowledge about disability and inclusion had affected equal participation in classroom and group activities and contributed to undesirable academic experience.

Most participants also indicated that they had experienced challenges in the social environment. Perceived unwillingness of faculty and administrative staff to interact and provide need based support, being excluded from group work with other peers without disabilities led them to socialize within their own group. Lack of teachers' willingness and encouragement to make reasonable accommodations in the classroom was also perceived as a reflection mainly of a negative attitude.

Inaccessibility of the built environment and facilities was also reported as a major barrier that affected the students' learning and participation in higher education. Inaccessible classroom and administrative buildings, washroom and toilet facilities, lack of ramps in most part of campus buildings, lack of internal access to building and facilities due to absence of ramps or elevators, long distance between buildings, roads and walkways that are not disability friendly caused disablement to students with disabilities. The study further revealed that the institutions did not have disability related policy or legislative guidelines that

specifically address issues of rights and entitlements of students with disabilities and the roles and responsibilities of academic and administrative staff and service providers that led to irregular, untimely and sporadic support provision to students with disabilities.

As to the relationship among the experiences of participants in the four environment dimensions of higher education, Pearson correlation coefficients showed significant positive relationship among the experiences in the four dimensions. A strong positive correlation was obtained between AE and POE ($r = .61$, $p < .01$). AE also had a moderate relationship with SE ($r = .33$, $p < .01$) and PE ($r = .32$, $p < .01$) implying that the students' experience in AE is greatly related to the barriers in POE, SE, and PE dimensions. Similarly, SE was significantly correlated with POE ($r = .24$, $p < .01$) and PE ($r = .23$, $p < .01$). The PE was also significantly related to POE ($r = .26$, $p < .01$). The finding vividly revealed the interplay of different environmental factors for the success of students with disabilities in higher education.

Another objective of the study was to explore whether the background characteristics of participants (gender, type of disability, year level, and university) have an effect on the four dependent variables or experience dimensions or not. The MANOVA result revealed that there was a statistically significant AE mean score difference between male and females participants at significance level of .013. The result showed that the AE mean score of female SWDs was higher than their male peers. The gender responsive affirmative action policies and the tendency of female SWDs to work harder and together in group seemed contributed to the difference. But, there was no significant difference in the mean scores between males and females on SE, PE and POE dimensions indicating similar experience in these dimensions.

As to the type of disability, the MANOVA result also revealed a significant mean score difference among students with different disabilities on the combined dependent variables or experience dimensions. When the four experience dimensions were considered separately, the only dimension to reach statistically significant difference was PE, where students with hearing impairment had a higher PE mean score than students with physical and visual impairments.

As to the year level, the result showed that there was no statistically significant difference among groups of students in different year levels on the combined dependent variables. On the other hand, there was a statistically significant difference among groups of students from the three universities on the combined dependent variables. When the results of the dependent variables were considered separately, all sub-scales reached significant difference at significance level of .013. Examination of the mean scores indicated that participants in AAU had a lower AE and POE mean score, while they had a higher SE and PE mean score than participants in Hawassa and Haramaya Universities. Conversely, Hawassa University had a higher AE and POE mean score than participants in Haramaya and AAU.

With regards to the type of support services and support organization at the institutions, the study revealed that the institutions followed different forms of structural organization of SNSO or DRC. AAU had better structural organization of SNSO, staff at SNSO and services. The SNSO at AAU and DRC at Hawassa University were organized separately, while the office in Haramaya University was lumped together with other cross-cutting issues, gender issue and HIV/AIDS which might attribute to the students' concern of less attention given to disability issue by the institutions. Although the institutions followed similar format in terms

of the type of services provided (i.e., provision of learning materials and a separated reading room for students with visual impairment, financial assistance, assistive devices, computer and internet service, photocopy and printing, guidance and counseling service, and trainings), there were some differences in terms of the amount and extent of these support. However, absence of important services, inadequacy of support, untimely provision, lack of specialized and technology was affecting the students' positive integration.

6.2. Conclusions

The findings of the study develop insight into the experiences of students with disabilities (SWDs) in higher education setting and contribute to future research initiatives. Most studies on the issue conferred that the experiences of students seem to be affected by a range of interrelated environmental factors in higher education. This study adds the perspectives of SWDs on their experience in the academic, social, physical and policy environments of higher education in Ethiopia.

From the results of the study, it can be concluded that the overall experience of participants in the four dimensions of higher education environments is undesirable. Despite being the core element of higher education, the lack of reasonable accommodation in teaching-learning, assessment and insufficient support services deprives the students' equal participation in the academic environment.

Notably, having a better organized support structure and services such as in AAU does not always ensures satisfaction, desirable academic experience and full inclusion of SWDs. Perceptions of desirable experience of the students is affected by such complex issues as mismatch between expectation and the actual support available and the process of support provision including inconsistency of support, untimely provisions, lack of specialized

support, lack of technology devices, and most importantly on the presence of willing and caring teachers and office personnel.

Moreover, problems of establishing and maintaining collaboration between SNSO/DRCs and different divisions of the institutions particularly of academic staff have an impact on the provision of comprehensive and multidisciplinary support to SWDs and contribute to the undesirable academic experiences of SWDs. Likewise, the SNSO/DRCs in the institutions have problems of trained disability support staff. However, the association noted between the additional financial and gender responsive support services and better academic experience of female students with disabilities suggest that higher education institutions to be concerned with provision of support services, disability support staffing, and organization of disability support offices.

Although positive signs of social interactions between SWDs and the university community are evolving, the general pattern of the students' social experience is undesirable. Social network and meaningful interaction between SWDs and the university community is still weak. Attitudinal problem is related to the challenges SWDs experience in establishing satisfactory social networks with campus communities. Less engagement and contact of most faculty and administrative staff and the discomfort shown by most students without disabilities while working with SWDs are some reflections of attitudinal problem. In addition, the undesirable academic experience also involves attitudinal barriers, lack of understanding and knowledge of teachers and university administration. Therefore, students with disabilities devote additional time and efforts to be able to fit the higher education system that is not ready to accommodate difference and diversity.

Participation of students with disabilities in a range of social events, programs, and extra-curricular activities is substantially low. The institutions or SNSO/DRCs lacked structured programs and activities that might contribute to interpersonal interaction with peers with and without disabilities, faculty and administrative staff, leading to greater social inclusion, self-confidence and sense of belongingness. Therefore, it can be concluded that the students' community presence is not translated into meaningful community social participation.

Vividly, accessibility of the physical environment is given greater emphasis by the higher education institutions studied. Although these buildings and facilities increased the participation of SWDs in campus activities, equal opportunity for participation and full inclusion is not ensured since the built environment is either partially accessible or not accessible at all. Hence, it makes access to buildings and learning facilities difficult for particularly students with visual and physical impairments.

Aspects of the physical environment also reduce the opportunities for the participation of students with disabilities in campus events and extra-curricular activities that are potential campus activities for establishing social networks. Therefore, the study reaffirms that accessibility of the physical environment is still a major challenge for SWDs in higher education since it caused substantial challenges to the overall student life of students with disabilities and their effective academic and social inclusion in particular.

Lack of clearly articulated disability related policies or failure to implement the existing general disability statements in the senate legislations contributed to the continuation of systemic discrimination on SWDs. Disability related statements in the general policy of the institutions lacked comprehensive descriptions of the rights and entitlements of students with

disabilities, roles and responsibilities of various management sectors and staff of the institutions.

The experiences of participants reflected gap between the available legislations and practice. Irregularities and inconsistencies of accommodations, support provision within institutions and support organization across universities, accessing physical infrastructures and facilities and social inclusion are problems in part caused by lack of policy frameworks. As a result, students with disabilities are dependent on the willingness of academic and administrative staff for support. Lack of the students' awareness on institutional disability related policy, legislations or statements also suggests gaps in information dissemination and communication. Therefore, the right to equal opportunities for participation and learning with their special educational needs accommodated is not ensured.

Overall, the nature of students' experience in the four dimensions of higher education, as a group, reflected exclusion rather than inclusion. Furthermore, the finding from the relationship between the students' background variables and their experiences on the four experience dimensions, suggested that the patterns of participation and experiences of students with disabilities are essentially similar.

The present study indicates that positive correlation exists among the four environmental dimensions of higher education. Meaning, the experience dimensions are interrelated and inaccessibility in one dimension influence the experience of students with disability in other dimensions as well. In the same way, efforts of improving accessibility only in one dimension will not ensure full participation and inclusion. Therefore, this has an implication for higher education institutions to overcome environmental challenges of SWDs through

restructuring policies, cultures and practices in line with the philosophy of the social model of disability and the principles of inclusive education.

6.3. Recommendations

Once students with disabilities have program access to higher education, it is the responsibility of the institutions to recognize and respond to the educational needs of these students. This is possible in inclusive higher learning institutions.

- Hence, higher education institutions in Ethiopia need to transform their philosophies, policies, cultures and practices towards the social model of disability. The major reasons for adopting the model are:
  - The admission of students with disabilities and other special educational needs in number and type into these institutions will be inevitable and therefore it enables institutions to fit the diverse needs of these students, rather students to fit the system.
  - Interventions that focus on the environment are cost effective and benefit not only for SWDs but also all members of the campus community.
- ***In terms of policy*** – the government or the Ministry of Education should design a national level disability policy. The higher education institutions should also formulate disability related policy or guidelines, in compliance with international and national policies pertaining to inclusive education, that clearly articulates the entitlements, support services, accommodations, roles and responsibilities of different bodies in facilitating support and establish a controlling mechanism to oversee the effectiveness of implementation of the policies.

- ***In terms of culture*** - it appeared that the institutions focused on removing architectural barriers and delivering learning materials and services through DRCs. However, creating inclusive environment also involves ensuring social inclusion through various deliberately structured social activities, disability awareness events and programs, and facilitating participation in extra-curricular activities to create an inclusive atmosphere where differences are accepted, valued and SWDs are considered as a contributing members of the campus community.
- ***In terms of practices*** - institutions of higher learning should take disability as a cross-cutting issue and include the special educational needs of SWDs in their institution wide strategic, financial and operational planning and functions. At the level of the classroom, teachers should use alternative teaching learning and assessment methods and approaches that increase the full and active participation of SWDs in learning.
- Teachers' lack of awareness and knowledge of disability and supporting mechanism is a major factor for lack of curriculum access to students with disabilities. Therefore, the Ministry of Education needs to recognize the importance of including disability issues within the curriculum of all study programs so as graduates from different field of studies will have awareness and knowledge about disability and disability support. This may accelerate the realization of a more just and inclusive society. Moreover, in-service trainings should be organized to sensitize teachers on inclusive methods and strategies of teaching in small and large group, assessment and evaluations.
- Positive experiences of SWDs depend not only on providing support services through SNSO/DRCs. Therefore, the offices should also broaden their roles and responsibilities and establish a meaningful collaboration and partnerships with all

divisions of the institutions, administrative offices and staff, colleges, departments and teachers so as to coordinate support services for the students in a multidisciplinary approach. For example:

- Collaborate with community engagement directorates and provide disability awareness trainings to the surrounding communities as part of the community service missions of universities since the negative attitude and prejudice towards disability prevailed at universities is also part of the larger society.
- Currently higher education institutions in Ethiopia are having engineering units or departments that design, build, consult and oversee constructions. Therefore, SNSOs should collaborate with these units so as to ensure buildings and constructions are disability friendly based on accessibility standards.

- Bringing change in the life of PWDs also requires activists both from members of the group and professionals in higher education. Therefore, professionals in the SNSOs and in the field of special needs education should advocate for the integration of social model of disability into policies, cultures and practices of higher education institutions. Students with disabilities should also challenge higher education institutions to make sure their rights are protected.
- Students with disabilities are part of the higher education community and the activities in the institutions have a direct and indirect influence on their participation and student life. Therefore, higher education institutions should include and listen to the students' view in their efforts of policy formulation and creating accessible learning, social and physical environment. This certainly enhances their participation and achievement, competence, sense of acceptance and belongingness and inclusion.

- There were variations in the way SNSOs organized and provide services to SWDs. Therefore, the Ministry of Education and higher education institutions should find international and local best practices and develop a model that can serve as a standard and be operational across the higher education institutions in the country.
- The importance of support services in facilitating independence and removing functional limitation of SWDs is well documented in literature. But, inadequacy and access to diverse types of support services was found to be one of the challenges in the learning environment. Therefore, institutions of higher education should provide due emphasis in strengthening SNSOs/DRCs in terms of finance and qualified man power so as to enhance the diversity and quality of support services.
- Conducting regular assessment of the changing needs of students with disabilities in higher education would provide valuable information for support providers to identify the student's specific needs and provide services tailored to the needs of individual students.
- It appears that the potentials of specialized technology in reducing the challenges of SWDs in teaching-learning, assessment/testing and information and many other aspects of student life is not given proper attention. Therefore, institutions should establish partnership with governmental such as ministry of education and science and technology and non-governmental organizations, government and private manufacturing enterprises to equip SNSOs/ DRCs to better assist and provide alternative options to SWDs. The government can also support, for example, through exemptions of payment of import customs and other tax on disability related technological devices.

6.4. Future Research Direction

Studies on the experiences of students with disabilities in higher education institutions including universities and colleges in Ethiopia are scant. This study added the perspectives of students with disabilities who were learning in public higher education institutions of Ethiopia into the existing knowledge. However, various issues surrounding students with disabilities in higher education needs to be further investigated to support the process and practices of inclusive education and the realization of equal opportunities in education without discrimination and on an equal basis with others as recommended by United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) and other relevant human right instruments. Therefore, some suggestions are forwarded for future research initiatives in the area.

- Since the samples of the study may not be representative of all students with disabilities in Ethiopian higher education institutions, additional research is needed to examine the students' experience in more representative samples and universities.
- The perceptions of graduate students with disabilities and those who did not disclose disability were not considered in this study. Therefore, other researches can also capture the experiences of graduate SWDs and students with disabilities who did not disclose disability status to the university or SNSOs/DRCs together with factors with non-disclosure.
- Future research may also compare the experiences of students with and without disabilities in a range of student life experiences, activities and environmental dimensions. In addition, the perspectives of faculty and administration on their beliefs and attitudes of disability and practices of inclusion.

- The scope of this study was assessing the experiences of SWDs within the four major environmental dimensions of higher education. However, human experience is complex and is influenced by various internal and external factors. Therefore, future research initiatives may also consider other influencing variables.
- In this study, gender responsive support services and affirmative action was reported as a factor for differences in academic experience between male and female students with disabilities. Therefore, future research can consider studying the effectiveness of the gender policies and support on the experiences of these students and its impact of academic achievement.
- The participation of students with disabilities in science and technology fields is significantly low. Therefore, future researchers may focus on investigating access issues and experiences of SWDs in Science, Technology, Engineering, and Mathematics (STEM) program.

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Appendices

Appendix-A

A Questionnaire to be filled by Students with Disabilities

Addis Ababa University

College of Education and Behavioral Studies

Department of Special Needs Education

Dear Participants

I am a PhD candidate in the Department of Special Needs Education, Addis Ababa University (AAU). Currently, I am doing my dissertation paper entitled ***"Educational Experiences of Students with Disabilities in Higher Education Institutions in Ethiopia"*** as part of the requirements of PhD in Special Needs education. This research work is supervised by Dr. R.S. Kumar, an Associate Professor in the department of Special Needs Education, AAU.

The purpose of this study is to investigate the experiences of undergraduate students with disabilities (SWDs) with respect to their academic, social, physical and policy/legal environments in their higher education institutions and suggesting theoretical and practical recommendations to concerned stakeholders to make a consorted effort in enhancing access to and within higher education for SWDs and leveling the field for success.

Dear participant, this research is done for academic purpose only. Your participation is on voluntary basis and if you would like to withdraw from the study, feel free to do so at any time. Please be informed that you are not required to write your name on the questionnaire and hence your identity will remain strictly confidential. There are no foreseeable risks involved in participating in the study. The successful completion of this paper is highly dependent on your genuine responses to all statements of the questionnaire. Therefore, I sincerely ask you to do your best to provide complete and honest information.

I would like to thank you in advance for your participation and taking your time to fill out this questionnaire.

Section One: Background Information

1.1. Personal Data

Directions: -Indicate your response either by filling the needed information in the space provided next to the statement or by putting a tick mark (✓) in the boxes.

1. Please indicate your gender a) Male ☐ b) Female ☐
2. What is your age? _____
3. Please indicate the type of your impairment/disability

   a) Visual Impairment ☐ b) Hearing Impairment ☐ c) Physical Impairment ☐

1.2. Family Background

1. Please indicate the highest educational attainment of your parents by putting **"✓"** mark.

No.	Educational Status	Father's educational status	Mother educational status
1	Illiterate		
2	Literate		
3	Primary education (1-4)		
4	Junior secondary education (5-8)		
5	Secondary school (9-12)		
6	College Certificate		
7	College diploma		
8	BA or BSc Degree		
9	MA/ Degree		
10	PhD degree		

2. Please indicate the occupation/job of your parents.
   a. Mother's occupation _____
   b. Father's occupation _____
3. Please indicate the amount of money (income) your family earns monthly_____.

1.3. University Education Background

1. What is the name of your University? _____
2. How were you placed at this university?
   a. Direct placement by Ministry of Education ☐
   b. Transferred from other University ☐
      - If transferred, please state the reason_____

c. Other, please specify_____

3. What is your department and/ field of study?_____
4. Is the field of study you are studying is your choice?
   a. Yes ☐ b. No ☐
5. What is your year level in the current academic year?
   a) 1st year ☐ c) 3rd year ☐
   b) 2nd year ☐ d) 4th year and above ☐

Section Two: Students with Disabilities Experience Measuring Scale

Direction: - This scale contains statements on your experiences in your university. It consists of four sub scales-seeking data on your experiences in the academic, social, physical and policy environments. Please read all the statements carefully and indicate your responses based on your experience in your institution by putting **"✓"**mark in one of the five scales provided against each item. Please be informed that there are no 'right' or 'wrong' answers to any question. Your genuine and honest answers are the most valuable answers.

Thank you.

Academic Environment Experience Sub-Scale						
Item/Statement		Always True	Often True	Sometimes True	Rarely True	Never True
1	I actively participate in class discussions.					
2	I actively participate in group activities with other students.					
3	I spend more time and effort on my studies than other students to achieve satisfactory marks.					
4	The instructional media/materials most instructors bring into class do not consider my special educational needs.					
5	My special educational needs are neglected in out class academic activities.					
6	Course contents are modified according to my special needs.					
7	I regularly attend class sessions					
8	I experience difficulties in taking notes in the classroom.					

9	Most instructors make use of appropriate examples to explain complex concepts considering my special needs.					
10	I experience stress beyond my capacity to handle due to academic competition in my classroom.					
11	Supplementary reading materials such as handouts are not prepared in accordance with my special educational needs.					
12	Most instructors use different instructional strategies considering my special needs.					
13	I am bored with most of my classes.					
14	I am given with alternative learning tasks in accordance with my special needs.					
15	Courses are waived or substituted by other courses considering my special needs.					
16	I have classroom assistants					
17	I am benefited from instructor's flexibility in assignment and test dates.					
18	Most instructors use alternative assessment modes to meet my unique needs.					
19	I have extra-time accommodation on examinations considering my special needs.					
20	Most of my instructors depend on written examination mode.					
21	Most of my instructors use continuous assessment methods.					
22	Feedback on my learning is only provided in the form of exam results/grades.					
23	My performance in exams reflects my academic abilities.					
24	The changes in my special educational needs are regularly assessed.					
25	Guidance and counseling services are available in the campus whenever I am in need of it.					
26	Most instructors are capable of providing proper support that addresses my special learning needs.					
27	I receive disability specific assistive					

	devices from the institution.					
28	I receive specialized educational materials that facilitate my learning.					
29	I have disability specific training opportunities that address my special needs on the campus.					
30	I have access to timely information in my preferred medium.					
31	I am provided with financial assistance from my university.					
32	I have access to a computer service on the campus.					
33	I have access to tutorial services to address my special needs.					
34	I experience difficulties in getting disability related services on time.					
35	I have access to reading materials in my preferred medium in the library.					
36	Limited support services restricted me to achieve better results in courses.					
37	Support services in the university are generally appropriate to my needs.					
38	Generally, I gained the expected knowledge from the courses I took.					
39	My classroom experience in this University has matched my (positive) expectations.					
40	I have doubts that I will successfully complete my study in this University.					

Social Environment Experience Sub-Scale

Item/Statements		Always	Often	Sometimes	Rarely	Never
1	I can easily approach my instructors.					
2	Most instructors appreciate qualities that I have.					
3	Most instructors are willing to hear my personal problems.					
4	Most instructors help me in solving my problems.					
5	Most instructors encourage me to inform them about my special educational needs.					
6	I avoid interacting with instructors due to the stigma they have associated with my disability.					
7	Most instructors treat me unfairly.					

8	Most Instructors assign me to coordinate/chair group activities.					
9	Most instructors view me as incapable of learning because of my disability.					
10	My interactions with faculty have had a positive influence on my overall progress in the University.					
11	I get easily acquainted with students who have different backgrounds.					
12	My friends are only students with disabilities.					
13	I have experienced hurtful comments on the basis of my disability from students without disabilities.					
14	I have experienced social isolation in the campus due to prejudice and discrimination I felt in the campus.					
15	Whenever I feel social alienation in the campus, it affects me psychologically.					
16	Students with disabilities come to me when they need support.					
17	Students without disabilities come to me when they need support.					
18	I enjoy with my friends outside of the campus.					
19	In my class, most students without disability are not comfortable to work in groups with me.					
20	My classmates without disabilities provide me support whenever I need.					
21	My relationship with students without disabilities is characterized by mutual respect.					
22	I have involved in romantic relationship in the campus.					
23	I avoid dating due to the fear caused by my disability.					
24	My relationship with other students has a positive influence on my overall experience in the campus.					
25	Most administrative staffs are willing to help me with my special educational needs.					
26	I found most administrative staff deeply concerned on matters of students with disabilities.					

27	I have experienced unfair/unequal treatment from most administrative staff.					
28	Most administrative staff delays in responding to my requests for support services.					
29	I have been harassed by the campus community on the basis of my disability.					
30	I actively participate in extra-curricular activities in the campus.					

Physical Environment Experience Sub-Scale

Item/Statements		Highly accessible	Accessible	Moderately accessible	Slightly accessible	Not accessible
1	To what extent are the residence or dormitory buildings accessible to you?					
2	How accessible are the student's lounges in various campus locations for you?					
3	To what extent are the student cafeterias accessible for you to get the services?					
4	How Television (TV) rooms on various campus locations are accessible to you?					
5	How accessible are the centers or halls for you to attend various events in campus?					
6	To what extent are the sports fields accessible to you?					
7	How accessible is the disability resource center or office to you?					
8	Are the shower rooms in your dormitories accessible for you?					
9	Are the toilets on various locations of the campus accessible for you?					
10	How accessible are the library buildings in the campus?					
11	Are buildings of administrative offices accessible for you to meet with designated persons?					
12	How accessible are classroom buildings for you to attend course sessions regularly?					
13	To what extent are rooms accessible for you to take examinations?					
14	How accessible are walkways/roads in the campus?					
15	To what extent is the campus					

	environment accessible for you to participate in student life activities?					
Policy Environment Experience Sub-Scale						
Item/Statements		*Strongly Agree*	*Agree*	*Undecided*	*Disagree*	*Strongly Disagree*
1	My rights to receive reasonable accommodation services are protected by national laws/policies.					
2	I feel the University policy/legislations serve all students equally and equitably.					
3	The university has disability specific policy/legislations.					
4	The university policy/legislations clearly outline the entitlements that I have for services and accommodations in the campus					
5	I am informed about legislations regarding my entitlements for disability specific services in the campus.					
6	The policies of the University protect me from any form of discrimination or harassment.					
7	I benefited from affirmative action policies/legislations in the campus.					
8	I feel the available disability related policies/legislations are not effectively enforced.					
9	Appropriate legislations have been developed to increase my participation since I joined this university.					

Appendix-B

Interview Guide for Undergraduate Students with Disabilities

Themes of Discussion

Dear participants, would you please share your opinions on the following important themes and how they influenced your higher education experiences.

Theme 1. Academic Environment Experience

1. How do you see your academic experience? Is it desirable or undesirable?
    - Participation in classroom and group activities
    - Classroom instructional modifications and accommodations
    - Facilitators and barriers in academic environment
2. Can you please tell me about your experiences in assessment and evaluation?
    - Are there Adjustments and accommodations in accordance with your needs?
    - Do you receive feedback on your progress?
3. Type and adequacy of classroom, Institutional level support services
    - Would you share your experience on how the available services facilitated or hindered the academic integration and success in the campus?

Theme 2. Social Environment Experience

1. How do you see your experience in the social environment? Is it desirable or undesirable?
    - What is the nature of your interaction with academic and administrative staff and other students in the campus?
    - What are the factors are attributed for the type of interactions you have?
    - Do you participate in extra-curricular activities? What are the factors for participation and non-participation?
    - In what ways the social interaction you have helped or affected you in the campus?

Theme 3. Physical Environment Experience

1. How do you see the accessibility of buildings and campus facilities (campus roads and walkways, classrooms, library and laboratory rooms, administrative and staff offices, special needs support offices, dormitories, toilets, shower rooms, student cafeteria and lounges and recreational and sport fields)?

2. Please explain how the campus physical environment facilitated or influenced your higher education experience.

Theme 4. Policy Environment Experience

1. How do you see your experience in the policy environment?
2. Are you aware of national and institutional level policies or legislations pertinent to disability issues, and the rights and entitlements of students with disabilities?
3. Do you think that your rights and entitlements for support are protected by the policies?
4. How do you evaluate the implementation of the policies?
5. Would you please explain how the disability related policy influenced your experience in higher education policies?

Appendix -C

Interview Guide for Special Needs Support Office/DRC Heads or experts

This unstructured interview guide is prepared to elicit information from special needs support office/disability resource center head or experts about the status of institutional disability related policy, the type of support available and structure and organization of support for students with disabilities in the university.

Thank you for your cooperation!

Interview Questions

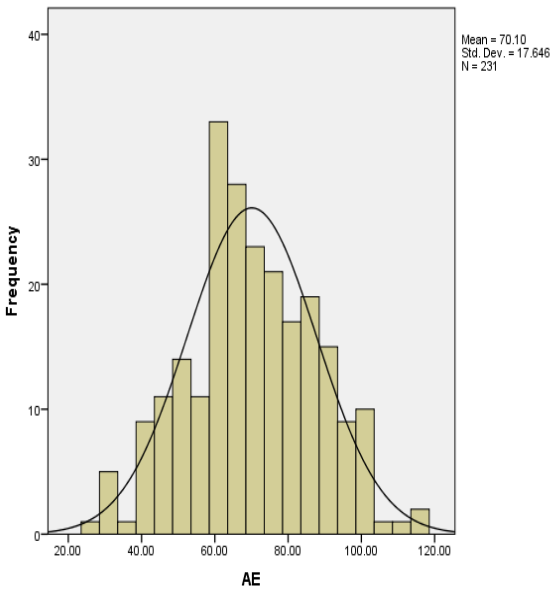
1. Is there institutional level disability related policy and/or legislation?
2. Is the policy reflects the principles of inclusive education and social model of disability?
3. Is the policy clearly articulated the rights and entitlements of students with disabilities and the roles and responsibilities of the university community?
4. How do you think the policy facilitate experiences of students with disabilities in ensuring disability equity and integration?
5. How does the special needs support office/disability resource center is structurally organized?
6. What services do special needs support office/disability resource center offer to students with disabilities?
7. Do you believe that the services provided are adequate for students with disabilities?
8. What challenges do you face in providing support to students with disabilities?
9. To what extent is the management of the university is willing to mainstream disability issues and support the activities of the center/office?
10. To what extent colleges, teaching staff and administration personnel visit the center/office for seeking advice and technical support in their effort to respond to the needs of students with disabilities?

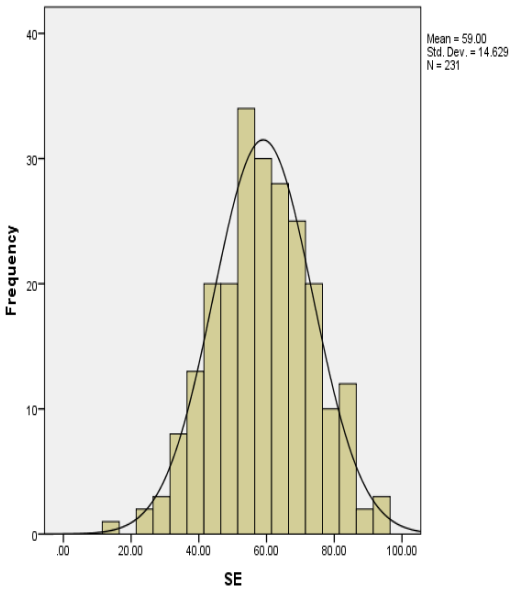
Appendix D
Multivariate normality

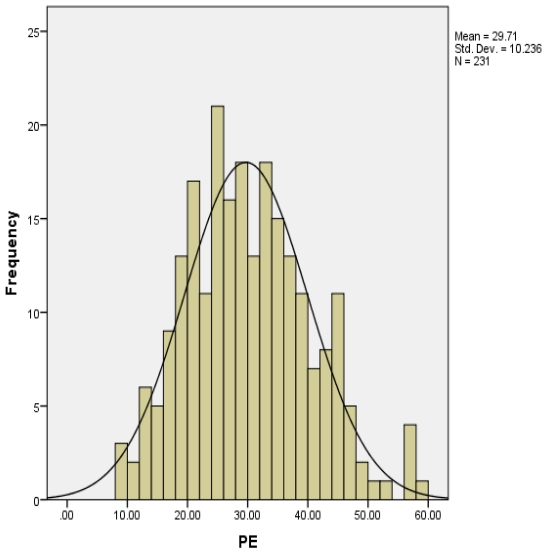
	Kolmogorov-Smirnovtest		
	Statistic	Df	Sig.
AE	.046	231	.200*
SE	.029	231	.200*
PE	.054	231	.200*
POE	.114	231	.000

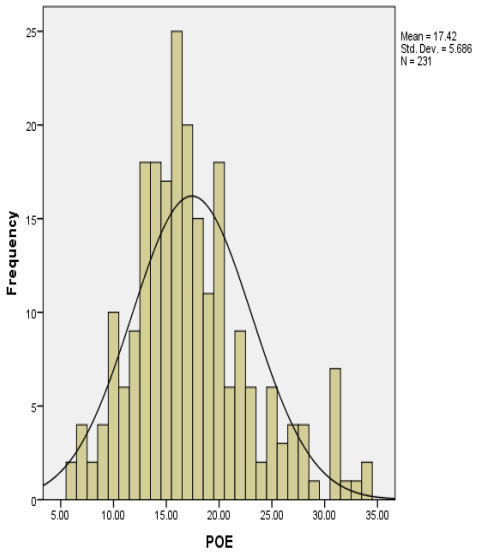
Appendix E

Normal curve histogram for AE, SE, PE and POE dependent variables

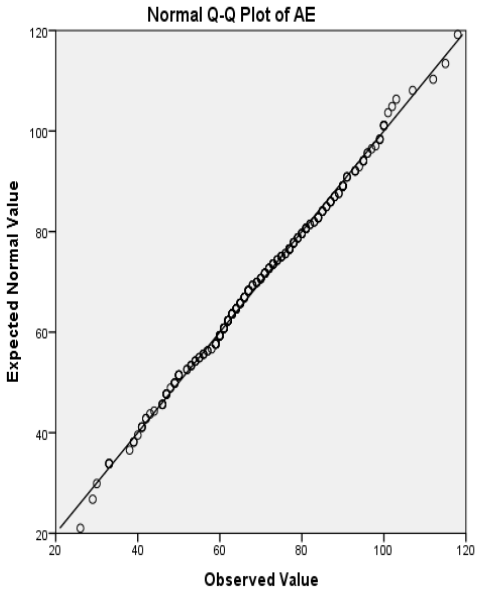


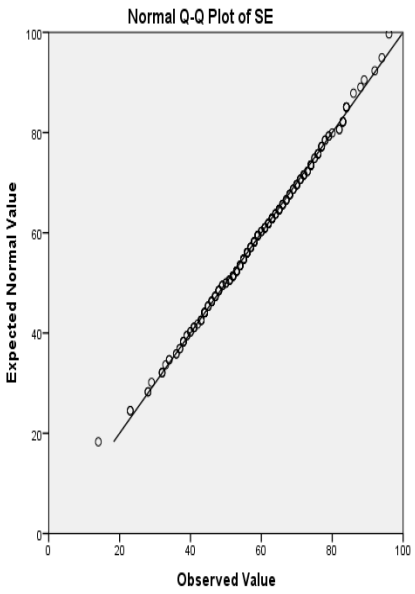


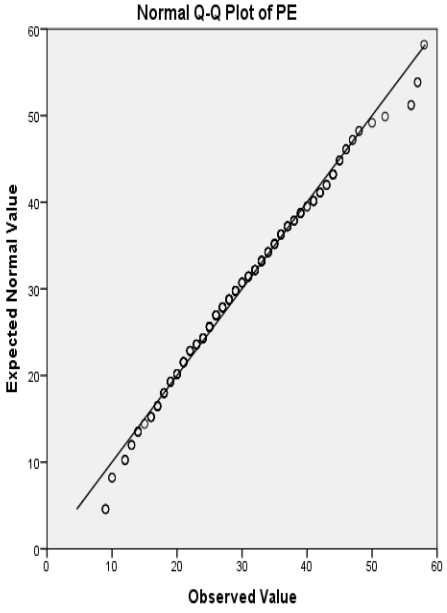


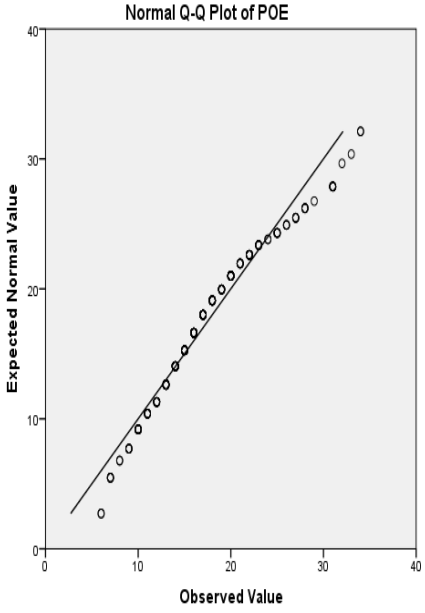


Appendix F
Normal Q-Q Plot for AE, SE, PE and POE dependent variables



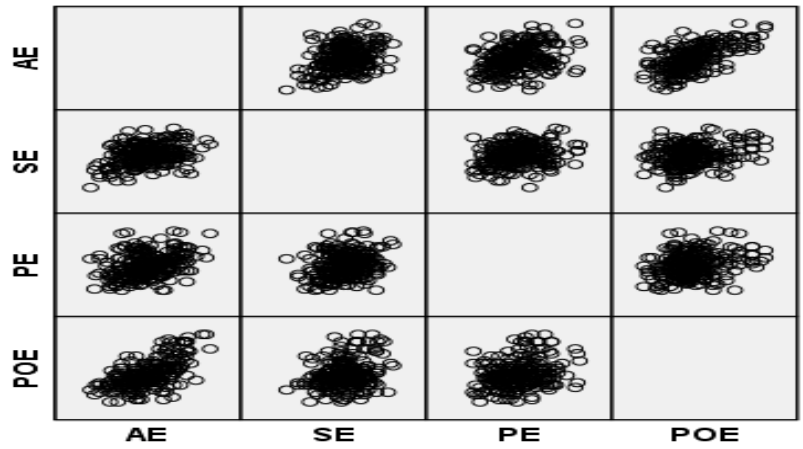






Appendix G

Linearity (Matrix of Scatter Plot)



Appendix H
Multicollinearity

	Participant's gender	Type of disability	Type of University	Year level
Participant's gender	1	-.066	.019	-.105
Type of disability		1	-.271**	-.059
Sample University			1	-.027
Year level				1

**. Correlation is significant at the 0.01 level (2-tailed).

Appendix I

Homogeneity of variance-covariance matrix

Homogeneity of Covariance Matrices using Box's test of equality of variance

No.	Background variables	Sig.
1.	Gender	.47
2.	Type of disability	.001
3.	Year level	.01
4.	Type of University	.01

Appendix J

Test of equality of homogeneity of variance using Levene's test

No.	Background variables	Dependent Variables			
		AE	SE	PE	POE
1	Gender	.07	.33	.50	.65
2	Type of disability	.72	.58	.15	.36
3	Year level	.81	.95	.16	.14
4	Type of University	.40	.16	.29	.08

p >.05