LEARNING ENVIRONMENT AND ACADEMIC PARTICIPATION OF STUDENTS WITH PHYSICAL DISABILITIES IN HIGHER EDUCATION: THE CASE OF TWO KENYAN UNIVERSITIES

BY
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A RESEARCH THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF EDUCATION IN THE SCHOOL OF EDUCATION OF KENYATTA UNIVERSITY

MAY 2013
DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.

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ONG’ETA, WYCLIFE MOSE

We confirm that the work reported in this thesis was carried out by the candidate under our supervision as University Supervisors.

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Department of Educational Foundations
DEDICATION

In loving memory of my revered father,
Patrick Mose, the fountain of my
inspiration

and

To all students with disabilities, as an
old adage goes, “disability is not
inability”
ACKNOWLEDGEMENTS

The process of working on this thesis was long, challenging, but definitely not lonely. I was always aware of the favour of Almighty God over me throughout the process, and I thank Him deeply. I have been standing on the shoulders of giants, my supervisors. I record profound appreciation to them, Dr. Violet Wawire and Dr. Salome Nyambura. As my academic lecturers and supervisors, I register my sincere gratitude to them for their scholarly guidance, inspiration, interest, support and constructive criticism throughout the writing of the thesis.

A profound word of thanks also goes to the faculty members in the department of Educational Foundations who offered me an academic safety net which I do not take for granted. I wish to sincerely thank Dr. Kamere, chair of the Department of Educational Foundations, for it was her who first suggested that I could consider a study in the area of disability in education. I am very grateful to the co-ordinators of disability in Kenyatta University and JomoKenyatta University of Agriculture and Technology for their invaluable support. I am highly indebted to the 32 students with physical disabilities who participated in this research work, without you all whom I now regard as my friends and teachers; this would not have been possible.

Thanks also, to my family members: Beatrice, David, Esther, Jaspher and Charles, who have been an inspiration throughout my life, as well as for their incessant support. My candid and heart-felt thanks go to my mother, Milkah Mokeira whose compassion towards every living soul ignited my interest to research in the area of disability in education. The most wonderful mother and Guardian Angel I could ever be blessed to have. Many thanks go to Christine for her many useful ideas and encouragement. Special mention also goes to my academic peers and friends for their moral support that kept me going. Also Mr. Antony Bojana deserves heartfelt commendation for editing the work.

To you all I can say, “I am because you are!”
The aim of the study was to establish how the learning environment influences academic participation for students with physical disabilities at Kenyatta University (KU) and Jomo Kenyatta University of Agriculture and Technology (JKUAT). This study explored the access to information, attitudes, effective teaching and assessment methods. The study was guided by the social model theory of disability. It explains that it is the society which disables people with disabilities. To achieve its objective the study employed qualitative and quantitative methods of data collection which allowed for an intensive investigation into learning environment and academic participation for students with physical disabilities and provided a basis for informing better policies and planning. In addition, the investigation employed a descriptive case study design that involves detailed studies at Kenyatta and JKUAT universities. The respondents of study were 32 undergraduate students with physical disabilities, 23 university lecturers, 2 disability coordinators, 2 Tuk-tuks drivers, 2 library staff and 4 house keepers. The data collection instruments employed were: Questionnaires, structured interview schedules, observation schedules and Focus Group Discussion. Piloting of the instruments was done at the University of Nairobi which gave a correlation coefficient of 0.85 which implied that the research instruments were reliable. The information that was collected from these instruments was analyzed using both qualitative and quantitative methods. The results showed that the two universities were making a lot of efforts towards inclusivity and accessibility for all. The results also revealed that 17(52%) of students with physical disabilities revealed that the lecturers had a positive attitude towards them as well as involved them in class activities. The results further revealed that the lecture method was dominant although group discussion, paper presentation and online teaching were also used. However, the study found that time given during practical lessons and examinations was not adequate as the students ended up not completing their work. The study recommends that university administrations should promote more sensitization programmes such as seminars, sporting activities, workshops and forums in order to increase the level of awareness of the needs, aspirations and capacities of students with physical disabilities with a view to enhancing their acceptance, participation in learning activities and integration in the university communities. The study also recommends further research to be carried on learning environment and academic participation in other groups of disabilities such as hearing and visual impairments in the two universities.
# ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AP</td>
<td>Academic Participation</td>
</tr>
<tr>
<td>DSO</td>
<td>Disability Service Office</td>
</tr>
<tr>
<td>EFA</td>
<td>Education for All</td>
</tr>
<tr>
<td>GAO</td>
<td>United States Government Accountability Office</td>
</tr>
<tr>
<td>HEIs</td>
<td>Higher Education institutions</td>
</tr>
<tr>
<td>IDEA</td>
<td>Individualized Disability Education Act</td>
</tr>
<tr>
<td>IE</td>
<td>Inclusive Education</td>
</tr>
<tr>
<td>JKUAT</td>
<td>Jomo Kenyatta University of Agriculture and Technology</td>
</tr>
<tr>
<td>KU</td>
<td>Kenyatta University</td>
</tr>
<tr>
<td>LE</td>
<td>Learning Environment</td>
</tr>
<tr>
<td>NDA</td>
<td>National Disability Authority</td>
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<td>PDA</td>
<td>Persons with Disability Act</td>
</tr>
<tr>
<td>START</td>
<td>Special needs Technology Assessment Resource support Team</td>
</tr>
<tr>
<td>SWPDs</td>
<td>Student With Physical Disabilities</td>
</tr>
<tr>
<td>UDHR</td>
<td>Universal Declaration of Human Rights</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
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<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
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<tr>
<td>UoN</td>
<td>University of Nairobi</td>
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<tr>
<td>UPIAS</td>
<td>Union of the Physically Impaired Against Segregation</td>
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<td>WHO</td>
<td>World Health Organization</td>
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CHAPTER 1: INTRODUCTION

1.1 Background to the Study

Education is vital for upward mobility and there is instinctive value placed on academic achievement (Culligan, 2009). As Bukhala, Kinuthia and Wamutitu (2010) note, higher education is accepted as a primary means of enhancing people with knowledge, training and skills to preserve and utilize the environment for productive gain and sustainable livelihoods as well as development of quality human resource in the attainment of national goals for economic and industrial development. For the people with disabilities, higher level of education has the potential of boosting their chances of integration into the society in general, and into employment in particular, so that they might sustain themselves financially with dignity (Sachs and Schreuer, 2011). Higher education, further argues NDA (2004), represents a crossroad between the personal development of an individual and development of a person as a citizen to contribute to the common good of society. However, there is a continuing disparity in providing inclusive learning environment that could promote high level of learning and achievement for students with disabilities in higher institutions of learning.

Studies have shown that students with disabilities complete universities at a statistically significant lower rate than able-bodied peers and those who do not complete university have a persistently lower rate of employment irrespective of the low level of degree attainment (Barber, 2012). As Wray (2002) observes,
many students with disabilities are frustrated by provision made for them in higher education institutions (HEIs) and often their needs are not made. It is instructive that appropriate accommodations should be made to Students with disabilities as they negotiate their academic life to increase their completion rate.

Globally, observes UNESCO (2009), the number of university students enrolled in higher education increased from 19% in 2000 to 26% in 2007, while the number of tertiary students worldwide grew by 50% from 2000 to 2007. Although there is increased access to higher education generally, traditionally disadvantaged groups including those with disabilities have ineffective learning environments which do not nurture the students’ desire to learn. Effective learning environment, observes Gurney (2007), focuses on the creation of appropriately nourishing experiences so that learning comes about naturally and inevitably. It enhances academic participation where students are characterized by: low dropout rates; high level of participation in class activities; high academic achievement and regular classroom attendance. However, NDA (2004) explains that given 10% of the general population have a disability less than 1% undergraduates have a disability. It is a grave issue that the numbers of students with disabilities participating in higher education are minimal.

The Universal Declaration of Human Rights (UDHR) 1948 Article 3a states that admission to higher education should be based on merit, capacity, efforts, perseverance and devotion, showed by those seeking access. No discrimination
can be accepted in granting higher education on grounds of race, gender, language or religion, or economic, cultural or social distinctions, or disability (UNESCO, 1998). However, the contents of this article have not clearly been implemented in higher institutions in many countries as the needs of SWD such as providing effective learning environment that could enhance academic participation, as it is the key to success in higher education remained largely unnoticed hence this study filled the gap.

In Africa as Olakulehin (2010) observes, educational provision has always been made available to learners with disabilities at the elementary and secondary levels. For example, there are special schools for learners with physical disabilities for both primary and secondary education. The inclusion of students with disabilities in elementary and secondary education has not automatically transferred to their inclusion in HEIs (Wolanin and Steele, 2004). Perhaps, because the investment in higher education tends to be extremely high, little consideration is given to their needs when conventional higher education systems and processes are constructed.

Eriksson and Grunlund (2004) observe that participation is an integrated term of involvement in activities, evident in interaction process between his/ her environment. From this conceptualization Sachs and Schreuer (2011) explain academic participation as students’ experience in participating and learning in all aspects of academic institutional life, in and outside the classroom. However,
Wawire, Elarabi and Mwanzi (2010) note that there is a complete absence of statistics on students with disabilities (SWD) in higher education. This implies that educational planning, policy making and attention tend to focus on the needs of the general population; interests of disabled persons are usually an afterthought.

The Persons with Disabilities Act (PDA) of 2003 was brought into force in June 2004. Its main stipulation was the establishment of a National Council for Persons with Disability whose mandate was to implement the rest of the Act on the rights, privileges and protection of persons with disabilities such as inclusion of persons with disabilities in education and training programmes. However, there is a hiatus between policy and practice to the extent that existence of the policy becomes doubtful. As Mwiria, Wawire, Ouma, Njuguna and (2007) indicate, as a result of financial constraint, teaching facilities and physical infrastructure of public universities are the most wanting. In such resource constrained contexts, the specialized learning needs of SWD are bound to be neglected. The increased student enrolments have overstretched the capacity of libraries, lecture theatres, and laboratories. Consequently, due to the large number of enrolments, lecturers are forced to use inappropriate teaching methods like lecturing for students with disabilities. In addition, lack of funds to equip universities with basic learning infrastructure remains a hindrance to the purchase of appropriate equipment for the students with disabilities, which are very expensive and not many individual students can afford. As a result, the students’ participation and learning in all
aspects academic institutional life is hampered.

The formulation of the disability policy framework in higher education in 2009 is one of the milestones the government of Kenya has achieved to enhance inclusive learning environment and effective access to the University content for students with disabilities (SWD). The focus of this policy is to identify and increase participation of SWD in education and training and enable persons with disability to meaningfully participate in national socio-economic development. The policy expects higher education institutions to have specialized facilities, assistive devices and technology. Furthermore, the institutions should create a barrier free environment to maximize the functional potential of students with disabilities. However, the contents of the policy are yet to be implemented to the letter. Barriers like the attitude and willingness of the academic staff as Fuller, Bradley, and Healey (2004a) argue to provide arrangements as well as provide user friendly handouts and unrealistic expectations of reading works, affects the SWD in their academic participation (AP). In addition, assessment methods are not suitable as they can be very pertinent in creating of a conducive learning process for SWD. On the other hand, there is a challenge in accessing information as it is the key to effective academic participation for them.

It needs, however, to be pointed out that previous studies carried out in higher education institutions focused generally on all categories of students with disabilities, yet each group has unique needs based on their disabilities that
require specific learning environments. It is against this background that this study sought to investigate the aspects of learning environment and academic participation for students with physical disabilities at JomoKenyatta University of Agriculture and Technology (JCUAT) and Kenyatta University (KU) in Kenya. Through her 2005-2015 strategic plans, KU affirms its commitment to the principle of equal opportunity for every member of the university without consideration to gender, race, creed, political affiliation or other factors (Mbugua, Wamocho, Michael and Lubna, 2010). Furthermore, the university subscribes to the government’s commitment to offering equal opportunities in the learning and employment arena to all Kenyans, and especially those with disabilities as set out in the Persons with Disabilities Act (PDA) of 2003. Besides catering for persons with disabilities, the university’s goals are in line with key protocols such as the 1990 Jomtien World Declaration on Education for All (EFA) and the 2006 UN conventions on the Rights of Persons with Disabilities. KU has a Disability Service office (DSO) in recognition of its obligation towards the promotion of SWD quality of life through education. Mbugua et al. (2010) explain that the task lies in the fact that of all Kenyan universities, KU enrols the highest number of learners with special needs-visual, mobility and hearing. The researcher also selected JomoKenyatta University of Agriculture and Technology (JCUAT) for this study because it has students with physical disabilities and it offers science oriented courses thus would provide rich and in-depth information. According to Wawire, Elarabi and Mwanzi (2010), among the students with disabilities, the
students with physical disabilities are the most in higher learning institutions in Kenya.

1.2 Statement of the Problem

A higher level of education enables students with disabilities to get better chances to integrate into society in general, and into employment in particular, so that they may sustain themselves financially with dignity. Therefore, it is pertinent to promote an inclusive learning environment for them in higher learning institutions which leads to academic success, and this prompted the study.

There are estimates that 10% of the general populations have a disability but less than 1% of undergraduates have a disability (NDA, 2004). It is a serious issue that the numbers of students with disabilities participating in higher education are minimal. Various studies point to issues in the learning environment and participation of SWD in higher education. Lack of ramps in existing buildings, slippery floors and lecture facilities with seats suitable only for able-bodied students point to exclusive learning environment in higher institutions of education. As Wawire, Elarabi and Mwanzi (2010) note that participation of SWD in the learning activities in Kenya’s university education is poor, translating to below 0.4% of the total number of the students enrolled. Furthermore, Barber (2012) observes that students with disabilities complete universities at a statistically significant lower rate than able-bodied peers indicating that there are issues with the learning environment for this group. It is against this backdrop the
study investigated learning environment and academic participation for students with physical disabilities in higher education.

1.2.1 Purpose of the study
The purpose of the study was to investigate learning environment and academic participation of students with physical disabilities at Kenyatta and JKFAT universities.

1.3 Objective of the study
The study sought to attain the following objectives:

i. To examine access to academic information and how it affects academic participation for students with physical disabilities in the two universities.

ii. To establish the attitudes of lecturers towards students with physical disabilities and how it affects academic participation for the students in the two universities.

iii. To establish the teaching methods used and how these affect academic participation for students with physical disabilities in the two universities.

iv. To establish assessment methods used and how these affect academic participation for students with physical disabilities in the two universities.
1.4 Research Questions
The following questions were pivotal to this study:

i. What is the influence of accessibility to academic information on academic participation for students with physical disabilities in the two universities?

ii. How do the attitudes of lecturers towards students with physical disabilities affect their academic participation in the two universities?

iii. How do teaching methods used affect academic participation for students with physical disabilities in the two universities?

iv. How do assessment methods used affect academic participation for students with physical disabilities in the two universities?

1.5 Significance of the Study
The results of this study were anticipated to:

- Generate information on the learning environment for students with physical disabilities. It is hoped therefore, that this will be beneficial to the government and the policy-makers to improve academic participation of the students in higher institutions of learning.

- Enable the universities management to come up with the disability policy in higher education institution for example in redesigning policies to
promote academic participation and success in education with particular reference to students with physical disabilities.

- Enlighten the university lecturers in exploring better teaching strategies for students with physical disabilities, boost participation of the students in the classroom activities and enhance academic achievement.

- Add to the pool of knowledge in the area of physical disabilities and higher education as well as back up existing theory that contributes to the creation of new research initiatives.

### 1.6 Scope and Limitation of the Study

The study was carried out at Kenyatta and JKUAT universities. The respondents were as follows: Students with physical disabilities, university lecturers who teach the students, the university coordinator of the disability office, housekeepers, library staff and the Tuk-tuks drivers in the two universities.

The findings of the study were limited to the two universities. It was completed within a period of one year, therefore, adequate collection of data, administration of questionnaires, observations, interviews and focus group discussions were restricted to this period. It was also narrowed to one specific type of disability; physical disability, hence, its direct applicability to persons with other type of disabilities is limited.
1.7 Assumptions

The study assumed that:

- Students with physical disabilities have special needs that may present challenges to their capacity to learn effectively in classroom inclusive setting.

- Students with physical disabilities have varying physical limitations and their limitations are expected to be dealt with in different ways to meet their learning needs.

- Not all mobility impairments are constant and unchanging; some students may experience exacerbations or relapses.

1.8 Theoretical Framework

This study was guided by Social model theory. The approach behind the social model is traced to the civil rights/human rights movements of the 1960s. In 1975, the UK organization Union of the Physically Impaired Against Segregation (UPIAS) claimed: "In our view, it is society which disables physically impaired people.” Disability is something imposed on top of our impairments by the way we are unnecessarily isolated and excluded from full participation in society (Hodkinson and Vickerman, 2009).

In 1983, the disabled academic Mike Oliver coined the phrase "social model of
disability" in reference to these ideological developments. He focused on the idea of an individual model (of which the medical was a part) versus a social model, derived from the distinction originally made between impairment and disability by the UPIAS (BRAIN, 2006). Perhaps as, Watermeger, Swartz, Lorenzo, Schreito and Priestly (2006) posit, disability can no longer be seen as a static feature of an individual but rather as a dynamic and changing experience defined by changing nature of environment.

Social model perspective, notes Hodkinson and Vickerman (2009), turns the attention away from identifying people with disabilities to identifying and addressing the barriers in society that restrict their full participation in everyday life. Thus, from this perspective, disability can be understood by focusing on the relationship between persons with impairment and the society or environment of which they are part. Therefore, the response to disability is the restructuring of society for it to be able to deal appropriately with people with disability. In this study, an extended use of the social model was in its analysis of how the society disables persons with physical disabilities by the way they are unnecessarily isolated from full participation in higher education.

The model facilitated the study by turning the attention away from identifying students with disabilities and addressing the barriers in higher education.
institutions that restrict their full participation in learning activities. For instance, adapting teaching, learning, assessment methods to enable them to have full access to university course content. This implies that certain mechanisms need to be put in place to create an environment where all students, including students with physical disabilities, can participate equally in the process of teaching and learning. As Mwaura (2009) observes, disability is not a fixed state and reforms are, therefore, supposed to provide equal opportunities to SWD and even expose the various forms of discrimination and segregation, institutionalization and exclusion.

1.9 Conceptual Framework

The conceptual framework indicates an exclusive learning environment in higher learning institution for students with physical disabilities. As a result, there is a reduced academic participation in higher education institution. It also gives the indicators that point at poor learning environment (LE). These include: less inclusive teaching and assessment methods; negative attitudes towards SWD; restrictive access to books and information, low academic participation and high dropout rates. All these contributed to ineffective LE where little focus is on the creation of appropriate nourishing experiences so that learning comes about naturally and inevitably.
Figure 1.8: Conceptual framework

Adapted from the social model of disability (BRAIN, 2006)
If interventions such as the full implementation of Persons with Disabilities Act 2003 and Disability Policy in Higher education could be reinforced, the situation above would be reversed; conducive learning environment would be enhanced. This would be achieved as follows: By promotion of inclusive teaching methods; adapted teaching and assessment strategies; positive attitude towards students with disabilities; increased accessibility to books and information and inclusive teaching and learning resources. When all these are achieved, academic participation of SWPD would be enhanced. Academic participation (AP) is characterized by: low dropout rates; high level of students’ participation in class activities; high academic achievement and regular class attendance.

Effective AP of SWPD would yield the following outcomes: Success in life; pursuing further studies; and better employment opportunities as well as a shift to higher social-economic. Therefore, higher education has the potential of boosting chances for SWPD to integrate into the society in general, and into employment in particular, so that they might sustain themselves financially with dignity.

1.9 Operational Definition of Terms

**Assistive Devices:** These are instruments and tools that are used to increase functionality for persons with disabilities in such areas as mobility, communication, hearing and seeing.

**Academic participation:** This is how learners access the content of the university
courses as stipulated by various schools and departments.

**Disability:** A physical, sensory, mental or other impairment including any visual, hearing, learning or physical incapability which impacts adversely on social, economic or environmental participation (Persons with Disability Act 2003)

**Higher education:** This includes all types of studies, training or training for research at the post-secondary level, provided by universities or other educational establishments that are approved as institutions of higher education by the competent state authorities.

**Learning environment:** This is the environment that promotes high level of learning and achievement for students with physical disabilities.

**Physical disability:** This is any impairment which limits the physical function of limbs or the fine or gross motor ability.
CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction

In this chapter, the literature on how the learning environment is critical to the learning needs of the students with physical disabilities in higher education provides the framework. The literature sheds light on certain aspects of physical disabilities, schooling and academic participation; access to information; teaching and assessment strategies and inclusive education.

2.1 The Concept of Physical Disability

The concept of physical disability, as WHO (2011) observes is broad and covers a range of disabilities and health issues, including both congenital and acquired disabilities. Mobility impairments range in severity from limitations on stamina to paralysis. Some mobility impairments are caused by conditions present at birth while others are the result of illness or physical injury. Injuries cause different types of mobility impairments, depending on what area of the spine is affected.

2.2 Schooling and Academic Participation for the SWPD at the University

Eriksson and Granlund (2004) provide a definition of academic participation as an integrated term of involvement in activities, evident in the interaction process between an individual and environment. The term participation has several dimensions: taking part, inclusion, involvement in various life areas, and access to the necessary resource. This conceptualization means that students' experiences
include participation and learning in all aspects of academic institutional life, in and outside the classroom. In addition, Pace & Kuh (as cited in Schreuer and Sachs, 2011) pointed that students with physical disabilities should be encouraged to expand and exercise the knowledge gained in formal learning to interact with students, faculty members, and other people outside the campus. Thus, formal and non-formal learning experiences, on- and off-campus interactions, are part of students' roles. However, depending on their particular impairment, most of the students experienced barriers to accessing their education relating to the physical environment or teaching and learning at some points during their studies (Tinklin, Sheila and Alastair, 2004).

2.2.1 Accessibility of Academic Information and Course Content

There are few studies done on students with physical disabilities in higher education in Kenya. Writing about Higher Education Access and Retention Opportunities for students with disabilities from selected universities in Egypt and Kenya, Wawire, Elarabi and Mwanzi (2010) posit that a major barrier to academic and social engagement was lack of adapted curriculum for students with disabilities in almost all courses. This practice not only limits the courses that students with disabilities take to those who do not need scientific manipulations as well as long periods of physical strain or field or laboratory work but also confines them to specific careers which may not be of their choice. Furthermore, the study findings point to the need for the reconstruction of the definition of
disability in Kenya and Egypt that currently centres on visual impairments, in a bid to arriving at a more comprehensive understanding that includes previous neglected components that are relevant for policy and practical provisions. The study narrowed on access of content for students with physical disabilities.

Libraries are the most disadvantaged facilities in the public universities, observe Mwiria et al. (2007), apart from inadequate space; most libraries have no holding lists of their journals. Furthermore, entries in the existing catalogues do not match with what is on the shelves. Shelving, thus, leaves a great deal to be desired, partly as a result of poor staffing. This gives an opportunity to selfish students to mix up textbooks of different disciplines so that they are the only ones who know where to find them and even tear up some pages, thereby inconveniencing a large number of other students. The study focused on how effective the students with physical disabilities access information in view of the mentioned conditions.

A student or instructor with mobility impairment such as the inability to move one’s hands as Olakulehin (2010) notes may use an alternative keyboard and mouse or speech input to gain access to online course materials and communication tools. He further notes that another student or instructor may be able to use standard input devices, but lack the fine motor skills required to select small buttons on the screen. Moreover, if one’s input method is slow, the ability to participate in real-time ‘chat’ communications may be prohibitive.

For Mugo (2008), the greatest hurdle to overcome is enabling the students with
visual impairment at the university to access sufficient information and keep them afloat with technology. He explored current technologies, their challenges and the potential for equalizing access to information for users without sight and those with limited sight. Kagwe (2011) shares the same view that technology is a great equalizer for learners with special education needs who might otherwise not have a full participation in education activities. The study by Mugo (2008) focuses on the aspect of visual impairments and the use of technology. While Kagwe (2011) investigated on the use of assistive technology on teaching and learning process using qualitative method of data collection and analysis, the current study applied mixed methods of data collection and analysis to reduce biases and limited information that may be produced by employing only one method. The study also points out the unique needs of students with physical disabilities that require specific learning environment.

Universities have to ensure that students with special needs, notes JAB (2006), have accessibility to all services such as libraries, computer laboratories, classrooms and lecture theatres. This may require, in some instances, relocation of certain facilities to ground floor or the provision of lifts in certain buildings. It may also involve provision of suitable and frequent transport systems to ferry students with special needs from one location to another within the university precincts. Since then, this has not been implemented to the letter in all universities in Kenya.
Special needs Technology Assessment Resource support Team (START) (1996) posit that inaccessible or partly accessible classroom information is a problem. Students who are hard of hearing may not be able to pick up audio input on an uncaptioned video or podcast. The studies have captured that libraries are the most disadvantaged facilities in the public universities. Furthermore, technology can help to give online course materials and communication tools. The diversified sources of information for students with disabilities have not been adequately dealt with, therefore constituting a gap that was investigated.

2.2.2 Teaching Strategies in Higher Education

For the orthopedically disabled, articulates Olakulehin (2010), the medium of instruction can remain the same as the one of able-bodied students, but the former will need assistance in their mobility, access to the study centre, transport, etc. Students with physical disabilities, explains UNESCO (1994), may require special seating arrangement to meet their needs. For example, special chairs and lower lab tables to accommodate their chairs and allow for manipulation of tools and other equipment as well as flexibility with deadlines to submit assignments. The ability to engage each student, argues Heikinaro (2010), in the physical education lesson develops a teacher-student relationship that promotes learning at each student’s level of engagement. International drive to accommodate diverse learners in the classroom including SWD in the classroom as Magongwa (2009) notes has an impact on SWPD. The same view was echoed by Nyambura and
Ong’eta (2012) that there is need to deal with each SWD as a unique case since their participation in academics could be affected by variables ranging from their physical impairment or the environment or even their own level of self-esteem. Many of these studies were carried out in the Western countries constituting the need to investigate the aspect of teaching strategies in our local context. Also, the studies applied quantitative methods of data analysis while this study used mixed methods of data collection to obtain in-depth and rich data to give more insight and understanding on the problem studied.

Some higher institutions of learning as noted by Mwiria et al. (2007) are making efforts to address the quality of teaching as follows: First tutorial system that collapsed more than ten years ago in public universities has been revived particularly at Kenyatta University. Second, Kenyatta University is discouraging ‘talk and chalk’ method of teaching in favour of the use of transparencies and overhead projectors and, lastly, the same institution is encouraging lecturers to post their lecture notes and other supplementary materials on the Kenyatta university website. These efforts would create a less restrictive learning environment for students with physical disabilities. However, much of the mentioned initiatives have not come into fruition. This constitutes the need to investigate the best effective teaching methodology for students with physical disabilities who are joining higher institutions to advance their skills and training.

There is an issue, argue Wawire, Elarabi and Mwanzi (2010), with the foundation that is acquired by the students with disabilities from high schools. Focus was not
on science - based courses, but rather on art based courses. As Mwiria et al. (2007) posits that students with disabilities are underrepresented in disciplines such as medicine, pharmacy, engineering and technical-based degree programmes. This raises the question: are the learning strategies conducive for handicapped students? So this study investigated how learning environment influenced academic participation for students with physical disabilities.

Tinklin, Sheila and Alastair (2004) observe that adjustments to teaching practices for students with disabilities were difficult to be implemented. Even where the students had received formal agreements to provide reasonable adjustments such as handouts in advance of lectures, they often found themselves in difficulty positions of repeatedly having to for these, to no avail. Some lecturers felt that adjustments to teaching practices would lower standards and give unfair advantage to students with disabilities.

Wawire, Elarabi and Mwanzi (2010) explain that university lecturers admitted to having been ignorant to the special needs of SWD in their classes. As Watermeger et al. (2006) share the same view that the problems experienced by students with disabilities in the classroom are often purely ascribed to lack of necessary assistive devices or technical equipment. While such facilities may form an important part of enabling conditions necessary to support the students in their studies, limited attention is paid to the teaching and learning process itself and the extent to which it may marginalize students with disabilities. Fotin (2011) notes
that a lack of inclusive teaching and learning methods remain within higher education that must be further interrogated. Therefore, this study interrogated how teaching methodologies are critical to the needs of the learners with physical disabilities in the two institutions. On the other hand, Gataka (2009) contends that teaching strategies used are not appropriate for students with special needs in general at higher education institutions. In view of the latter, the current study profoundly examined the mentioned aspects in higher education besides focusing on access to information for the students with physical disabilities; however, the study by Gataka (2009) was carried out in a teacher technical college.

2.2.3 Assessment Methods for Students with Physical Disabilities in Higher Education

Universities have taken steps to strengthen the evaluation of students, posit Mwiria et al. (2007, by including scores from two continuous assessment tests to summative examinations. The initiative, at KU and Egerton Universities, retakes in failed units have replaced supplementary examinations. In addition, students who fail more than half of the units are expelled. As a matter of necessity, this kind of reform should be scaled up by adapting assessment techniques to fit students with physical disabilities who, as a result of impairment, cannot cope in a normal setting. This necessitated this study to document the best assessment techniques for students with physical disabilities. This view is also shared by Konur (2006) who argues that reasonable adjustments to examination are necessary. McCarthy and Hurst (2001) also note that there is need to consider
different types of assessment and identify where there is scope to be flexible, with regard to assessing students with disabilities. They further observe that some assessment strategies present challenges to students with disabilities irrespective of the nature of their impairment. For instance, if the students are assessed in a practical setting such as laboratory, the specific needs of students with disabilities will have to be addressed.

Students with disabilities have difficulty completing various forms of assessment to the best of their ability without some kind of interventions or alterations to the assessment implementations. If examinations are seeking how well students know their subject knowledge and not how well one copes with a timed, speed of writing test, it is unfair for this group of students not to be given extra time so that they can relay the same amount of information as their peers (Wray, 2002). According to Disability rights California (2012) universities need to make modifications to their policies, practices and procedures to accommodate students with disabilities such as allowing course substitution for certain required or pre-requisite courses.

Educational planners and examination bodies, as pointed out by Kamere (2004), see no value in trying to alter, change or modify examination to suit the needs for students with disabilities. These changes, they feel, do not add any value or make any impact on performance, achievement or learning, but would instead be time consuming, expensive, very involving and are of no real benefit. Kamere’s (2004)
study was carried out in a basic level of education; the current study was carried out in a higher institution. This is because the needs of learners are diverse in different level of education. For instance, students in lower level need occupational therapy which may not be required in higher level of education.

In USA as GAO (2009) explains, students with learning disabilities are allowed to take course exams in quiet environments, with certain technical stipulations. Moreover, accommodations are in place for in-class written work (For example, allowing the student to use a scribe, adaptive computer technology, or to complete the assignment outside class) with flexible deadlines to submit assignments.

In South Africa, a Policy for Extra Time in Examinations and Practicals was developed (Biko, 2009), one of the aims of this Policy was to enable the University to provide facilities for students with a very wide range of disabilities. The students whose disabilities necessitate either alternate methods of undertaking examinations and/or extra time are provided. These processes involve extensive assessments of individual students, in conjunction with departmental requirements for the examination such as liaising with the Student Health Service in order that they are given recommendations to the University Administration as to the appropriate means of examination. In addition, Wolanin and Steele (2004) posits that SWDs also genuinely need more time for self- care, daily living and academic tasks than their peers without disabilities. This results in SWDs taking long to complete their degrees as their peers without disabilities.
Some of studies were carried in countries with high technological advancement. Thus, the needs of SWDs may not be the same as in Kenya where many SWDs come from low socio-economic status families. Due to this status, these students lack early exposure to modern technology and well-equipped learning institutions compared to their peers in the west. The studies investigated disabilities in general while this study documented the situation on assessment in our higher institutions for students with physical disabilities as their needs are unique.

2.3 Learning Environment for Students with Physical Disabilities in Higher Education Institutions

Organization and structure of support services at the university might vary considerably, expound Greyling (2008), for many students with disabilities, the disability services office is the first point of contact. This office’s work is to facilitate access and ensure participation to the university for students with disabilities. This involves making reasonable adjustments and provides support for students with disabilities to ensure full participation and equal opportunities.

Facility should be accessible by wheel chair, added Olakulehin (2010), the furniture should be flexible enough to accommodate those in wheelchairs and accessible restrooms and parking should be available nearby.

Physical accessibility of campuses varies enormously, notes Greyling (2008), legislation and policies require universities to provide access to all buildings and facilities, but in reality, many buildings were not designed to provide full access
to students with a physical impairment. Barnes and Mercer (1996) add that socially constructed barriers, for example, in the design of the buildings, modes of transport and discriminatory attitudes have ‘disabled’ people with a perceived impairment. Furthermore, Fotin (2011) explains that limited attention has been placed on addressing issues of participation of SWD with African tertiary environments. This is notwithstanding the fact that students with disabilities have been identified in various governmental policy documents as being historically disadvantaged and deserving special attention. However, at some universities such as Northomria University, there is a private, quiet place where students can go to lie down or rest when they suffer from fatigue due to extreme physical strain on their bodies.

Transport and parking, notes Fuller, Bradley and Healey (2004), often cause problems at many universities, since parking for people with disability is often insufficient, far from buildings and lecture rooms. The seats in lecture rooms are often fixed tiered benches, and stools in laboratories or workshops may be too high. Therefore, alternative arrangements need to be made, for example, a table could be placed in a room in order to take notes, adjustments could be made to benches, adaptive or alternative keyboards could be supplied in computer rooms and photocopies in libraries could be adjusted to a lower level. The researcher has captured detailed descriptive accounts of how the students with disabilities negotiate their academic and social life on campus; the institutional facilities available for the academic and social life of students with physical disabilities;
institutional access policy and the like. The aspects of teaching methodologies, accessibility to information and university lecturers’ attitudes towards students with physical disabilities had not been adequately dealt with hence constituted a gap that was investigated by this study.

2.3.1 Attitude Towards Students with Physical Disabilities

Gataka (2009), discussing constraints to inclusion of the students with hearing impairment for training at Kenya Technical College, revealed that 20% and 25% of students and lecturers respectively had negative attitude towards students with hearing impairment with the view that they are problematic and should remain in the institutions for the deaf. As McCarthy and Hurst (2001) posit the low level of experience in part of society’s background knowledge is applied to almost everybody including staff working in higher education. Because of this, there is a danger of basing contacts on stereotypes on ill-informed attitudes.

For Johnson (2006), attitudes influence success or failure of students with disabilities, and affect inclusion in higher education. Negative attitudes of faculty and administrative staff may prevent students, especially students with invisible disabilities, from disclosing their disabilities requesting accommodations they are entitled to. Wolanin and Steele (2004) observes that faculty attitudes and academic culture are the major barriers to the successful implementation of accommodations for SWDs. Faculty are often ignorant about their responsibilities and about how to relate with the SWDs. Faculty resent being told what to do by
low level staff in the disability service offices and not being able to review or question the legitimacy of a student’s disability or the accommodation that is prescribed.

It is attitudes that disable, notes Coleridge (1992), if able-bodied people did not react with horror, fear, anxiety, distaste, hostility or patronizing behaviour towards disabled people, then there would not be a problem. Discrimination and prejudice create a sense of being disabled that leads to further discrimination and prejudice. He notes that the harsh reality is that if disabled people see themselves as victims, then they will be treated as victims; if they sink into self-pity, they will be perceived as pathetic; if they are hostile towards non-disabled people, they will be shunned; but if they refuse to see themselves as victims, if they claim their own dignity, see themselves as positive and able to contribute, they would be seen as positive and able to contribute.

Traditional attitudes and stereotyping of the abilities of students as Fotin (2011) explains still lead to exclusion and reinforcement of the notion that SWD do not have a future in higher education. Barriers are exacerbated by inequalities inherent in the higher education system. This includes the ways in which higher education institutions (HEIs) as well as the role that higher education plays within society as a whole. For example, students with disabilities are still being excluded based on mere perception of their capabilities where the need for fieldwork or practical development in off-campus facilities is used as excuses for not allowing
them to participate in non-traditional courses and degree programmes.

Campos, Nobre and Ferreira (2010) point out that inclusive sport intervention had a positive influence on the attitudes of the students. These results indicate that the implementation of adapted activities in PE curricular can influence in a positive way the attitudes of the students without disabilities in educational environment and in social life. The studies used either qualitative or quantitative methods of data collection. This study used mixed method to elicit in-depth data give more insight and understanding on the problem investigated.

Gataka (2009) did a research in a tertiary institution focusing on visual disability whose needs are, for example, learning materials like braille, however, the current study was carried out in a higher institution as well as interrogated on the learning and academic participation for students with physical disabilities with different needs such as architectural obstacles within the university’s existing environment.

2.5 Summary

The reviewed literature established that there were very few studies on learning environment and academic participation for students with physical disabilities. Those that exist are from developed countries where students with physical disabilities have been given a lot of coverage and inclusive learning environment, and academic participation is on the forefront. The literature review on learning environment for physically handicapped students in higher education reveals that higher institutions in the West promote inclusive learning environment by putting
up better infrastructure and appropriate adjustments with enhanced technology.

Some of the gaps in knowledge that the present study filled are: First, many studies reviewed applied either qualitative or quantitative methods of data collection. For example, the study carried out by Gataka (2009) used descriptive survey design which involved a case study with application of qualitative methods of data collection; the study carried out by Schreuers and Sachs (2011) applied quantitative methods of data collection and analysis; and the study carried out by Olakulelin (2010) also applied qualitative methods. This study applied mixed method of data collection to elicit rich and in-depth information which gave more insight and understanding on the problem investigated.

Second, many studies investigated disability that includes visual, hearing, and physical. Although some studies investigated on specific disabilities, for example, the study by Gataka (2009) investigated on constraints to inclusion of students with hearing impairment and Mugo (2008) examined empowering visually challenged in higher institutions of learning. This study examined learning environment and academic participation for students with physical disabilities.

Lastly, some of the studies reviewed were carried out either in basic or middle level colleges. For instance, the study carried out by Kagwe (2011), which examined assistive technology in the teaching and learning process in middle level collages. This study was carried out in higher institutions of learning since the needs of learners were different.
CHAPTER THREE
RESEARCH METHODOLOGY

3.0 Introduction

The chapter provides a description of the methods applied in this study. This comprises the research design; the location of the study; target population; population sample and sampling techniques; research instruments; piloting of the study; reliability and validity of instruments; description of variables; data collection; and analysis procedures.

3.1 Research Design

Orodho (2005) states that a research design can be seen as schemes, outlines or plans that are used to generate answers to research problems. This study adapted a descriptive case study design, utilizing both qualitative and quantitative techniques in gathering data. The choice for this design was appropriate because it enabled the researcher to collect in-depth information concerning how learning environment was critical to learning needs of the students with physical disabilities in the two universities. The respondents were then observed and the information gathered was compared to the pre-existing theory. Qualitative methods provided the otherwise relatively non-existent data on the characteristics of SWPD in the two universities in terms of assessment methods, teaching strategies and access to information. It teased out the meanings and processes behind the emergent statistical pattern at Kenyatta and JKUAT universities.
3.1.1 Research Variables

The independent variable is a variable which the researcher manipulates in order to determine its effect or influence on another variable (Mugenda, 1999). In this study, learning environment and the students with disabilities were the independent variable. It entailed: Assessment methods, teaching methods, access to information and faculty attitude. The dependent variable, also referred to as criterion variable, varies as a function of the independent variable. In this study, academic participation for students with physical disability was the dependent variable.

3.2 Location of the Study

Kenyatta University is situated about 23 kilometres from the city of Nairobi on the Nairobi-Thika dual carriageway on a 1,100 acre land. The mandate of the university includes teaching, research and community service (KU, 2011). Kenyatta University was the first public university in East Africa to offer a B.ED degree in special education. Special Needs Education was established as a unit within the department of Educational Psychology in 1995 comprising eight areas of specialization. Due to the increasing awareness and demand for the special education degree course and the need for qualified special educators, three more, areas of specialization were initiated in 1996 namely: education of learners with learning disabilities, mental retardation and those who are gifted and talented (Runo, 2012).
Jomo Kenyatta University of Agriculture and Technology is situated in Juja, 36 kilometres North East of Nairobi, along Nairobi-Thika Highway. The university is committed to the global aspiration of providing equal opportunities to all irrespective of their disability or physical orientation. Students with physical challenges are offered free opportunity to enrol in the courses of their choice, since physical impairment does not translate to mental ineptness (JKUAT, 2012).

3.3 Target Population

The target population comprised: 32 SWPDs consisting of undergraduate students with physical disabilities enrolled in various degree programmes, both regular and self-sponsored; able - bodied students; 192 university lecturers were drawn from departments SWPD had enrolled courses as well as the one who teach the students; two university coordinators of disability office in charge of formulating and implementing disability policies within the universities; 5 housekeepers who took care of the wellbeing of the students in the hostels and the 2 library staff who ensured the students access information and books in the library, 2 Tuk-tuks drivers who facilitated movement of the students within the Universities.

3.4 Sampling Technique and Sample Size

3.4.1 Sampling Technique

Purposive sampling technique was used to select the entire 32 or 100% SWPDs as the key informants. Mugenda and Mugenda (1999) posit that at other times, the target population was so small that selecting a sample would be meaningless and
that taking the whole population in such cases was advisable. Purposive sampling was also used to select the following informants: the two coordinators of disability offices; 2 library staff who deal with students with disabilities, 2 or 100% Tuk-tuks drivers who facilitate students’ movement within the universities and 4 main housekeepers who care for the students with disabilities from the four hostels where they live were also selected. Two able-bodied students who helped and attended classes with the SWPDs provided the researcher information to identify 8 more through snowballing.

In addition, university lecturers were sampled randomly from those departments that offer the units the students were pursuing based on their teaching subjects besides teaching in the tutorials attended by SWPDs as follows: 6 or 10% lecturers, were randomly sampled from each of the three departments namely; Educational Foundations, Educational Psychology and Communication Technology. In the department of special needs where many lecturers are specialized in special need education, 10% or 2 of lecturers were sampled, 4 or 10% lecturers were randomly selected from Kiswahili and of theatre art departments. This is due to the majority of SWPDs specializing in units offered by departments. Also 7 lecturers were selected from the department of business; this was because particularly at JKUAT most students with physical disabilities pursued business-related courses. In addition, 10% or 3 lecturers were randomly selected in the Department of Electrical Engineering and a lecturer in the Department of Biomedical. This helped to explore the aspects of learning
environment that lead to a few students with disabilities pursuing science-based courses at the universities.

3.4.2 Sample Size

Table 3.1 below indicates the study sample size from the two public universities where the study was carried out.

Table 3.1 Sample Size

<table>
<thead>
<tr>
<th>Number</th>
<th>Affiliation</th>
<th>KU Male</th>
<th>KU Female</th>
<th>JLUAT Male</th>
<th>JLUAT Female</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SWPD</td>
<td>14</td>
<td>13</td>
<td>3</td>
<td>2</td>
<td>32</td>
</tr>
<tr>
<td>2</td>
<td>University lecturers</td>
<td>09</td>
<td>8</td>
<td>3</td>
<td>3</td>
<td>23</td>
</tr>
<tr>
<td>4</td>
<td>Universities co-ordinators of Disability office</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>Able - bodied students</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>Housekeeper</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>Library staff</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>Drivers</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>31</td>
<td>24</td>
<td>10</td>
<td>10</td>
<td>75</td>
</tr>
</tbody>
</table>

Source: Kenyatta University and JLUAT, 2012

3.5 Research Methods and Instruments

The research methods and instruments used in this study were observation,
questionnaires, interviews and focus group discussion.

3.5.1 Interviews

Kombo and Tromp (2006) refer to interviews as means of gaining access to important information regarding the respondents and their experience. The researcher asked the informants specific questions as he noted down the answers given. In this study, interviews were conducted to understand how the learning environment was critical to the needs of learners with physical disabilities. The interview format of this study was semi-structured interview. It was conducted making use of an interview guide that was developed before the scheduled interview. Kothari (2004) asserts that this strategy allows flexibility in probing and exploring certain subjects in greater depth. The following respondents were interviewed: Coordinators of the disability office were interviewed on the strategies laid by the universities to create conducive learning environment for students with physical disabilities as well as how well they access the content stipulated by the universities; the housekeepers were interviewed on the aspects of the well being of these students in their hostels and how well it enhanced academic participation of these students, library staff were interviewed on how well these students access information and books in the library and suggestions on how to make it disability friendly, drivers were also interviewed on aspects to do with mobility of these students to lecture halls, library, hostels as well as architectural structure within the universities. The interviews were tape recorded.
with the permission of the informants. Note taking took place during the interviews which assisted to formulate new questions.

3.5.2 Questionnaire

Orodho (2005) explains a questionnaire as an instrument used to gather data, which allows measurement for or against a particular viewpoint. He further asserts that a questionnaire has ability to collect a large amount of information in a reasonably quick space of time. In this study, two questionnaires were developed; for the university lecturers and SWPDs. The questionnaire for the university lecturers was designed to find out the teaching methods, assessment methods, access to information and attitudes held towards SWPDs towards academic participation, as well as how to enhance inclusive learning environment; Lastly the questionnaire for SWPDs established the teaching methods, assessment methods, access to information and attitudes held towards them by university lecturers regarding their participation in class, as well as how to enhance inclusive learning environment. The questionnaires contained open-ended and close-ended items. The open-ended items allowed room for clarification by the informant while closed-ended items yielded objective answers.

3.5.3 Observations

Observation was carried in and out of the lecture halls. All the interactive situations and activities were observed. Observation aimed at verifying information from interviews and questionnaire. Teaching learning process was
observed for example teaching methods, assessment methods and participation of students in class. Moreover, focus on the physical facilities ranging from equipment and furniture to lecture halls and the state of buildings to find out whether they were disability friendly or not.

3.5.4 Focus Group Discussion

Focus group discussions (FGDs) is a special type of group interviews, explains Orodho (2005), in terms of its purpose, size, composition and procedures. The group selected shares certain characteristics which are relevant for the topic being discussed. Focus group discussion is pertinent for identifying and explaining beliefs, ideas or opinions. Moreover, people feel comfortable because it is a form of communication found naturally. In this study FGDs consisted of four SWPDs per group to ensure effective participation of each member in the discussion. It comprised groups of males and female participants in an interactive setting. Each session lasted two hours. The discussion was captured on the following themes: Access to information for SWPDs, attitude held by university lecturers towards participation in class for SWPDs, teaching and assessment methods used. The researcher facilitated the group discussion.

3.6 Pilot Study

To enhance validity and reliability of the research instruments, a pilot study was necessary. Therefore, the researcher conducted a pilot study at the University of
Nairobi (UoN) since it had SWPDs in order to validate the research instruments. The purpose of piloting was to discover any weaknesses in the instruments, check for the clarity of the questions and elicit comments from respondents that assisted in the improvement and modification of the instruments. Piloting also enabled the researcher to detect flaws in the administration of the instruments. The researcher applied the split-half technique of assessing reliability that requires only one testing session. In this approach, an instrument was designed in such a way that they were two parts. Participants' scores from one part were correlated with the scores from the second part. The major advantage of this approach is that it eliminates chance error due to differing test conditions (Mugenda and Mugenda, 1999).

3.6.1 Validity

Validity indicates the degree to which an instrument measures what it is supposed to measure (Kothari, 2004). It’s a non-statistical method, notes Orodho (2004), used in validating the content applied in research tools such as questionnaire and structured interviews. In the pilot study that was carried out, appropriateness of language used in the questionnaire and interview guides was checked, after which appropriate modification of the tools was made to suit the respondent. Furthermore, validity was increased by prolonged and persistent fieldwork to allow interview data analysis and collaboration to ensure match between findings and participant reality; mechanically recording of data by the use of a tape
recorder and participants’ language verbatim through obtaining cited statements of participants as well as using methods of gathering data. In addition, comments, observations and recommendations on the instruments from the supervisors regarding the subject matter of the questionnaire items evaluated the defined content.

3.6.2 Reliability

Reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials (Mugenda and Mugenda, 1999). Reliability of the instruments of the study was established using split-half techniques. The correlation coefficient was 0.85 implying that the research instruments were reliable. Reliability was also increased through triangulation of the results by using multiple methods of gathering data. The developed questionnaires were administered to a few subjects who were not participant in the real study. From the two parts of the instruments correlation coefficient was determined. Ambiguous questions were removed as moderation and introduction of new items were done.

3.7 Data Collection Procedure

At the beginning of the data collection exercise, the researcher had booked an appointment with co-ordinators of disability office, library staff, drivers and housekeepers for interviews using interview schedules. The interviews elicited an in-depth information through probing the respondent. SWPDs and the university
lecturers were issued with the questionnaires which were collected by the researcher after two weeks. The students also participated in the focus group discussions.

3.8 Data Analysis

The process of data analysis involved both qualitative and quantitative methods, observe Mugenda and Mugenda (1999); it is from the results of such analysis that the researcher is able to make sense of the data. The process of data analysis started during fieldwork. To collect data from the respondents, the field notes were utilized. At the end of each day, data were triangulated in order to draw up the correlation. The data were analyzed qualitatively and quantitatively. Observation data were analyzed thematically. Data from the structured interview were converted into a write-up using pre-determined coding categories and reported in narrative form. Field notes was interpreted each day and emergent themes identified. After interpretation, data were fitted into the various themes, guided by the research objectives and questions.

The questionnaires yielded both qualitative and quantitative data. Observations and interviews yielded qualitative data. Quantitative data were analyzed and tabulated using descriptive statistics such as sample tables, pie charts, bar graphs, frequencies and percentages. These were chosen because they communicate the findings to the majority of the readers. This mode of presentation is given a quick visual impression of the quantifiable variables affecting the orientation of students
with physical disabilities. The researcher assembled all the questionnaires and the observation schedule obtained from the field. The instruments were then serialized numerically. The data were presented with the aid of frequency tables, pie charts and percentages. Qualitative data were analyzed narratively and descriptively based on the study objectives. From the mentioned form of data presentation, major findings of the study and discussions were made on the basis of the study, and then the researcher gave the conclusion and the recommendations. The results of this study would strengthen the social model of disability by highlighting how social-environment disables people with impairment (Hodkinson and Vickerman, 2009).

3.9 Logistical and Ethical Considerations

The researcher obtained permission to conduct the study from the universities management. Also, I sought informed consent of each informant explaining the nature and purpose of the study. The researcher assured the respondents of utmost confidentiality as the information was only for research purposes as well as guaranteed to keep them anonymous.
CHAPTER FOUR
DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.0 Introduction
This chapter presents the study results obtained through an interactive process of
data collection and analysis involving both qualitative and quantitative methods.
The data analysis and interpretation were based on the following study questions:

i. What was the influence of accessibility to academic information onacademic participation for students with physical disabilities in the
two universities?

ii. How do the attitudes of lecturers towards students with physicaldisabilities affect academic participation for the students in the twouniversities?

iii. How do teaching methods used affect academic participation forstudents with physical disabilities in the two universities?

iv. How does assessment methods used affect academic participationfor students with physical disabilities in the two universities?

4.1 Demographic Characteristics
The demographic characteristics were analyzed along variables such as gender,age and courses taken.
Table 4.1.1 Nature of Respondents

The table 4.1 illustrates that the majority 32 (42.7%) of the respondents were the students with physical disabilities, 23 (30.7%) lecturers while the least 2 (2.7%) were disability coordinators, library staff and the Tuk-tuks drivers. The table also illustrates that there was gender parity.

Table 4.1 Sample of respondents

<table>
<thead>
<tr>
<th>Respondents</th>
<th>KU</th>
<th>JCUAT</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Lecturers</td>
<td>8</td>
<td>9</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>SWPD</td>
<td>13</td>
<td>14</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Able bodied student</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Disability Coordinators</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Library staff</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Housekeepers</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Tuk-tuks drivers</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>30</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

Source: Kenyatta University and JCUAT, 2012

4.1.2 Age of the Students Respondents

Figure 4.1 indicates that the majority 17 (53.1%) of the respondents were between ages 22-25 years while the least 6 (18.8%) were above 26 years. It can be
concluded that the ages of the majority of the students were within the age range of general student body that joins the public universities in Kenya.

![Students age distribution](image)

Figure 4.1: Age distribution of students with physical disabilities

### 4.1.3 Types of Physical Disability of the Student Respondents

The analysis on table 4.2 below was imperative given that SWPDs were not a homogenous group. The learning environment provided had to be analyzed based on the specific needs of each category of SWPDs existing. From the analysis, students in wheelchairs were the majority implying that barrier free environment is paramount for easy access and participation in learning activities.
Table 4.2: Type of Physical Disability of the Students who participated in the research

<table>
<thead>
<tr>
<th>Type of physical Disability</th>
<th>KU</th>
<th>JCUAT</th>
<th></th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Amputee (Has artificial leg)</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Uses wheelchair</td>
<td>6</td>
<td>6</td>
<td>0</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>Cerebral palsy</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Amputee (upper limp)</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Mild physical disability(limping)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Uses crutches</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Dwarfism</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Kenyatta University and JCUAT, 2012

4.1.4 Courses Taken by Students with Physical Disabilities

Table 4.3 illustrates that thirteen (40.6%) students with physical disabilities in KU took art oriented subjects and humanities. Seven (21.9%) take educational courses while only four (12.5%) in JCUAT and KU took science - oriented courses. During focus group discussions from the two universities, the students revealed that they had challenges in accessing laboratories and other facilities which were important in science subjects as they had not been fully adapted. Previous study on the subject corroborates that SWD were undertaking as Wawire, Elarabi and Mwanzi (2010) observe theoretically-based courses that included arts and humanities, education and law subjects that do not involve field and laboratory
work or manipulations of equipment/apparatus that were found in science subjects like biology, chemistry and physics.

Table 4.3: Courses taken by students with physical disabilities in the two Universities

<table>
<thead>
<tr>
<th>Course</th>
<th>JUAT Frequency</th>
<th>KU Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts/Humanities</td>
<td>0</td>
<td>13</td>
<td>40.6</td>
</tr>
<tr>
<td>Education</td>
<td>0</td>
<td>7</td>
<td>21.9</td>
</tr>
<tr>
<td>Pharmacy/Science</td>
<td>0</td>
<td>2</td>
<td>6.3</td>
</tr>
<tr>
<td>Law</td>
<td>0</td>
<td>1</td>
<td>3.1</td>
</tr>
<tr>
<td>Information Studies</td>
<td>1</td>
<td>1</td>
<td>6.3</td>
</tr>
<tr>
<td>Commerce</td>
<td>4</td>
<td>1</td>
<td>15.5</td>
</tr>
<tr>
<td>BSC. Engineering</td>
<td>1</td>
<td>1</td>
<td>6.3</td>
</tr>
</tbody>
</table>

Source: Kenyatta University and JUAT, 2012

4.2 Access to Academic Information and Academic Participation for Students with Physical Disabilities

The study endeavored to establish accessibility to academic information and how it affects academic participation. The study findings on various aspects of accessibility to academic information were as follows:
4.2.1 Sources of Academic Information

The study investigated different sources of academic information and facilities offered in the two universities. The findings from the students questionnaire were presented in table below.

Table 4.4 Sources of Academic Information

<table>
<thead>
<tr>
<th>Sources of information</th>
<th>JKUAT</th>
<th>KU</th>
<th>Percentage (f/32x100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library</td>
<td>3</td>
<td>13</td>
<td>52</td>
</tr>
<tr>
<td>Class notes</td>
<td>4</td>
<td>15</td>
<td>59</td>
</tr>
<tr>
<td>Internet</td>
<td>2</td>
<td>16</td>
<td>58</td>
</tr>
<tr>
<td>Friends</td>
<td>2</td>
<td>6</td>
<td>26</td>
</tr>
</tbody>
</table>

Source: Kenyatta University and JKTUAT, 2012

The findings in the table above indicate that majority 19 (59%) of the students with physical disabilities in the two universities preferred to use class notes while the least 8 (26%) of students with physical disabilities relied on friends particularly when they were not able to write complete notes, as lecturers dictated notes very fast. For instance, the students with cerebral palsy in KU explained that they had a motor control problem, that involved low coordination of body movements which hindered the use of hands as a result they were not able to cope with the speed lecturers dictated notes as one female student in JKTUAT aptly put
it: “…Some lecturers don’t even care whether you are following…They talk too fast and I can’t write fast so I write what I can get and forget the rest.” The 14 (43.8%) of students in wheelchairs in the two universities found it difficult to maneuver to inaccessible shopping centres to pick handouts as the roads were bumpy and had a rough terrain impassible as one male student in a wheelchair commented, “Places where handouts are placed for photocopying are inaccessible… one finds it difficult going to those centres to pick handouts as the places were totally inaccessible for me using a wheelchair.”

The students focus group discussions revealed that friends delayed delivering handouts to them in time; notes from friends were sometimes not accurate so they were forced to compare notes from different sources making this a demanding task. The researcher went further to interrogate able-bodied students regarding their views in availing information to SWPDs. The study findings revealed that able-bodied students helped them to photocopy handouts whenever they were given by the lecturers. They further observed that some SWPDs were gifted in the sense that they could write notes very fast although sometimes they joined classes when late due to their disability as one student commented: ‘….. Whenever we are given handouts in class, we do photocopy for SWPDs… in class some of them can write notes very fast than us though they come to class late sometimes.”

In addition, the able-bodied students respondents interviewed explained that they spared front seats for SWPDs when late to class as well as assisted them with
notes to catch up. However, the students respondents revealed that lecturers particularly those teaching university common units’ (Courses compulsory done by all students) such as communication skills and HIV and Aids in Kenyatta University and entrepreneurship and communication skills in JKYAT dictated notes very fast than they could write. It is noteworthy that if the students with physical disabilities could miss relevant materials for their learning activities, their participation in academic matters might be negatively affected. For example, the students were unlikely to write comprehensive academic papers and well-researched class assignments as this would lower their academic performance.

It emerged from the study that sometimes students with physical disabilities particularly the one in a wheelchair had challenges in accessing teaching and examination timetable as they were placed in inaccessible areas like notice boards and posters that were placed higher on the walls and billboards that were above their height and therefore, not visible to users of wheelchair.

In an effort to explore strategies and measures that could be taken to enable students with physical disabilities to access information, the study inquired what could be done to solve this challenge. The female wheelchair user students in KU felt that the university should put up a resource centre near their hostels for students with physical disabilities. This will be convenient to them because they could access it with ease, secure as well as use the services in the hostels to enhance their efficacy in learning as one student in KU remarked:
It is challenging for me to go to the library at night and weekends as Tuk-tuks are not in operation. A resource centre near our hostels would do well. (A female wheelchair user student in KU, 2012)

This view was congruent to the feeling of the housekeepers who explained that there was need to have a resource centre near hostels for students with physical disabilities to get more access to learning information since there was no transport service offered to students at night and weekends to access the libraries.

In students focus group discussions, the findings in the two universities revealed that students who were pursuing science subjects experienced difficulties in lab work, for instance, use of lab tables and stools that were high that inconveniences them when carrying out an experiment. They observed that this mired them from getting accurate results in practicals hence they ended up scoring low grades in examinations regardless of one’s capability as one student on crutches in KU commented: “… I find laboratory tables too high for me when carrying out an experiment… pauses…. This sometimes makes my hand to shake interfering with the setup… As a result; I sometimes record inaccurate results that impacted negatively on my performance.”

It emerged from the study that field attachments posed a challenge to students in wheelchair as many buildings where they were attached were not accessible. The findings in one of the focus group discussions in KU revealed that many institutions denied 43.8% students in wheelchair particularly those taking film theatre courses an opportunity for field attachment as human resource managers
believed that they were problematic with minimal input in organizational objectives. Regarding teaching practice, 9.4% students in wheelchairs revealed that accessibility to classes was a challenge. In schools where the students were attached for teaching practice, blackboards were also found to be high though the students had to improvise, for instance, use of charts written by a maker pen though expensive. The study revealed that 6.25% students in crutches found it demanding to keep standing in a class for long time as well as controlling particularly large classes; 3.12% students with cerebral palsy revealed that writing on the chalkboard was a challenge as well as giving explanation of concepts. As a result, they were not able to cover the content for a lesson that demanded arrangement of extra classes for the purposes of syllabus coverage. Because of the challenge, the students experienced due to their impairments, they claimed to have scored average grades such as Cs in their teaching practice.

Regarding usability of the library and internet room in the two universities, the study revealed that only 7 SWPDs visited them everyday to search academic information necessary for accomplishing tasks such as class assignment, academic papers and takeaway CATs. This is captured in this quote:

I usually go to the library and special need computer room five times a week to search academic information from internet and books to enable me do the class assignments. Weekends special need room is closed and Tuk-tuks services are not provided. (Female wheelchair user student in KU, 2012)
An interview with one of the disability coordinators in one of the two universities revealed that the university was in the process of formulating a policy that would ensure that the learning environment was fully adapted to meet the varied needs of the students with disabilities. In ten year strategic plan, the university was aiming to full inclusivity in line with international protocols that propagate inclusivity of students with disabilities. This would enhance an inclusive learning environment that would give an opportunity to all students with physical disabilities successfully complete their university programmes and secure long - term jobs in the labour market. Box 4.2 in one of the two universities gives a description of special need computer section of the library observed to illustrate nature of internet room in terms of spacing capacity and adaptations to cater for needs of SWPDs.
Box 4.1: An observation of Special needs Computer section of a Library

**Date:** 13/06/2012.

**Description**

The computer room has dimensions approximately 25m by 7m fitted with 14 computers. The room is accessible as it is located, ground floor with ramps constructed right away from the main entrance and free from obstacles. The entrance door is approximately 2.5m big enough for wheelchair users. The room had two rows; one row has computers placed on tables while the other row has tables mainly for study purposes when one is not using a computer. On the far end of the room were two shelves, one holding books in audio form while the other books in braille form for easy orientation of students with visual impairment. The other corner of the room is equipped with the studio that contains braille embosser that transforms soft copy material into braille. Also there is a thermoforming machine to photocopy braille work besides the production of audio material for students with visual impairments. The tables are wider enough with the height of approximately 1.2m to ensure users of all heights can reach all operable parts.

The hallway is 1.5m and the radius between tables 1.5m to enable a wheelchair user navigate with ease. The computer hardware was not fixed on the tables in order to be easily repositioned for convenient use depending, the nature of ones’ physical disability. The room is adequately ventilated with efficient supply of electricity connected to each computer within as well as internet supply through the connection which allowed access to the internet continuously. Lighting system is excellent as the room is fitted with a set of nine lighting points each fitted with four tubes which are controlled by different switches for convenience of users.

There were three lab technicians who helped students to access the computer hardware and software with ease. The technicians seemed to be hospitable and served the students with great dedication and passion. The other four floors of the post modern library were computer labs though spacing was not adequate for wheelchair users. In addition, the university has four other computer centres for students that are accessible though not very convenient as the computers are fixed and the hallway is not adequate for wheelchair users.
It needs, however, to be pointed out that the two universities have over 100 students with special needs-visual, mobility and hearing. As has been discussed above, the capacity of the special needs room in Kenyatta University is inadequate to serve all students with disabilities. Furthermore, it emerged from the research that averagely 7 (21.9%) students with physical disabilities were using the library per day. This begs the question, were the needs of students with physical disabilities met in the library? At JKUAT the resource centres to cater for the diverse unique needs for SWPDs was conspicuously invisible despite the efforts the University is making to realize full accessibility and inclusivity.

4.2.2 Accessibility to Library Services

The researcher sought to establish accessibility to library services for students with physical disabilities. The study findings revealed that the construction of ramps and user friendly pavements were among the efforts the two universities had made to enhance accessibility of learning information by students with disabilities in the libraries as exemplified by Plate 1.1 in KU, though old library buildings were observed lacking ramps for easy access as shown by Plate 2.1 in JKUAT.
Plate 1.1: University Library with ramps for easy access for students with physical disabilities

Plate 2.1: University Library with no ramps for easy access for students in wheelchairs

It emerged from the study that both the two universities, libraries lacked ramps inside for students with physical disabilities to navigate to higher floors which contained learning resources that were useful for their courses. Elevators and escalators were observed to be available but sometimes they were out of order due to breakdowns or power breakouts as they needed high voltage source of power to
run that might not be sustained by power generators sometimes. For Jomo Kenyatta University of Agriculture and Technology, it was observed that the external ramps were partially constructed thus denying students on wheelchair easy accessibility. The study findings further showed that the special need section of the libraries in KU were wanting. In one of the students focus group discussions, the respondents revealed that despite the services offered in special needs section of the library, needs for students with physical disabilities were not met particularly the 6.2% students with cerebral palsy who found it challenging to use the computer keyboards and mouse. This is because the services were geared towards meeting the needs of students with visual impairments. This could adversely affect the students with physical disabilities from accessing useful journals and materials for their scholarly work and might negatively on impact the level of class involvement. For different categories of students with physical disabilities, different computers were required for full accessibility. For instance, the students with cerebral palsy who had speech impairment needed augmentative and Alternative communication devices that transfer text to speech. The students without all arms (Amputees) needed switch input devices instead of a keyboard or mouse.

Similarly, the interview with the library staff in KU affirmed the same view that the special need room specifically caters for the needs of visually impaired students such as braille services, provision of large prints and adapted computer software and hardware. The library staff further observed that the main service
they provided students with physical disabilities was helping them to get books from the shelves. This was in congruence with the students respondents who went further to reveal that the library section set a side for learners with special needs catered only for those with visual impairments hence they popularly referred to it as “visually impaired section” instead of special needs section.

It was noted that adaptations to suit 6.2% students with cerebral palsy and the 9.4% amputee (without all upper limbs) were yet to be realized. These entail enlarged keyboard, trackballs, and joysticks as they are easier to control than a mouse. In addition, students who are unable to use the keyboard or mouse could use switch input devices so long as they had good control of other muscle groups.

Another significant finding of the study was that 43.8% wheelchair user students missed learning materials for some units particularly science-based in the library. This is attributed to few books in medical field that were jointly shared by other sciences available; as a result, the students with physical disabilities had minimal chances to get them. This is exemplified by the quote below:

...For us taking pharmacy, a few reference books are available in the library. The one available we share with students taking courses in other medical fields. When a lecturer gives an assignment rarely can I get the reference book to help me do the task as in most cases the books are taken by able-bodied peers (Female student in KU, 2012).

It emerged from the study that accessing books on high shelves was sometimes a challenge for wheelchair user students given that they needed assistance most of the time and they felt this denied them independence. Consequently, this could
have an effect in terms of writing well researched term papers and assignments and it might negatively affect their performance in some units. Lack of such adaptation could affect such students negatively particularly when researching information to write term papers and doing class assignment. The study findings further revealed that for wheelchair users’ accessibility to computer room and the computer hardware and software was paramount as they do not need any kind of adaptations to computers.

4.2.3 Accessibility to Lectures

The study sought to investigate accessibility to lectures. The students’ responses from the questionnaire showed their appreciation to the efforts the two universities were making to ensure that all lecture rooms were accessible by constructing ramps to the existing buildings. The results of the study revealed that in KU 41(51%) of lecture rooms had standard ramps, 20(25%) had no ramps while 19(24%) had steep ramps. In JKUAT, 19(38%) had standard ramps, 20(40%) had no ramps while 11(22%) had steep ramps as one student in JKUAT made a remark saying:

...accessing some classes is a nightmare…. There are no ramps, other ramps are steep. They just put up steep ramp without bearing in mind the one to use them. We have said this several times, nothing is done and when we ask, they say we are stubborn (A male student on a wheelchair in JKUAT, 2012).
It also emerged from the study findings that in all the two universities, accessibility to the lecture halls was hindered by too steep ramps for a student in a wheelchair to navigate through or those in crutches to walk through as shown in Plate 3.1 in KU as well as partial construction of ramps as illustrated by Plate 4.1 in JKUAT that denied easy ride for a student on a wheelchair when moving from one class to another.

Plate 3.1: Lecture halls with steep ramps meant for easy access for students with physical disabilities
Lack of ramps or partially constructed ramps in the two universities hindered particularly the 43.8% students on wheelchairs accessing some classes in time particularly those located upstairs hence they ended up writing incomplete notes or missed classes. Consequently, this impacted on their participation in class activities negatively. This scenario pointed to a lack of flexibility and adequate planning in the institutional practices. It seemed that planning was made for the majority and in process; the minority with diverse needs were invisible. However, the responses from the university coordinator of disability office in one of the two universities revealed that the university had over the last few years embarked on strategies for removing physical barriers within the institution’s physical
environment and provision shuttle services including use of Tuk-tuks to facilitate accessibility to lecture venues.

Furthermore, the co-ordinator reiterated that there was a challenge for students with physical disabilities in terms of class arrival in time. This was aggravated by increased enrolment of students with disabilities at the institution who had lectures in different halls and yet the university had only two Tuk-tuks to facilitate their movements. It is important to note as the students arrived in classes late, their learning activities may be hampered.

It emerged from the study findings that provision of suitable and frequent transport systems to ferry students with special needs from one location to another within the university precincts was paramount. The students respondents in KU proposed a van with a lift as a better option particularly for wheelchair user students who found it challenging to use Tuk-tuks whereas SWPDs in JKUAT suggested to the university administration to provide shuttle services to facilitate their movement to and from classes.

In addition, the results from the focus group discussions of students in KU affirmed that sometimes the students belated arriving in class. This was as a result of the shuttle services using Tuk-tuks was inadequate in the sense that students with disabilities were many as these hindered their participation in class learning activities. These findings were congruent with university lecturers who observed
that sometimes students with physical disabilities joined classes when late as this disadvantaged them in terms of keeping the same pace with others.

The researcher went further to interrogate the Tuk-tuks drivers regarding accessibility of students to lectures in order to illuminate more light on the issue. The Tuk-tuks drivers commended the University for providing transport services to students with disabilities. The drivers observed that the services were important to facilitate movement of students from class to class and back to hostels. However, the drivers observed that it was exigent to ferry students to classes for example when many students were calling to be taken to various classes at the same time. It is worthy to note that in such circumstances students were likely to arrive to classes late. This had adverse effects on classroom participation. For instance, the Tuk-tuks drivers posited that when the students went to classes late, they become frustrated and were likely to have a low concentration in class. The same view as shared by a female student in crutches who echoed that it was frustrating when one got to classes when late as they missed part of the lecture, for instance;

It is frustrating to go to class when late; one misses part of the lesson… puts a sad face… Tuk-tuks drivers sometimes do not observe time and ignores my calls. This makes me late to class. (Female student in crutches in KU, 2012)

This non-verbal message showed deep sense of sadness that the student had. In addition, the drivers revealed that some students with severe physical disabilities
had to be lifted in and out of the Tuk-tuks as this made them to delay to ferry other students.

In addition, the students with physical disabilities in a focus group discussion reported that some students can’t board Tuk-tuks with ease; they had to be lifted inside besides the fact that Tuk-tuks did not have enough space to carry their wheelchairs. Therefore, they unanimously supported the idea of adapted vehicle with a lift as more convenient and ease facilitation of their movement within the university as this would go a long way in promoting their performance in academic endeavors.

The observation findings in the two universities showed that some lecture halls particularly for common units where many students attended classes lacked space for one using a wheel chair to manoeuvre to the front of the room easily, students in wheelchair sat by the door. Consequently, this significantly denied the students with physical disabilities an opportunity of asking and answering questions in class thus lowering their participation as it was not easy for a lecturer to identify them.

The study further sought to establish class adaptations and there effects in academic participation for students with physical disabilities. The study findings in the two universities showed that the students with physical disabilities experienced some challenges as a result of seating arrangements and adaptations in their learning activities. For example, from the students focus group Discussion
the findings revealed that seating arrangement impacted on the learning of SWPDs in the class, particularly when the lecturers were dictating notes very fast. The students felt that it was necessary to have designated seating in the large lecture rooms with many students with a visible label. This would ensure that they had an opportunity to sit in front in the classroom to enhance increased involvement in the class learning activities. One student on a wheelchair revealed that in large classes particularly university common unit, they were not able to access the class as a result of congestion as illustrated in this remark:

... in large classes, particularly common units...I simply learn through the door.... My wheelchair can’t fit in as I lack a place. (A male student on a wheelchair in JKUAT, 2012)

The study results also revealed that in KU, the school of engineering laboratory lacked some crucial equipments and facilities. To bridge this hiatus, the students were taken to another laboratory of a different higher learning institution where largely the environment was disability unfriendly. For instance, a student on crutches revealed that most of the facilities and equipment were difficult to manipulate as they were made without students with physical disabilities in mind. Consequently, one fails to gain practical skills pertinent for career growth.

4.2.5 Discussion

As has been noted above, students with physical disabilities could access over 50% of their academic information from library, class notes and internet. The
study established that the two universities have moved with speed to put up user-friendly pavements, ramps, facilities and equipment to enable students with physical disabilities access academic information in the library and lectures. It was noted by the study findings that some facilities, equipment, and services had not been fully adapted to suit the heterogeneous needs of students with physical disabilities. For example, it was evident from the results that special need section of the library in KU had not been fully adapted to suit the needs of the students as it was demonstrated by computer hardware and software, chairs and tables, and limited space. These findings concur with the study by Fuller, Bradley, and Healey (2004) that observed, alternative arrangements need to be made, for example, adjustments could be made to benches, adaptive or alternative keyboards could be supplied in computer rooms and photocopies in libraries could be adjusted to a lower level to enhance participation of students with physical disabilities. One could confidently assert that, these practices were likely to have negative implication in the students’ academic life for example in writing term papers and class assignments as the provisions were critical in accessing academic information. Mwiria et al. (2007) confirmed that libraries are disadvantaged facilities in the public universities in Kenya with inadequate space to cater for the diverse needs of the learners.

The study found that the newly constructed lecture halls had ramps and designed pavements for ease accessibility of students with physical disabilities though they did not adhere to international standards fully. Some lecture halls built in earlier
years lacked ramps that posed a challenge to the students with physical disabilities to access those classes that were located upstairs. It was also noted that most seats in lecture halls were not adapted to suit the heterogeneous needs of students with physical disabilities with limited space for wheelchair users to manoeuvre to the front side of the lecture halls.

The results also established that the students arrived late in some lecture rooms aggravated by inadequate transport services. The students claimed that sometimes they were not able to write complete notes as they arrived in the lecture room late. Consequently, the students could not keep pace with others and effectively participate in class activities like presenting papers, asking and answering questions. This pointed to a lack of proper planning in the institutional practices as one could expect all classes for SWPDs accessible with reliable transport services. These findings were also echoed by the previous study by JAB (2006) for easy accessibility for SWPDs, it may require some instances relocation of certain facilities to ground floor or the provision of lifts in certain buildings. It may also involve provision of suitable and frequent transport systems to ferry students with special needs from one location to another within the university precincts. Sadly, it has not been implemented to the letter in two universities as the findings revealed that no shuttle services were provided in JUKAT for SWPDs.
In addition, the study found academic information to be useful in terms of enhancing effective class participation. Lack of access to some information was said to be a setback to students with physical disabilities as it negatively affected class learning activities such as group discussions, presentation of papers and asking and answering questions in class. This also relates to START (1996) findings that posited that inaccessible or partly accessible course information can be problematic for students with disabilities.

4.3 Attitudes of Lecturers towards Students with Physical Disabilities and their Academic Participation

This section presents the key research findings in response to the main objective of the study, which was to investigate the lecturers’ attitudes towards students with physical disabilities and its effect on academic participation in the two universities. A question was asked in the student questionnaire regarding the feelings of the university lecturers towards SWPDs and their participation in learning activities. The responses were arranged into two categories. One representing positive attitude while another negative attitude. The study findings revealed 17 (52%) lecturers had a positive attitude towards them as well as involved them in class activities. For instance, one student narrated how some university lecturers were caring. One day when the student was absent in class, the lecturer inquired about his whereabouts and interrogated the fellow students whether they were caring for him. The student further explained that the lecturers were very happy when they participated in class learning activities for example
asking and answering questions in class. This increased motivation to students to attend all classes as they also recorded impressive performance in their examinations.

Fifteen (48%) of students observed that lecturers had negative attitude towards them as they rarely involved them in class activities. The respondent explained instances where lecturers failed to involve them in learning activities probably as a result of a negative attitude towards them. The quote from a student in KU amplifies this:

A lecturer told me to hire a helicopter if I wanted to go to class because it was upstairs, 1st floor 8.4.4 block (Male, wheelchair user student in KU, 2012).

Another respondent explained that the lecturer failed to involve them during a field trip lesson by selecting inaccessible sites which they felt was as a result of negative attitude towards them as illustrated by this quote:

I felt excluded during a field trip to Mangrove forest where my wheelchair could not access the rocky shore (Female student in KU, 2012).

The study findings further revealed that students with physical disabilities wanted to be treated equally as their peers without disabilities. The students observed that they should not be given too much attention in class as it was captured in this quote:
Mostly we are not discriminated what I don’t like is lecturers who give so much attention until one feel uncomfortable (Female student in JKUAT, 2012).

From the university lecturers questionnaire, the study revealed that 11(45%) of the lecturers’ lacked knowledge on the needs of students with physical disabilities as they were not informed regarding the presence of the students in their classes with the appropriate adjustments. A question was asked in the lecturers’ questionnaire regarding their feelings towards participation of students with physical disabilities in learning activities. The responses indicated that the majority 15 (65%) of the respondents had a positive attitude towards the students because they have full range of qualities, skills, attitudes and shortcoming as everyone else. As one lecturer observed, “Students with disabilities are like any other student…. They have qualities and shortcoming as every one else…..” The respondents further explained that the students with physical disabilities asked and answered questions in class when provided for with resources and treated in a humane manner. Other lecturers 8 (35%) empathized and felt sorry for students with physical disabilities but did nothing to help them only expected the students to work hard. It emerged from the results of the lecturers motivated, gave opportunity and adjusted their learning environment and gave appropriate learning resources to enhance their participation in learning activities. The results further showed that positive academic staff attitude could contribute to students with physical disabilities participation in learning activities. The quote from one female student in KU captures this:
They are amazed and appreciate my participation in class and this makes me feel free to participate in class learning activities (Female student on crutches in KU, 2012).

Similarly, another student noted that:

University lecturers have positive attitude hence I feel comfortable attending and participating in class activities regularly (Male student in KU, 2012).

Regrettably, the study results from university lecturer indicated that some lecturers felt that it was challenging to engage learners with physical disabilities in class learning activities as they take long to grasp the concepts. The extract below illustrates this:

It is difficult to interact them in learning activities as their rate of grasping the content is quite low (Male university lecturer in JKUAT, 2012).

This study result corroborates with earlier findings that revealed that some university lecturers sympathized with the students with physical disabilities. This stigmatized the students as they only needed a barrier free environment to boost their participation in class learning activities since they have capabilities of achieving academically.

It emerged from the study that for those lecturers, who were caring, friendly, treated the students with dignity and they did not see them having a disability they attended their classes regularly as well as highly participated in learning activities. While the study also revealed that for those lecturers whose attitude affected them negatively, dictated notes very fast in their units which led to boredom and
writing of incomplete notes. Consequently, the students did not attend classes regularly and lowly participated in class learning activities. This resulted to students scoring low grades in such units hence negatively impacted on their overall grades. Furthermore, some students did not get affected by lecturers’ attitude as they were compelled to attend classes regularly and involve in learning activities since at the end of the semester they had to sit for examination. To them, they believed that the only way to success in life is to excel in academics regardless of attitudinal barrier in the university environment.

The study went further to interrogate the disability co-ordinators regarding the feelings of lecturers towards inclusion of students with physical disabilities in their classes. The responses revealed that the co-ordinators as a university lecturer always helped the students to settle down in classes and fully included them in class learning activities. Furthermore, the co-ordinators noted that the students did not need sympathy from anybody whatsoever as the students were capable to achieve academically only the learning environment that needed to be barrier free with fully inclusion of the students in academic activities. However, the co-ordinators observed that some university lecturers particularly in sciences seemed to discriminate the students for instance in field and laboratory work where the students demanded more explanations and assistance. They also explained that when the university lecturers had positive attitudes towards the students, they got motivated, high self - esteem as a result they participated and attended the classes regularly. This is translated to better performance and success in life.
It emerged from the student respondents that the attitude of the Tuk-tuks drivers and library staff towards them was critical as they negotiated their academic life at the university. The study results revealed that Tuk-tuks drivers who had positive attitude towards the students with physical disabilities always received their calls instantly and observed time such that they did not miss classes. They further added that such drivers were caring, passionate and understanding as they comfortably drove them to classes or library and back to the hostels. It is worth noting that if the students were ferried to classes on time, definitely their participation in class activities would be enhanced as well as recording good scores in their examinations.

On the other hand, the findings revealed that those drivers who were perceived to have a negative attitude towards the students made them to delay classes as a result they were frustrated with low concentration in learning activities. The researcher went further to interrogate Tuk-tuks drivers regarding their attitude towards students with physical disabilities. The findings showed that the drivers experienced fulfilling experience in serving the students, although they worked continuously without a break. This might give an explanation why they sometimes treated students unpleasantly.

The student respondents further revealed that library staff was not meeting their needs of which they linked to their negative attitude towards them. The respondents added that when they needed assistance to access some computer
software, they lacked the attention they deserved. The evidence of these research findings leads the researcher to posit that it’s becoming important to have orientation and induction programmes to all who serve the students with physical disabilities to create awareness and sensitization towards their diverse needs in order to serve them well with dignity.

4.3.1 Discussion

From this section it can be deduced that over 11 (50%) of university lecturers had positive attitude towards students with physical disabilities. They felt that the students had full range of qualities, skills, attitudes and shortcoming as anyone else as well as were very happy when the students participated in class learning activities.

The study found that some university lecturers treated the students with physical disabilities negatively. This was demonstrated by lecturers choosing inaccessible sites for fieldwork, feeling sorry for the students, not involving the students in class activities and dictated notes very fast without minding SWPDs pace of writing. The results indicated that negative attitude of lecturers towards the students made them not to attend classes regularly, denied them a chance to participate in class activities and even affected the students’ performance negatively. These findings corroborate with previous studies in the subject by Gataka (2009) and Johnson (2006) who explained that university lecturers’
attitudes influence success or failure of students with disabilities, and affect inclusion in higher education.

It needs, however, to be pointed out that in the formative stage in life, the majority of people did not encounter anyone with a disability (McCarthy and Hurst, 2001). They further reiterated that this low level of awareness is part of the society’s background knowledge; it applies to almost anybody including academic staff in the universities. As a result of this, there is a danger of basing acquaintances on stereotypes on ill-informed attitudes. It was established that lecturers lacked knowledge on the needs of the students with physical disabilities as they were not informed regarding the presence of the students in their classes with the appropriate adjustments. The lack of knowledge on the needs of students with physical disabilities has been identified as a barrier to students’ participation in learning activities.

Based on the respondents’ opinions regarding the feelings of the university lecturers towards the students with physical disabilities, there emerge two types of lecturers. The first group consists of lecturers who go out of their way to make sure students with physical disabilities benefited maximally from the lecture, were at ease and felt included academically as well as emotionally. While the second is that group that empathized and felt sorry for the students. The findings corroborates Wolanin and Steele (2004) findings that faculty attitudes and academic culture are the major barriers to the successful implementation of
accommodations for SWDs. Faculty are often ignorant about their responsibilities and about how to relate with the SWDs.

The majority of students with physical disabilities reported arriving classes late resulting from delays of Tuk-tuks drivers particularly the one perceived to have a negative attitude towards them by failing to pick them for classes in time. This caused frustrations to the students resulting to lower concentration in learning activities.
4.4 Teaching Methods and Academic Participation for Students with Physical Disabilities

The study sought to investigate the teaching methods used at the two universities.

In responding to a question in the lecturer and students questionnaire, the table below gives results of teaching methods.

Table 4.5: Teaching Strategies

<table>
<thead>
<tr>
<th>Teaching methods</th>
<th>N=32 SWPD</th>
<th>N=23 University lecturers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>JKUAT</td>
<td>KU</td>
</tr>
<tr>
<td>Lecture</td>
<td>4</td>
<td>27</td>
</tr>
<tr>
<td>Group discussion</td>
<td>3</td>
<td>26</td>
</tr>
<tr>
<td>Paper presentation</td>
<td>4</td>
<td>22</td>
</tr>
<tr>
<td>Question and answer</td>
<td>3</td>
<td>23</td>
</tr>
<tr>
<td>Online teaching</td>
<td>2</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: Kenyatta University and JKUAT, 2012

The table above from the student and lecturers questionnaires in the two universities revealed that lecture, group discussion and question and answer were the most commonly used strategies accounting for students 31 (96%), 29 (92%), 26 (82%) and university lecturers 23 (100%), 19 (81.25%) and 17 (75%) respectively. Online teaching seemed to be least commonly used method
represented by 9 (28%) students and 11 (46.15%) university lecturers. These were fairly high percentages and indicated some possibility of accommodating students with physical disabilities since most of them were student centred. In group discussion of students, it was revealed that lecture method was dominant although group discussion, paper presentation and online teaching were also used. The students observed that when a variety of methods of teaching were being used, they were in a better position to understand new concepts taught in class. The same view was shared by one of the coordinator of disability who observed that as a lecturer different methods of teaching enhance learning of new theories and ideas.

In addition, during classroom observations, it was observed that majority of the university lecturers used a variety of teaching methods. Even where lecture method dominated other methods like question and answer and class discussions were also used. The study findings revealed that question and answer method was enjoyable when the university lecturer could give a chance to all students and not only those who seemed to know. It was also observed that during question and answer method, lecturers concentrated on the active students. This could disadvantage 6.2% students with cerebral palsy and 9.4% amputees who were not able to raise their hand to answer a question as a result of impairment as well as sitting behind the class. However, the university lecturers indicated that some students with physical disabilities did not answer questions freely in class without being prompted.
The students focus group discussion further revealed that group discussion method included them in terms of involvement in class activities. For instance, one female student on crutches explained that group discussion enabled her acquire knowledge, master the content and boosted her confidence. The student was only uncomfortable with the way the fellow students stared at her when asked to explain a concept in class instead of concentrating on the discussion as amplified in this quote:

…. Group discussion helps me acquire new concepts, master the content and become self confident. What I don’t like are students looking at my legs when am told to explain the point in front (Female student on clutches in JKUAT, 2012).

One female student on crutches revealed that group discussion enabled her to understand people with different personalities and ideas as well as enhanced academic performance. She further reiterated that in a group fully accepted, one gains a sense of belonging and motivation to unleash ones’ potential for excellence. It needs, however, to be pointed out that 21.9% students with physical disabilities were excluded from group activities by their peers without disabilities only their names were included during the submission of the assignment as one student on crutches in JKUAT aptly put it: “...when having group discussions, they (able -bodied students) would excuse or exclude me from the discussions... They just put my name as a member of the group for submission of the assignments…I feel left out.”
The university lecturers revealed that group discussion encouraged participation of students with physical disabilities in class as they were able to give their opinions on the issues under discussion. They also reported that group discussion equipped the students with diverse knowledge from fellow students and research work from given assignments hence improving their level of academic achievement. For instance, one female student on a wheelchair in JKUAT commented, “Sometimes we are given a topic to expound as a group and later given mark... This helps me to understand the content taught in class.” The university lecturers also revealed that group discussion could yield good results over 70% in terms of offering learners opportunities to participate, contribute and listen to views of others.

It emerged from the study results that in both the two universities, lab work posed challenges to students with physical disabilities. A female student on a wheelchair in KU revealed that the tables from where they carried experiments had high heights the same with water taps. As a result, many a time they ended up making unnecessary errors as they strived to get accurate results. This is exemplified by this quote:

> When I look at our laboratory, it is assumed we are not there...don’t they have eyes to see this? Adjusting the heights of tables, water tabs for people like us...or they think we only do humanities (Female wheelchair user student in KU, 2012).
The study findings showed that field trips were challenging to students with physical disabilities in the two universities. For instance, geography trips posed a lot of challenges to students on wheelchairs as the fields were not accessible. The students ended up staying in the buses as they waited to be informed by friends what they had observed in the field. The students observed that they received biased information as their friends had different interpretations and perspectives regarding the subject under investigation. The students suggested that lecturers should select accessible places for field trip. For inaccessible places, lecturers would rather take video clips for class demonstrations for better understanding of concepts. As amplified by the student remark saying:

….Just like infrastructure...lecturers should look at any aspect of inclusivity when selecting places for field trips. Inaccessible places they should go and take video clips for the purposes of demonstration in class (Male wheelchair user student in KU, 2012).

The students particularly the 6.2% with cerebral palsy reported that some lecturers projected notes very fast and not laudable enough hence they were not able to write notes as they sat at the back of the class. The student quoted:

I am a slow writer, some lecturers are not aware of us...I suggest lecturers to project notes in slow manner (Male student in KU, 2012).

Despite the fact that teaching methods were not fully tailored to meet the unique needs of students with physical disabilities, they argued that it was rarely they could think of dropping out of the university. They explained that it is only higher
education that can give them wings to fly out of the yoke of discrimination and stigmatization that is common in the society.

The researcher also interviewed coordinators of disability offices in the two universities regarding involvement of students with physical disabilities in class learning activities. One of the coordinator, observed that diversification of conventional teaching methods in learning would yield a greater result in terms of learners’ involvement in class activities. However, he articulated that the key challenge to students was taking notes fast given the fact that lecturers dictated notes quickly as well as the handouts were not accessible. The major aim and objective of helping the students with physical disabilities was mainstreaming them in an inclusive setting, further reiterated the coordinator.

4.4.1 Discussion

The majority of the respondents indicated that lecture, group discussion and question and answer were the most commonly used teaching strategies accounting for over 75%. These were fairly high percentages and it demonstrated accommodation of students with physical disabilities since most of them were learner centred. It could be said that the use of varied teaching strategies would enhance students’ better understanding of new concepts as well as increased participation in class activities. The researcher also noted lecture method being dominant although the respondents claimed that it was not an inclusive strategy. Online method of teaching was the least used strategy according to the study
results. This may be aggravated by information communication technology (ICT) integration has not been fully achieved. It can also be explained by resistance to change especially among staff to deliver on digital platform as this is the way for the future.

Many students with physical disabilities in the two universities asserted that lecture halls and laboratories were not fully adapted to suit their unique needs. This could be explained by the findings that noted absence of designated seating position for the students and high laboratory tables and stools. This hindered the students’ participation in class activities for example writing accurate notes, getting correct readings and measurements in the practical lessons. It is evident that the students’ performance might be negatively affected. This finding concurs with Wawire, Elarabi and Mwanzi (2010) findings which indicate that this practice not only limits the courses that students with the disabilities take to those that do not need scientific manipulations as well as long periods of physical strain or field or laboratory work but also confines them to specific careers which may not be of their choice. Previous studies on the subject also noted that the students with physical disabilities may require special seating arrangement to meet their needs. For example, special chairs and lower lab tables to accommodate their wheelchairs and allow for manipulation of tools and other equipment as well as flexibility with deadlines to submit assignments (UNESCO, 1998; Fuller, Bradley, and Healey, 2004).
The study also established that when varied teaching strategies were employed, most students had increased involvement in class activities. Group discussion, paper presentation and question and answer methods of teaching yielded good results they offered learners opportunities to participate, contribute and listen to views of others. However, lecture method of teaching emerged to be dominant and yet it denied a chance to students with physical disabilities to write complete notes, ask and answer questions in class. One could point out that in such situations the students’ performance might be negatively affected. The students with physical disabilities vowed to soldier on as they could not think of dropping out of the university. They added that it is only higher education that can give them wings to fly out of the yoke of discrimination and stigmatization that is common in the society. This also relates to Mike Oliver’s theory discussed in chapter one, in which it is the society which disables people with physical impairment. Again, Hodkinson and Vickerman (2009) results were in line with these findings that disability is something imposed on top of impairments of persons with disabilities by the way they are unnecessarily isolated and excluded from full participation in society.

Many students with disabilities in the two universities noted that field trips were challenging. For instance geography trips posed a lot of challenges to students on wheelchairs as the fields were not accessible. This denied the students an opportunity to carry out fieldwork as their peers without disabilities. The students ended up receiving biased information as their friends had different interpretations
and perspectives regarding the subject under investigation. This is in agreement with Fotin (2011) and Tinklin, Sheila and Alastair (2004) findings which noted that lack of inclusive teaching and learning methods remain important barriers within higher education institutions. Adjustments to teaching practices for students with disabilities were difficult to be implemented. Even where the students had received formal agreements to provide reasonable adjustments such as handouts in advance of lectures, they often found themselves in difficulty positions of repeatedly having to for these, to no avail.

4.5 Assessment Methods and Academic Participation for Students with Physical Disabilities

The study endeavored to investigate assessment methods used and how they affect academic participation. The study findings on various aspects of assessment methods were as follows:

4.5.1 Assessment Methods

The study sought to establish the assessment methods used at the university. The responses from the students questionnaire revealed the following methods as shown in table below.
Table 4.6: Assessment Methods

<table>
<thead>
<tr>
<th>Assessment methods</th>
<th>JGUAT</th>
<th>KU</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examination</td>
<td>5</td>
<td>27</td>
<td>100</td>
</tr>
<tr>
<td>Sit in CATs</td>
<td>4</td>
<td>22</td>
<td>80</td>
</tr>
<tr>
<td>Takeaway CATs</td>
<td>3</td>
<td>19</td>
<td>70</td>
</tr>
<tr>
<td>Practicals</td>
<td>1</td>
<td>09</td>
<td>30</td>
</tr>
</tbody>
</table>

**Source: Kenyatta University and JGUAT, 2012**

From the table above on assessment methods used, the results indicate that 100% was examination in the two universities while 30% practicals. The study findings revealed that continuous assessment tests (CATs) such as sit in and takeaways, practicals and examination were the key methods of assessment that were used. This could be attributed by the fact that they were the conventional methods used for assessment globally. It could probably be an indicator that most lecturers preferred students to read their notes and test them within that knowledge. This was clearly indicated in the analysis on learning information on which most SWPDs relied on lecture notes. The study findings further showed that practical method was used. This could be attributed to the fact that they were some students taking science - oriented courses such as electrical engineering, pharmacy, biochemistry and bachelor of education science.

**4.5.2 Suitability of Assessment Methods for Needs of SWPD**
The study sought to investigate suitability of assessment methods used in terms of enabling the students with physical disabilities to participate effectively in class. The findings from university lecturers questionnaire were revealed in the figure 4.5 below.

![Figure 4.5: Suitability of assessment methods](image)

Figure 4.5 indicates that 80% of assessment methods in the two universities were suitable to enhance academic achievement while 16% revealed they were not suitable. It further shows that 4% was non-committal. The study results from the university lecturers questionnaire revealed that through the assessment methods, it was possible to note the weaknesses of the students and rectify them if the methods were used effectively. They further observed that students with physical disabilities particularly 43.8% wheelchair users were able to research and write
their answers without problems as they performed well in their examinations given the accessibility needs met. However, one student on crutches in KU expressed dissatisfaction with practical assessment method used in a film theatre class. For instance, lecturers demanded them to participate in practical works regardless of ones’ disability as amplified in this quote:

During a dancing practical lesson a lecturer demanded that I should also dance. When I told him I won’t because of my disability, he insisted that I could dance either by shaking my head or else I was going to lose some marks for the unit (A female student on crutches in KU, 2012).

It can be noted that whereas the university lecturer aimed at including the student in learning activities, there was a conflict of perception where the student felt demoralized. It is important, however, to mention that if students with physical disabilities were assessed in a practical setting such as dancing theatre, the specific unique needs of the students would have to be addressed, and it is in this type of situation that lecturers’ consultations with the students can be most useful.

The female students on crutches noted that sometime the assessment methods encouraged rote learning as they crammed for examination without comprehending the concepts learnt in class for the purpose of application in the real life situations. They added that technical units should be tested practically without examinations as this is salient in the world of work where practical aspects are paramount.
The study findings also revealed that although 6.2% students with cerebral palsy experienced examination as very exhausting, they felt that writing examinations was the only way to learn and gain knowledge in a particular subject area. As illustrated by this comment:

Assessment helps me understand easily what has been taught in class and what to do practically in a really situation (A male student with cerebral palsy in KU, 2012).

The study findings further showed that 18.8% students with physical disabilities experienced some challenges as a result of practical work in the laboratory. For example a female student on crutches explained that practical work was more tiring and sometimes they ended up not obtaining an accurate result for instance, “…the practical work expects more physical ability from me that I can’t offer…. Sometimes practical work requires me to go alone to far areas which become cumbersome.”

The study further interrogated the disability coordinators on assessment methods used in terms of enabling the students achieve academically. The responses revealed that assessment methods were suitable as they enabled the lecturers to deduce whether the students had fully comprehended the concepts learnt in class. One of the coordinators observed depending on the subject for example music dancing was substituted with singing for wheelchair - user students. Film theatre, students on wheelchairs were allowed to dance using only the head excluding the other parts of the body as well as excluded from video shooting with full award of
marks though they were required to learn the skills, said one student. In addition, practicals were demanding as laboratories needed to have some tables and stools with the height approximately 1.4m globally accepted for wheelchair users as well as the water taps.

4.5.3 Examination time Allowance and Adaptations

The study endeavored to establish time allowances and adaptations in examinations. The responses of the study were as follows: The results from students’ questionnaire revealed that time given during examinations and practical lessons was not enough as the students with physical disabilities ended up not completing their task. As a result, some students ended up scoring low grades in some units that was discouraging. The study further observed that assessment methods were a challenge in the sense that when one fails the CATs or examination, it had a negative effect on final grades which made them either repeat the unit that makes one to stay longer in campus.

The majority 16 (70%) of the university lecturers revealed that the students needed to be given more time as some students were not able to finish their tasks in time. In one of the two universities, the lecturers noted that a special room should be identified for examinations as students with physical disabilities comprised different categories of students whose needs were diverse such as adaptations of chairs and tables to sit comfortably while doing the examinations. This would enhance the performance of the students with physical disabilities.
In KU, there was a special room for examination that served students with disabilities; however, the study revealed that it served particularly students with visual impairment with a few students with physical disabilities. Many students with physical disabilities in the two universities sat for their examination with able-bodied where they were given limited time to complete their examinations.

Sixty-two percent of students with cerebral palsy revealed that they had a problem with their motor control that impacted proper coordination of hands. As a result, they were not able to write very fast hence they needed more time to complete the task. For those students who sat their examinations in a special room revealed that it was hard to concentrate as there was a lot of noise from braille machines that were being used by students with visual impairment. They further noted that they were given inadequate time regardless of their unique needs such as slow pace of writing an examination paper.

The 43.8% students on wheelchair revealed that after writing for a given span of time, they burned out as a result of disability. Therefore, they needed more time to complete answering all the questions in the examination paper. Others 15.6% of students with mild physical disabilities such as amputees revealed that they had no problem sitting for examination with able-bodied students as they were able to finish their examinations within stipulated time. The SWPDs in KU also added that they got difficulties accessing special need department which is located upstairs as it plays the key role in negotiating their grievances regarding
examination time allowances. In JKUAT SWPDs observed that accessing disability directorate in charge of their welfare was a nightmare as it was located second floor of one of the university buildings. On the other hand, the study findings through observation revealed that students with physical disabilities were given extra time in examination although sometimes not enough as illustrated below.

During examination or sit in CATs, I find myself not finalizing or leaving some questions not done due to the time limit set for all to finish which is not as per my pace of writing (A male student with cerebral palsy in KU, 2012).

It emerged from research that grading in the two universities disadvantaged students with physical disabilities who were not able to complete answering all questions in the examinations due to ones’ health conditions with inadequate time. One male student in a wheelchair revealed that failing an examination implied that one had to sit for supplementary examination which was hectic given every semester has a specific number of units to be covered. He further reiterated that it could be better for university to consider adjusting grading for SWPDs. This is captured in this quote:

... If I will not finish a paper because my speed is slow I may fail. I think the universities should do what KNEC and JAB does in grading students with disabilities. What is happening is like taking Lewis and Tyson to fight...one is too big, another too small (A male wheelchair user student in JKUAT, 2012).
4.5.4 Discussion

It was clear from the data on assessment methods that 100% was examination; 80% sit in CATs; 60% takeaway CATs while 30% practical. The respondents noted that the methods were suitable in the sense that they pointed out the weaknesses of the students to be rectified.

The study established that time was a critical aspect in examinations as many students noted that sometimes they were not able to complete answers to all questions and practicals. It can be said based on such circumstances that the performance of students with physical disabilities was bound to be negatively affected. This scenario pointed to a lack of flexibility and proper planning in the institutional practices as one would have expected that all SWPDs to be given time based on ones’ needs as well as doing examinations from well-adapted rooms. This finding corroborates with Kamere (2004) who pointed out that those educational planners and examination bodies see no value in trying to alter, change or modify examination to suit the needs of students with disabilities. These changes, they feel, do not add any value or make any impact on performance, achievement or learning, but would instead be time-consuming, expensive, very involving and are of no real benefit. Wray (2002) also adds that students with disabilities have difficult completing various forms of assessment to the best of their ability without some kind of interventions or alterations to the assessment implementations. If examinations are seeking how well students know
their subject knowledge and not how well one copies with a timed, speed of writing test, it is unfair for this group of students not to be given extra time so that they can relay the same amount of information as their peers.

Many of the examination rooms had limited adaptations to meet the heterogeneous needs of SWPDs. There is need to consider different types of assessment and identify where there was scope to be flexible, with regard to assessing SWPDs. It was also noted that grading in the universities disadvantaged SWPDs as in some circumstances they were not able to complete the examinations tasks as a result of ones’ health conditions. These findings were supported by McCarthy and Hurst (2001) and Biko’s (2009) findings that specific examination needs of students with disabilities will have to be addressed to promote success in their academic endeavours.
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the summary of the principal findings, conclusions, recommendations of the study. It also contains suggestions for further researches in the area covered by the study.

5.1 Summary of the Findings

These case studies were carried out at Kenyatta and JLUAT universities. The focus of the study was learning environment and academic participation of students with physical disabilities in higher education. The study aimed at examining access to academic information and academic participation for students with physical disabilities; establishing the attitudes of lecturers towards students with physical disabilities and their academic participation; establishing the teaching methods used and academic participation for students with physical disabilities; and establishing assessment methods used for grading students with physical disabilities.

Access to Academic Information and Academic Participation for Students with Physical Disabilities

The findings of the study revealed that while the majority 19 (59%) of the students with physical disabilities preferred to use class notes, 8 (26%) relied on friends particularly when they were not able to write complete notes, given situations where lecturers dictated notes very fast. The study findings revealed
that the learning information was useful to some extent though not fully because sometimes the students missed reference books in the libraries and this deterred their full participation.

The study findings also revealed that the two universities had made a lot of efforts towards inclusivity and accessibility for all. KU has over the last few years embarked on strategies for removing physical barriers within the institution’s physical environment and provision shuttle services using Tuk-tuks to facilitate movement of students with physical disabilities within the university to access academic information in line with Persons with Disability Act 2003. The study findings further revealed that there were some challenges with regard to access to academic information for students with physical disabilities. For example, some buildings had stairs or too steep ramps to navigate through. These hindered the students to attend some classes in time particularly those located upstairs. As a result, their participation in class activities was minimized.

The study revealed that in KU, special needs section of the libraries was not fully adapted to meet the heterogeneous needs of students with physical disabilities. For example, most of chairs and tables were not fully adapted to cater for the heterogeneous needs of the students community; and most of the computer hardware and software were best suited to students with visual impairment as demonstrated by braille machines, crystal clear CCTV, jaws and magnifiers.
Attitudes of Lecturers Towards Students with Physical Disabilities and Academic Participation

The study findings revealed that over 50% of the university lecturers had a positive attitude towards students with physical disabilities. The study results further showed that a positive attitude by academic staff contributed to SWPDs participation in learning activities for example students asking and answering questions in class, regular class attendance, high motivation and scored good grades. The research also revealed that 11 (45%) of the lecturers lacked knowledge on the needs of students with physical disabilities as they were not informed regarding the presence of the students in their classes.

Teaching Methods and Academic Participation for Students with Physical Disabilities

It emerged from the study that lecture was most commonly used strategy accounting for over 90% of the time while online teaching seemed to be least commonly used method represented by 9 (28%) students and 11 (46.15%) university lecturers. The study findings revealed that use of diverse methods of teaching enhanced learners’ participation in learning activities. However, the results of the study revealed that lecture method of teaching was not effective although it was the most preferred method by the university lecturers. It hindered the students with physical disabilities from writing complete notes as well as reduced their involvement in learning activities. As a result, their academic achievement was reduced.
The study findings showed that the students with physical disabilities experienced some challenges as a result of seating arrangements and adaptations in their learning activities. The students felt that it was necessary to have designated seating in the large lecture rooms with many students with a visible label. This would have ensured that they had an opportunity to sit in front in the classroom to enhance increased involvement in the class learning activities. It also emerged from the study results that lab work posed challenges to students with physical disabilities. The research revealed that the tables from where the students were to carry experiments had high heights, the same with water taps.

Assessment Methods and Academic Participation for Students with Physical Disabilities

The findings of the study regarding assessment methods indicated that 100% was examination; 80% sit in CATs; 60% take away CATs while 30% practicals. The study findings revealed that CATs such as sitting in and takeaways, practicals and examination were the key methods of assessment that were used. The results further showed that through the effective use of assessment methods, it was possible to note the weaknesses of the students and rectify them. The study findings indicated that the students with physical disabilities were able to research, write their answers as they perform well in their examinations. The study findings further revealed that time given during practical lessons and examinations was not enough as the students ended up not completing the work. As a result, some students scored low grades in some units. It also emerged from
research that grading in the universities disadvantaged students with physical disabilities who were not able to complete answering all questions in the examinations due to ones’ health conditions with inadequate time.

5.2 Conclusions

Based on the study findings, the following conclusions were made:

- The learning environment was limiting full participation of students with physical disabilities in their academic matters. Proper infrastructural adjustments seem to be critical for promoting inclusivity and accessibility for all. The universities need to provide an environment where there is equality of opportunities and where SWPDs can enjoy a quality experience while pursuing their studies.

- Appropriate adaptations to meet the diverse academic needs of SWPDs had not been fully achieved in the two public universities. These would include spacing, furniture, technologies, ramps, equipment in all lecture halls, laboratories and libraries that meet internationally accepted standards for persons with disabilities. These had negatively affected the participation of SWPD in their learning activities.

- There was inappropriate accommodation of students with physical disabilities in teaching and learning activities. This is because there was little involvement of the students by some lecturers in class activities. The
lecturer’s attitude towards SWPD had an implication in their academic endeavors thus they need to be properly equipped with knowledge on the diverse unique needs of the students.

- There were limited adaptations of teaching methods to suit specific needs of students with physical disabilities. This is because the students in the two universities were not homogenous in terms of their unique disabilities. This lack of suitable adaptations based on ones’ needs had a negative implication on learning of the students.

- There was inadequate time given to students with physical disabilities during examination and practicals in the two universities. This was due to many students with physical disabilities sat for their examinations in common rooms with able - bodied peers. In fact, this was likely to impact their performance negatively.

5.3 Recommendations

Based on the study results and the conclusions, the following recommendations were made in order to facilitate conducive learning environment and academic participation of students with physical disabilities in the two institutions.

(i) Architectural Designs

There is need for more barrier- free and disability friendly environment to enable students with physical disabilities to have access to buildings, academic
information, materials, assistive devices and other equipment to promote their mobility as this will increase their participation in learning activities. This could be achieved by universities administration removing all physical barriers within institution’s physical environment by construction of ramps that are according to international standards such as 1:12 (One inch of rise to 12 inch on slope), 3 feet width and 6 feet land width with 60” length and user-friendly pavements in all establishments within the campuses.

The users particularly students in wheelchair should be able to operate the computer from a clear, flat area with at least a 1.5 meter radius directly in front of the computer workstation to enable a wheelchair to turn. It is important to ensure that users of all heights can reach all operable parts. The comfortable range is between 1200 and 900mm. The maximum acceptable reach height for wheelchair users is 1400mm (UNESCO, 2010). Provision of shuttle services to facilitate students’ movement within the universities is important and should be tailored to meet the individual needs. This may be achieved by universities administration replacing Tuk-tuks with adapted van with a lift. The government through the Ministry of Gender, Children and Social Development and other donor agencies should allocate more funds to the universities to support their initiative of enhancing infrastructural development and purchasing of expensive equipments for SWPDs.
(ii) Sensitization and Awareness Programmes

There is need for universities administration to promote sensitization programmes such as seminars, sporting activities, workshops and forums to increase the level of awareness of the needs, aspirations and capacities of students with physical disabilities with a view to enhancing their acceptance, participation in learning activities and integration in the university communities. The programmes would aim at ensuring that students with physical disabilities live in dignity and enjoy their human rights and barriers that exclude them from full and equal involvement in class learning activities to be addressed. This would make the university community to have a more positive attitudes and appreciation towards the students with disabilities as well as become aware that disability is not inability. In addition, the students need more awareness to utilize the available facilities to the maximum to enhance their academic participation.

(iii) In-service Training and Refresher Courses on Teaching Strategies

There is need for universities administration to provide in-service training and refresher courses on inclusive teaching and learning methods to the university staff. This could ensure that teaching strategies used are appropriate to students with special needs in general in the two universities. The university lecturers should meet with students with physical disabilities at the beginning of every
semester to discuss the appropriate adaptations on the teaching methods to enhance their participation in class learning activities.

(iv) A Policy on Allowance

There is need for policy-makers to develop institution’s Policy for Extra Time in Examinations and Practicals. One of the aims of this Policy is to enable the universities to provide facilities for students with a very wide range of disabilities. The students whose disabilities necessitate either alternate methods of undertaking examinations or extra time to be provided. These processes could involve extensive assessments of individual students, in conjunction with departmental requirements for the examination such as liaising with the Student Health Service in order that they are given recommendations to the universities administration as to the appropriate means of examination.

5.4 Areas for Further Research

The study has revealed that gaps still exist and there is need for further studies in the following areas:

- There is need to carry a similar study to investigate the learning environment and academic participation in other group of disabilities such as visual and hearing impairments in the two universities.

- The similar study can be done in all other public universities in Kenya since this study findings cannot be generalized to other universities.
- There is need to carry out a study exploring best practices in teaching methods for students with different types of disabilities in higher institutions of learning in Kenya.

- There is need to carry a study exploring the reason behind some university lecturers being caring for students with physical disabilities while others do not.
REFERENCES


Campos, M., Nebre, M., & Terreiva, J. (2010). *Attitude of 14 to 16 years old students without disabilities towards inclusion in physical education*. Finland. EUCAPA.


Kenyatta University.


APPENDICES

MAP OF KENYA SHOWING THE LOCATION OF THE TWO PUBLIC UNIVERSITIES

Adapted from Google Earth (2012)

KEY

A. Kenyatta University (KU)
B. Jomo Kenyatta University of Agriculture and Technology (JKUAT)
INTERVIEW SCHEDULE FOR UNIVERSITIES DISABILITY CO-ORDINATORS

Guidelines

Your response is treated with utmost confidentiality and shall not be revealed to anybody. The purpose of this study is to *examine how the learning environment influences the academic participation of students with physical disabilities at Kenyatta and JUAT universities*. Kindly, you are assured that in this study all responses are good and valuable….Do not leave any question(s) unanswered. Please you are asked to cooperate and ask/inquire from the researcher about any issue(s) which may not be clear…

WELCOME

1. How many SWDs have physical disabilities?

2. What are sources of academic information available for learners with physical disabilities? (Probe type of information, the frequency, and accessibility of the information etc.)

3. How effective is the academic information available to learners with physical disability? (Probe about usefulness in terms of facilities and equipment, enabling them to write quality academic term papers, academic achievement, level of satisfaction etc.)

4. What are the feelings of lecturers towards inclusion of students with physical disabilities in their classes? (Probe about lecturer attitude and how it may affect learners’ participation in class activities, class attendance etc.)

5. What are your views about the teaching methods used by the university lecturers in terms of enabling students with physical disabilities to participate effectively in class? (Probe about lecturers’ preparedness, reasonable reading work, class involvement of learners e.g practical activities and laboratory work, accessible handouts etc)

6. What are your views about the evaluation methods used by the university in terms of enabling students with physical disabilities to achieve highly academically (Probe adaptations possible on practical exams such as science and physical education, dropout rates etc.)

7. What are the common challenges of students with physical disabilities that are brought under your attention? In your view how can they be solved?
8. In your opinion, what are the recommendations to promote effective learning environment and enhanced academic participation for students with physical disabilities at Kenyatta University?

   Thank you for your time and cooperation.
QUESTIONNAIRE FOR STUDENTS

Dear Respondent,

We are carrying out a study on *Learning Environment and academic participation for students with physical disabilities at Kenyatta and JKUAT Universities*. You have been selected as a respondent to assist by providing some of the information that we consider important to this study. We are therefore requesting you to respond to all items in the questionnaire. Please be fair and honest.

Please note that any information given will be treated with utmost confidentiality.

**INSTRUCTION:** Please answer all the items in the questionnaire.

**Background Information**

What is the medical term of your impairment?

How old are you? (Tick appropriately)

1. 18-21 years [ ]
2. 22-25 years [ ]
3. 26 years and above [ ]

Sex (Tick appropriately)

i. Male [ ]
ii. Female [ ]

Year of study (Tick appropriately)

i. 1\textsuperscript{st} [ ]
ii. 2\textsuperscript{nd} [ ]
iii. 3\textsuperscript{rd} [ ]
iv. 4\textsuperscript{th} [ ]
v. 5\textsuperscript{th} [ ]

Course of study (Tick appropriately)

i. Bed Science [ ]
ii. Bed Arts [ ]
I Access to Academic Information for Students with Physical Disabilities

Q1. What are the sources of academic information available regarding learning?

( \( \checkmark \) Where appropriate)

i. Library [ ]
ii. Class notes [ ]
iii. Internet [ ]
iv. Friends [ ]
v. Others (Specify)....

Q2. Please indicate the extent to which you agree with the following statements regarding access to academic information at the university.

Rate the following statements as follows:

A - If you agree

UN - If you undecided

D - If you disagree
Tick (✓) one choice which is appropriate for each statement

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<td>2</td>
<td>Students with physical disabilities can access university classes with ease</td>
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<td>3</td>
<td>University library can be accessed easily by all students with physical disabilities</td>
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<td>4</td>
<td>The available academic information helped SWPD to participate in their learning activities.</td>
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Q3. Rate the adequacy of academic information you give in line with the following [Only one answer should be selected for each statement]

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Q4. What are some of the challenges you experience in accessing information?
Q5. Suggest solutions to the above challenges above.

I. Attitudes of Lecturers Towards Students with Physical Disabilities and Academic Participation

Q1. Please indicate how you feel regarding your participation in the class learning activities. Rate the following statements as follows:

A - If you agree
UN - If you are undecided
D - If you disagree

Tick (✓) one choice which is appropriate for each statement

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<td>There is involvement of SWPD in class learning activities</td>
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<td>There is equal treatment of SWPD as their peers without disabilities</td>
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<td>3</td>
<td>University lecturers lack knowledge on the needs of SWPD</td>
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<td>4</td>
<td>The SWPDs are capable and as good as able bodied peers</td>
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Q2. Do you remember a time when you really felt excluded in class during learning activities? (Tick appropriately)

Yes [ ]
No [ ]

Q3. Do you remember a time when you really felt included in class during learning activities? (Tick appropriately)

Yes [ ]
No [ ]
II. Teaching Strategies

Q1. What are the teaching strategies used in your class. (Tick where appropriate)

i. Lecture
ii. Group discussion
iii. Paper presentation
iv. Question and answer
v. Online teaching
vi. Others (Specify)……

Q2. Please indicate extent the following teaching strategies take into consideration your special needs.

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<td>Not involved at all</td>
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<td>1</td>
<td>Lecture</td>
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<td>2</td>
<td>Group discussion</td>
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<td>3</td>
<td>Question and answer</td>
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<td>4</td>
<td>Online teaching</td>
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Q3. What challenges do you face with regard to participation in classroom activities?

Q4. In your opinion how will they be overcome?
III. Assessment Methods

Q1. What are the assessment methods used in your class? (Tick where appropriate)

i. Examination [ ]
ii. Sit in CATs [ ]
iii. Takeaway CATs [ ]
iv. Practicals [ ]
v. Others (Specify)……

Q2. Please indicate the extent you agree or disagree regarding the suitability of assessment methods to meet your academic needs.

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<td>Undecided</td>
<td>Disagree</td>
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<td>1</td>
<td>Examination</td>
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<td>Sit in CATs</td>
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<td>3</td>
<td>Takeaway CATs</td>
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<td>4</td>
<td>Practicals</td>
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Q3. The following questions are designed to collect information on how assessment methods enhanced your academic participation. Respond by selecting from the following scale to indicate your agreement or disagreement with the following statements:

A - If you agree

UN - If you are undecided
D - If you disagree

Tick (✓) one choice which is appropriate for each statement

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<td>1</td>
<td>Assessment methods helps to note the weaknesses of the students to rectify them</td>
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<td>UN</td>
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<td>2</td>
<td>Writing examinations is the only way to learn and gain knowledge</td>
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<td>3</td>
<td>Extra time enabled students with physical disabilities to complete examination tasks</td>
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<tr>
<td>4</td>
<td>Examinations are tiring tasks</td>
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Q4. What challenges do you face when these assessment methods are used with regard to your academic performance?

Q5. In your view how these challenges can be overcome?

In your opinion, what are the recommendations to promote conducive learning environment and effective academic participation for students with physical disabilities?

Thank you for your time and cooperation.
Student Focus Group Discussion

Guidelines

Thank you very much for taking your time to respond to these questions. Please feel free to respond to the questions asked during this discussion. Your responses during this discussion will be treated with utmost confidentiality and shall not be revealed to anybody. Please you are asked to cooperate and ask/inquire from the researcher about any issue(s) which may not be clear….

WELCOME!!

1. What are sources of academic information available regarding learning? (Probe type of information, the frequency the information can be accessed and accessibility of the information etc.)

2. How useful are the information available to you in relation to academic needs? (Probe about usefulness in terms of facilities and equipment, enabling them to write quality academic term papers, academic achievement, level of satisfaction etc.)

3. Please share with me your challenges regarding information access, for example
   i. Doing assignments
   ii. Examination regulation
   iii. Deadlines (Assignments, tests)
   iv. Learning materials

4. What are the feelings of your lecturers towards your participation in academic activities? (Probe about lecturer attitude and how it may affect learners’ participation in class activities and how attitude will affect academic achievement, class attendance etc.)

5. How do you think the lecturers’ attitude affects your participation in academic activities? (Probe whether their expectations are met, involvement in learning activities.)

6. What are the teaching methods used in your class? ([Probe lecturers’ preparedness, teaching methods that suit their needs, class involvement e.g practical activities and laboratory work, realistic expectation of reading work, access to handouts etc.)

7. Explain how useful are these methods to enhance your effective participation in learning activities. (Probe about class attendance, completion rates etc.)
8. What challenges do you face with regard to your participation in classroom activities?
9. What is the assessment methods used in your class?
10. Explain whether these assessment methods are effective to enhance your academic achievement (Probe about adaptations in practical exams, academic achievement, and accessible examination rooms, dropout rates etc.)
11. What challenges do you face when these methods are used with regard to your academic performance? In your view how, these challenges can be overcome?

Thank you for your time and cooperation.
UNIVERSITY LECTURER QUESTIONNAIRE

Dear Respondent,

My name is Wyclife Ong’eta. I am a masters student in the department of educational foundations, school of education, Kenyatta University. We are carrying out a study on “learning environment and academic participation for students with physical disability at Kenyatta and JKUAT Universities.” You have been selected as a respondent to assist by providing some of the information that we consider important to this study. Please be fair and honest. Please note that any information given will be treated with utmost confidentiality and only for academic purposes.

Instructions: Please respond to all items in the questionnaire

Background Information

Are you aware of any student with disability in your class? (Tick appropriately)

Yes    [ ]
No      [ ]

How many students do you have in your class with physical disabilities?

I. Access to Academic Information for Student with Physical Disabilities

Q1. What are the sources of academic information available for students with physical disabilities at the university? (✓Where appropriate)

vi. Library     [ ]
vii. Class notes [ ]
viii. Internet   [ ]
ix. Friends     [ ]
x. Others (Specify)…..

Q2. Please indicate the extent to which you agree with the following statements regarding access to academic information for SWPD at the university.

Rate the following statements as follows:
A - If you agree

UN - If you undecided

D - If you disagree

Tick (√) one choice which is appropriate for each statement

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<td>The available academic information helped SWPD to participate in their learning activities</td>
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Q3. Rate the adequacy of academic information you give in line with the following [Only one answer should be selected for each statement]

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<td>Enabling facilities and equipments</td>
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<td>2</td>
<td>Enabling students to write quality academic papers</td>
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<td>5</td>
<td>Increased level of participation in class activities</td>
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<td>Promotes high Academic achievement</td>
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Q4. What are some of the challenges the students with physical disabilities experience in accessing information?

Q5. Suggest solutions to the above challenges above.

II. Attitude of the Lecturers Towards Academic Participation for Students with Physical Disabilities

Q1. Please indicate how you feel regarding participation of SWPD in the class learning activities in your classes. Rate the following statements as follows:

A - If you agree

UN - If you are undecided
D - If you disagree

Tick (✓) one choice which is appropriate for each statement

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<td>4</td>
<td>The SWPD are capable and as good as able bodied peers</td>
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Q2. Do you think your attitude affect participation of students with physical disabilities in classroom activities?

III. Teaching Strategies

Q1. What are the teaching strategies you use in class? (Tick where appropriate)

vii. Lecture [ ]
viii. Group discussion [ ]
ix. Paper presentation [ ]
x. Question and answer [ ]
xi. Online teaching [ ]
xii. Others (Specify)…….
Q2. Please indicate extent the following teaching strategies take into consideration SWPD special needs.

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<td></td>
<td>Online teaching</td>
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</table>

Q3. What challenges do you face with regard to participation in classroom activities for students with physical disabilities?

Q4. In your opinion how will they be overcome?

**IV. Assessment Methods**

Q1. What are the assessment methods you are using? (Tick where appropriate)

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>vi.</td>
<td>Examination [ ]</td>
</tr>
<tr>
<td>vii.</td>
<td>Sit in CATs [ ]</td>
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<td>viii.</td>
<td>Takeaway CATs [ ]</td>
</tr>
<tr>
<td>ix.</td>
<td>Practicals [ ]</td>
</tr>
<tr>
<td>x.</td>
<td>Others (Specify)…….</td>
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</table>
Q2. Please indicate the extent you agree or disagree regarding the suitability of assessment methods to meet the needs of students with physical disabilities

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</table>

Q3. The following questions are designed to collect information on how assessment methods enhanced academic participation of SWPD. Respond by selecting from the following scale to indicate your agreement or disagreement with the following statements

- **A** - If you agree
- **UN** - If you are undecided
- **D** - If you disagree
Tick (✓) one choice which is appropriate for each statement

<table>
<thead>
<tr>
<th></th>
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<th>A</th>
<th>UN</th>
<th>D</th>
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<tr>
<td>1</td>
<td>Assessment methods helps to note the weaknesses of the students to rectify them</td>
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<tr>
<td>2</td>
<td>Writing examinations is the only way to learn and gain knowledge</td>
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<tr>
<td>3</td>
<td>Extra time enabled students with physical disabilities to complete examination tasks</td>
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<tr>
<td>4</td>
<td>Examinations are tiring tasks</td>
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</table>

Q4. What challenges do you face when these assessment methods are used with regards to academic performance for students with physical disabilities?

Q5. In your view how these challenges can be overcome?

In your opinion, what are the recommendations to promote conducive learning environment and effective academic participation for students with physical disabilities?

Thank you for your time and cooperation.
INTERVIEW SCHEDULE FOR THE LIBRARY STAFF/ TUK-TUKS
DRIVER/HOUSEKEEPER

Guidelines

The purpose of this study is to **examine how the learning environment influences on academic participation for the students with physical disabilities at Kenyatta and JKTAT Universities.** Kindly, you are assured that in this study all responses are good and valuable….Do not leave any question(s) unanswered. Please you are asked to cooperate and ask/inquire from the researcher about any issue(s) which may not be clear…

**WELCOME!!**

1. What are sources of academic information available for learners with physical disabilities? (Probe type of information, the frequency the information can be accessed and accessibility of the information etc.)

2. How useful are the academic information available to learners with physical disability? (Probe about usefulness in terms of facilities and equipment, enabling them to write quality academic term papers, academic achievement etc.)

3. What are challenges regarding access to academic information for students with physical disabilities? In your view how can they be overcome?

4. What accommodation services do you offer students with physical disabilities?

5. How effective are the services to meet the needs of student with physical disabilities? (Probe about usefulness of accommodation services with regards to academic success, challenges they face in offering the services, suggestions how to solve them etc.)

6. What is the transport services provided to students with disabilities?

7. How effective is the services to students with physical disabilities? (Probe about challenges they face in offering transport services, suggestions on how to solve them, how will it affect class attendance of learners etc.)

*Thank you for your time and cooperation.*
## OBSERVATION CHECKLIST

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<th>Available and relevant</th>
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<td>Ramps</td>
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