# Responding to Challenges of Physical Education in Inclusive Classes in Kenya

A descriptive case study in an inclusive school

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ABSTRACT

The purpose of this study was to explore the inclusion practices used by teachers to facilitate participation of learners with physical disabilities in inclusive physical education lessons, and also find out the impact of working with a multi-media DVD material entitled "Teachers for All" in the teacher's inclusion practices.

A descriptive case study design was used and involved three teachers as the cases in this study. Two methods, interview and observation were used in data collection. Data was collected using semi-structured interview guide and observation checklist guide. The interviews and the observations were audio and video-recorded respectively.

In addition, the observation involved an intervention program, where a multi-media DVD material entitled "Teachers for All" was used. The material comprises of different subject lessons taught in various inclusive classes. The material entails including learners with various types of disabilities in inclusive classroom settings. These lessons are made into subject sequences. Study utilized the physical education sequence.

The study lasted for 11 weeks and each teacher was interviewed once which took place in the 1st week of the study. However, observation involved each teacher being observed thrice at different scheduled intervals spread across the 11 weeks of the study period.

The school and the teachers were purposively selected. Data was analyzed in terms of categories and sub-categories. From the data analysis, the teacher's roles in the physical education lessons emerged as major theme. Under this theme, sub-categories such as, guided participation, task analysis, facilitated participation, peer support and organization of the learning environment emerged as pertinent issues.

Findings from this study revealed that teachers used various techniques in facilitating participation of learners with physical disabilities in physical education. There was a clear difference on how the teachers facilitated participation of learners with physical disabilities in physical education lessons before and the intervention program. This finding could highlight the need to examine effective teaching techniques that may foster inclusion in physical education lessons in inclusive classes.

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# 1: Background and statement of the problem

## 1.1 Background

Inclusion is expanding rapidly across many sectors in Kenya. According to several sources (Rouse & Kang.ethe, 2003), it has picked-up dramatically. In less than a decade, many schools in Kenya have implemented some form of inclusion. This increase is spurred by the changing attitudes, introduction of Free Primary Education (FPE) in 2003, and the heightened awareness campaign on the plight of persons with disabilities.

Previously, it was common for learners with disabilities, especially intellectual disabilities or physical disabilities, to be educated in special schools or segregated institutions. However, inspired by the desire to meet Education For All (EFA) and the Millennium Development Goals (MDGs) the Government of Kenya has enhanced the move toward making all learning institutions more inclusive. This has resulted in an unprecedented influx of learners in all schools. Furthermore, special schools particularly for learners with physical disabilities have opened-up to integration of learners without disabilities. This has posed challenges in teaching methodologies as well as facilities in these schools.

Physical education teachers in these schools are required to include all learners in their physical education lessons. However, a physical education lesson for an inclusive class presents a teacher with a range of issues beyond the context of an ordinary or a special classroom setting. This includes the physical nature of the activities, the use of specialized facilities and equipment and the dynamics involved in grouping and organizing learners within physical activities. The matter is quite complicated when dealing with learners with physical disabilities, whose wide range of disabilities requires the teacher.s expertise and knowledge in instructional techniques. Such issues are more exacerbated by the physical diversity of disabilities among the learners such that more often than not, each category of physical disability may require an individualized adaptation (Bailey & Robertson, 2000). As such, the physical education teachers are fundamental to any meaningful physical education lesson for an inclusive class. Given that text books are rarely used in physical education, effective teachers should be instrumental in selecting, organizing and programming physical

education lessons; sequencing developmentally appropriate content, communicating that
content effectively and eliciting the support of administrators for physical education (Housner
& French, 1994).

## 1.2 Research problem

By virtue of the increasing number of learners with and without physical disabilities in the
inclusive schools, teachers are likely to find it challenging to successfully cater for individual
needs in physical education lessons. Research shows that specific teaching techniques,
environments, modifications, and/ or appropriate practices that are being used to promote
inclusion of all learners in physical education have not been evaluated. Most of the research
over the past 20 years has been largely descriptive and theoretical (Vogler, Koranda, &
Romance, 2000). As a result, little is known about knowledge, skills, and experience needed
to become an effective physical education teacher in schools that now contain learners with
diverse physical disabilities in physical education classes (Vogler, 2003).

In Kenya, various studies have found that many studies in the field of special needs education
focused on teachers. attitudes among other issues. Yet, none focused specifically on inclusion
for learners with disabilities in physical education. As such, this gap triggered the need of
carry out of this study.

## 1.3 Research question

The following research question was used to help establish the research problem: What
inclusion practices do teachers use in facilitating participation of learners with physical
disabilities in physical education lessons, and what is the impact of working with the
“Teachers for All” DVD material on the teachers’ inclusion practices?

Specifically, the following sub-questions were addressed:

1. What teaching skills are used by teachers to facilitate the participation of learners with
physical disabilities in a physical education lesson?
2. What essential environmental factors are used to foster participation of learners with
physical disabilities in the physical education lessons?

3. How do the teachers facilitate interaction between learners with and without physical disabilities during the physical education lessons?
4. What aspects from the “Teachers for All” DVD material are apparent in the physical education lessons after the intervention program?
5. How are the aspects from the “Teachers for All” DVD material manifested in the physical education lessons after the intervention program?
6. In which ways do the teacher.s teaching techniques differ before and after working with the “Teachers for All” DVD material?

## 1.4 Purpose of the study

Learners with physical disabilities are a heterogeneous group. Some may need to use assistive devices to augment missing body parts, yet others could have negligible functional limitations. Considering such diversity in an inclusive class and the amount of body movements involved in physical education activities, it was therefore imperative to find out the techniques used by the teachers in conducting physical education for the learners with physical disabilities. As such, the purpose of this study was to explore the inclusion practices used by physical education teachers in facilitating participation of learners with physical disabilities in physical education activities in inclusive classes. It also sought to find out the impact of working with a multi-media DVD material entitled the “Teachers for All” DVD on the teacher.s teaching techniques.

### The DVD material

The multi-media DVD material entitled the “Teacher.s for All” is a program based on inclusive education, its theme being “responding to challenges in inclusive classrooms” which focuses on inclusive environments including classroom situations. It was developed in Kenya and Uganda in inclusive primary schools. It involves various lessons from different subjects and entails inclusion of learners with various types of disabilities within inclusive environments including classroom situation. These lessons were developed inform of sequences and composed into a disc which could be played from any disc player including computers and laptops. Among these sequences was a physical education sequence. This sequence focused on including learners with physical disabilities difficulties in physical

education in an inclusive class and as such was selected for use as the intervention program in this study.

## 1.5 Significance of the study

Research indicates that regular physical education activities included in children.s school curriculum produces physical, psychological and intellectual benefits. According to Sherrill (2004) and DePauw and Doll-Tepper (2000) physical education must be supported as an integral part of comprehensive education. With the heightened inclusive classrooms in Kenya, there is need to improve on ways of including learners with physical disabilities in the physical education programs to leap these benefits.

Though the information derived from this study may not be generalized in the larger education system in Kenya, it will however have practical implications relating to the inclusion of learners with physical disabilities in physical education programs. In addition, by identifying specific teaching skills and modifications that promote successful inclusion in physical education, teacher education programs can potentially address these issues in the pre-service teachers training courses. Further, it will provide groundwork for more research studies by other researchers in the field of teacher education for special needs education. Ultimately, the end result may be a better physical education experience for learners with physical disabilities in inclusive physical education classes.

## 1.6 Justification of the study

It is evident from several studies that with the growing number of students with and without physical disabilities in general education, more and more physical education teachers are faced with the reality of teaching these students together (Meegan & MacPhail, 2006; Kudlacek, Valkova, Sherrill, Myers, & French, 2002; Lienert, Sherrill, & Myers, 2001). Further, according to Sherrill (2004) the practice of assigning almost everyone to physical education and assuming that the teacher will take initiative in adapting instruction is widespread.

According to Karugu (2000), special schools in Kenya, should become agents of change by admitting non-disabled students to enhance peer tutoring and social relations. Furtherance to government policy of making all learning institutions all inclusive, special schools integrated

learners without disabilities therefore increasing the enrolments in these schools. Moreover, the advent of free primary education saw an upsurge in enrolment of learners with and without disabilities. However, this upsurge was not matched with equal resource provision thus further complicating the situation as neither the teachers nor the resources had been adequately prepared for the new development. Hitherto, the training of special needs education teachers has not had significant impact in terms of methodology used for teaching physical education to learners with physical disabilities in inclusive physical education lessons. As such, a need evolved to establish the efficacy of inclusion of learners with physical disabilities in physical education lessons in inclusive settings.

## 1.7 Scope and limitation of the study

This study was conducted in a special school for learners with physical disabilities which has however integrated learner without disabilities, thus becoming an inclusive school. Three teachers were involved and the focus was on how they conducted physical education for their inclusive classes. Specifically, exploring on how the teachers were facilitating participation of learners with physical disabilities in physical education lessons in inclusive classes, and finding out the impact of working with the "Teachers for All "DVD material on the teacher.s inclusion practices. It was therefore imperative to study the teachers within their natural settings, which in this situation was the physical education lesson. As such, qualitative research approach using a multiple case study design which allowed for such a study was used.

### Assumptions

1. The teachers as the cases in this study were to answer questions honestly and completely with the assurance of confidentiality.
2. The teachers. teaching episodes accurately represented their optimal teaching practices.

### Limitation of the study

1. Since self-report measures were being used, teachers may have responded in socially accepted perceived ways.

2. Due to the nature of the case study methodology, the findings could be limited in terms of transferability (external validity).

## 1.8 Aspects of the study

### 1.8.1 Inclusion

In education inclusion stands for an educational system that encompasses a wide diversity of pupils and that differentiates education in response to this diversity. Mittler (2000), describes inclusion, as a philosophy paradigm that calls for the placement of students with diverse abilities and disabilities (ranging from mild to severe) into general education classes with peers in their neighborhood schools.

### 1.8.2 Inclusive education

Booth (1996) described inclusive education as a process of addressing and responding to the diversity of needs of all learners through increasing participation in learning, cultures and communities, and reducing exclusion within and from education. Similarly, UNESCO (2003) defined inclusion as a developmental approach that „…seeks to address the learning needs of all children, youth and adults with a specific focus on those who are vulnerable to marginalization and exclusion. (p 4).

Many international declarations have legitimated the idea of inclusion. The principles of inclusive education for example were adopted at the Salamanca World Conference on Special Needs Education (UNESCO, 1994) and were restated at the Dakar World Education Forum (2000). It reads: - Inclusive education means that schools should accommodate all children regardless of their physical, intellectual, social, emotional, linguistic or other conditions. This should include disabled and gifted children, street and working children, children from remote or nomadic populations, children from linguistic, ethnic or cultural minorities and children from other disadvantaged or marginalized areas or groups (UNESCO, 2003)

### 1.8.3 Integration

Mittler (2000) states that integration involves the learner adapting to the needs of the school, there is no change in the school to accommodate the greater diversity of learners. Integration

is about making the ordinary school special by putting in place very good school practices, teachers and equipment into regular settings. For the purposes of this study this term was used in reference to admitting learners without disabilities in the special schools.

### 1.8.4 Physical disability

Physical impairment refers to a broad range of disabilities which include orthopedic, neuromuscular, cardiovascular and pulmonary disorders. Learners with severe-profound disabilities may need assistive devices such as wheelchairs, crutches, canes, and artificial limbs to obtain mobility (Hallahan & Kauffman, 2006; Meyen & Skrtic, 1995; DePauw, 1997). In this study, this term was used in reference to learners with physical disabilities including learners with health impairments. Further, terms such as severe, moderate and mild physical disabilities were used in the study. The term severe physical disability was used in reference to learners who were lower limb paralyzed thus wheel chair bound. Moderate physical disability was used in reference to those whose lower limb functional limitation were affected to such an extent that they required to use mobility devices such as crutches or walking frames. While mild physical disability was used in reference to learners whose functional limitation was slightly affected and as such. Therefore, they did not require use of any mobility device and could perform most of the physical activities without adaptation.

### 1.8.5 Physical education

Refers to the development of physical and motor fitness; fundamental motor skills and patterns; skills in aquatics, dance, and individual and group games and sport including intramural and lifetime sports (Auxter, Pyfer, & Huetting, 2005). In the present study, this term was used in reference to the academic subject as provided for in the Kenya primary school curriculum alongside other subjects.

### 1.8.6 Physical activity

This is any body movement that works one.s muscles and uses more energy than one uses when resting. Such activities may include, walking, running, dancing, swimming, yoga, and gardening. For the purpose of this study, this term was used in reference to what the teachers had planned to be performed by the learners during the physical education lessons.

### 1.8.7 The multi-media “Teachers for All” DVD material

This is a Disc based program developed from different inclusive settings including classrooms. It.s composed of different subjects in form of sequences and entails including learners with different disabilities in various subjects. In this study, this material was used as an intervention program and utilized the physical education sequence. This was among the sequences that composed this material.

### 1.8.8 Impact

This term is used to refer to the influence, or effect of an undertaking or exercise. In this study, this term was used in reference to any outstanding changes in the teacher.s inclusion practices after working with the DVD material. The changes referred to here are as typified in the “Teachers for All”DVD material.

### 1.8.9 Task analysis

In education the term task analysis could be as a model that is applied to classroom tasks to discover which curriculum components are well matched to the capabilities of students with learning disabilities and which task modification might be necessary. It discovers which tasks a learner hasn't mastered, and the information processing demands of tasks that are easy or problematic. For the purposes of this study, this term was in reference to any technique the teachers used identifying learners experiencing difficulties in performing physical activities and the subsequent intervention measures taken by the teachers.

### 1.8.10 Location

Location is a position or point in physical space that something occupies on the Earth's surface. For the purposes of this study, this term was used in reference to the four positions where the group activities were conducted during the physical education lessons.

## 1.9 The structure of the thesis

This study has been divided into five chapters.

Chapter One: presents the background, research problem, the purpose, significance, justification, scope and limitation of this study. The same chapter attempts to discuss some concepts used in this study.

Chapter Two: this chapter presents clarification of concepts, positive aspects of inclusion and physical education. Further, attempts have been made to discuss the factors that may affect teaching physical education in an inclusive setting. In addition, the conceptual framework for the analysis of this study has been discussed.

Chapter Three: contains the methodology for which the methods used in this study are presented, research design, intervention program, research instruments, procedures in data collection, validity, reliability, and ethical considerations of the study are also presented.

Chapter Four: this chapter focuses on the presentation and data analysis of the result from the perspective of the cases. General feelings arising from the analysis of the results are given and the emerging subcategories from the themes are also presented.

Chapter Five: discusses research findings, makes conclusions, and recommendations.

# 2 Literature review and theoretical framework

## 2.1 Introduction

This study explored the inclusion practices applied by teachers in inclusive physical education programs. The aim was to explore the teaching strategies used by the teachers in facilitating participation of learners with physical disabilities in inclusive physical education lessons. It also sought to find out the impact of working with the “Teachers for All” DVD material on the teacher.s inclusion practices. This chapter deals with discussions of key concepts used in this study, an overview of previous studies related to this study, and the theoretical framework on which this study was based.

## 2.2 Clarification of concepts

Various studies have been done in relevance to inclusion of learners with special needs in the regular classrooms in different parts of the world. The studies referred here deal with importance of inclusion and benefits of physical education to learners with physical disabilities, and also factors that could influence the teaching of physical education in inclusive settings. Some of the studies have used the terms integration or mainstreaming and others inclusion. In studies referred to in this study they have been used synonymously as the terms refer to providing education to learners with disabilities in a least-restrictive environment.

### 2.2.1 Mainstreaming

Mainstreaming in the context of education is a term that refers to the practice of educating students with special needs in regular classes during specific time periods based on their skills. This means regular education classes are combined with special education classes. Schools that practice mainstreaming believe that students with special needs who cannot function in a regular classroom to a certain extent "belong" to the special education environment. Proponents of mainstreaming generally assume that the student must “earn” his

or her opportunity to be placed in regular classes by demonstrating an ability to "keep-up" with the work assigned by the regular classroom teacher.

### 2.2.2 Inclusion

A single definition of the term inclusion within the education realm is yet to be agreed upon. However, UNESCO (2003) sees it as a process of addressing and responding to the diversity of needs of all learners through increasing participation in learning, cultures and communities, and reducing exclusion within and from education. It involves changes and modification in content, approaches, structures and strategies with common vision which covers all children of the appropriate age range and a conviction that it is the responsibility of the regular system to educate all children.

## 2.3 Inclusive education

Crawford, Roach, LoVette, & Salend (as cited in Horne and Timmons, 2007) refers inclusive education as serving learners with full range of abilities and disabilities in the general education classroom with appropriate in-class support. This is in line with the Salamanca Statement and Framework for Action (1994) which asserts that: "regular schools with inclusive orientation are the most effective means combating discrimination, creating welcoming communities, building an inclusive society and achieving education for all." (Salamanca Statement, Art. 2).

Research has shown that inclusive education results in improved social development and academic outcomes for all learners. It leads to the development of social skills and better social interactions because learners are exposed to real environment in which they have to interact with other learners each one having unique characteristics, interest, and abilities. The non-disabled peers are expected to adopt positive attitudes and actions towards learners with disabilities as a result of studying together in an inclusive setting (Baker, Wang, & Walberg, 1994). Thus, inclusive education lays foundation to an inclusive society accepting, respecting and celebrating diversity.

Perhaps, the UN Special Rapporteur Dr Bengt Lindqvist (1994) sums it all, "all children and young people of the world, with their individual strengths and weaknesses, with their hopes and expectations, have the right to education. It is not our education systems that have the

right to a certain type of child. Rather, it is the school system of a country that must be adjusted to meet the needs of all its children".

### 2.3.1 Positive aspects of inclusion

Researchers have found several positive aspects of inclusion. One such finding is that inclusion allows students to interact in diverse environments (Goodwin & Watkinson, 2000; Voltz, Brazil, & Ford, 2001). One of the most positive outcomes from this type of interaction is that learners with physical disabilities learn age-appropriate social skills by imitating learners without disabilities in the environments where they are needed (Hodge, Murata, Block, & Lieberman, 2003). Under the same vein, participating in physical education activities provides a diverse stimulating environment in which to grow and learn by creating a sense of belonging to the diverse human family. In addition, physical education for inclusive settings provides affirmations of individuality, and provides opportunities to learners with physical disabilities to compete and be educated with the same-age peers. Research by Baker et al. (1994) concluded that "special-needs students educated in inclusive classes do better academically and socially than comparable students in non-inclusive settings."

On the other hand, students without disabilities experience a shift to more positive attitudes about students with disabilities (Slininger, Sherrill, & Jankowski, 2000; Vogler et al., 2000). The positive aspects of these interactions may be explained through their positive social cognition, greater understanding and acceptance of learners with disabilities and their diversity as a whole, as a result of experiencing inclusive programming. Learners without disabilities also experience increased self-esteem and improved self-concept. Additionally, physical education programs are believed to present opportunities for collaborative learning through pairing and cooperative learning in their group activities. Research has found out that inclusion was not detrimental to students without disabilities (Hollowood, Salisbury, Rainforth, & Palombaro, 1995).

## 2.4 Physical education

Research supports the importance of movement in educating both mind and body. Physical education contributes directly to development of learner.s physical competence, fitness, confidence and skills in a range of activities, such as dance, games, gymnastics, swimming

and athletics, outdoor and adventurous activities (Doll-Tepper, & DePauw, 1996; Bucher, 2008). In working as individuals, in pairs, groups and in teams during physical education lessons, learners can learn the value of healthy and active lifestyles by discovering what they like to do and what their aptitudes are at school.

In the early school years, active play may be positively related to motor abilities and cognitive development. As children grow older and enter adolescence, physical activity may enhance the development of a positive self-concept as well as ability to pursue intellectual, social and emotional challenges. Throughout the school years, quality physical education can promote social, cooperative and problem solving competences. Quality physical education programs are essential in developing motor skill, physical fitness and understanding of concepts that foster lifelong healthy lifestyles (Sherrill, 2004).

### 2.4.1 Positive aspects of physical education

Scientific evidence has shown that participation in regular physical activities provides people with all ages with significant physical, social, and mental health benefits and well being throughout their lifespan (Biddle, Fox, & Boutcher, 2000). Studies have shown that people who are physically active can live longer than those who are sedentary. Besides, those who participate in regular physical activity may have advantage in the ability to perform activities of daily living and enjoy aspects of life (Schenker, Coster, & Parush, 2005).

The importance of participating in physical activity in reducing morbidity and mortality from chronic disease and conditions has been well documented (Yore, Ham, Ainsworth, Kruger, Reis, Kohl, & Macera, 2007). According to Auxter et al. (2005) physical activity is a predictor of subsequent disability in midlife and older populations. Childhood and adolescence are ideal periods for cultivating regular physical activity to reap health benefits across the lifespan (Eriksson, Welander, & Granlund, 2007). In addition to preventing chronic diseases of lifestyle, greater levels of physical activity can lessen complications among people with chronic diseases of lifestyle (Hu, Willet, Stampfer, Colditz, & Manson, 2004). Research shows that participation in physical activity can improve cardiovascular fitness, prevent or delay the development of high blood pressure and reduce symptoms of chronic depressions (Dielh, Brewer, Van Raatle, Shaw, Fiero & Sorenson 2001; Center for Diseases Control and Prevention, 2000). Moreover, participation in physical activity increases exercise capacity and plays a big role in both primary and secondary prevention of cardiovascular disorders

(Schenker et al., 2006; Schwager, & Labate, 1993). A study by Barrows & Tamblyn (1980), reported that physical activity reduces the risk of cardiovascular diseases as well as some cancers and diabetes. Researchers have also stated that physical activity lowers risk of developing colon cancer (Hu et al., 2004).

## 2.5 Factors that may influence a physical education lesson

### Teacher's roles in the physical education lesson

Teachers as implementers play a crucial role in various spheres of education. Their role in the successful implementation of inclusive education is of paramount importance. With the diversity of disabilities among the learners, their needs could demands more than the teacher.s role of lecturing. Thus, in an inclusive physical education lesson, a teacher could play several different roles key among them are being a facilitator, helper, and mentor and resource provider. The teacher.s role is not to inform the students but to encourage and facilitate them to learn for themselves using the problem as a focus for the learning (Barrows, & Tamblyn, 1980; Davis, & Harden, 1999). In view of this, to successfully cater for the diversity of learners with physical disabilities within an inclusive physical education lesson, the teacher has to play different roles in the learning process.

### 2.5.1 Organization of the learning environment

Research has shown that various factors affect the successful implementation of the inclusive education. Key among them is the learning environment. Norrell (as cited in Horne & Timmons 2007), observes that, an inclusive classroom requires prior and on-going training for teachers, additional planning time, limitation of the number of special educational needs students to 3 per class, provision of teacher aids, additional monetary resources, and support from the principals and other staff.

Learners in a supportive environment may have high levels of self-efficacy and self motivation. Goodwin and Watkinson (2000) emphasizes that it is important to create learning environment that are welcoming to the child. It is therefore the responsibility of the teacher to create an active learning environment which influences participation of learners in physical

education activities. Physical education activities require adaptation of equipment as well as adjustments of rules and regulations of activities, games and sports. The way the teacher caters for individual learner.s needs translates to their level of participation in these activities.

The environment is also seen as a tool used by the teacher to teach. With adequate provision, the learners are more involved and they may develop attention span and independence from the teacher. The environment can also play the role of the teacher. Teachers can easily arrange and position learning materials so that they play an active role in the teaching-learning process, even in the absence of the teacher. Organization influences the movement and physical behavior of learners in the environment.

### 2.5.2 Facilitated interaction

Teacher-learner interaction is influenced strongly by the teaching perspective embraced by the teacher. Many of us can think back to a teacher who was exceptionally influential in our school experience or even in our life.s direction. Chances are that this teacher.s exceptionality lies with how he or she interacted with students. The way a teacher and student interact is a critical factor in determining student.s educational outcomes. Research by Wang et al. (1990) identified student-teacher social interaction as a key factor in influencing students learning. Students identify relationship with teachers as being among the most important parts of their school experience (Alerby, 2003). This could probably explain why interaction between the teacher and learners with physical disabilities in physical education is fundamental. This is because in physical education activities, learners with physical disabilities may require teachers close proximity and help in performing the activities more than in any other academic subject, without which cannot be achieved. Besides this, how a teacher interacts with learners with physical disabilities translates into products important in inclusive education.

### 2.5.3 Guided participation

Several studies have revealed that students with physical disabilities often have difficulties with participation in school activities (Eriksson et al., 2007; Hemmingsson, & Borell, 2000; Mancini, Coster, Trombly, & Heeren, 2001; Pivik, McComas, & LaFlamme, 2002; Prellwitz & Tamm, 2000; Schenker, Coster, & Parush, 2005). It is often difficult, however, to establish

the extent to which the challenges that learners encounter are related to individual factors or
the inability of the teacher to accommodate learners' needs.

Nonetheless, one thing is clear, these learners needs some form of assistance to enable them
achieve their physical education goals. In light of this, participation in physical education for
learners with physical disabilities calls for the teacher.s individual learner.s attention because
physical education entails body movements; yet, mobility of these learners is often affected
by their conditions. The assistance can be in form of environmental adaptations, teaching
strategies and provision of individual learner.s attention by the teachers or more capable peers
in helping them to achieve participation in the physical education activities.

2.5.4 Task analysis

With teachers close proximity, occasions for sustained observations and conversations related
to teaching and learning increases as learners are kept engaged in the lesson more of the time.
In this way, teachers are able to maneuver the learning that is happening at the appropriate
pace for learners with physical disabilities thus, enable to acquire new knowledge adequately.
In an inclusive physical education, close proximity helps a teacher to assess an individual
learner.s level of performance hence adjust the activities appropriately.

The objective of effective task analysis in physical education program as to; maintain a safe
environment, offer physical help when needed, keep students on-task, and provide students
with supportive and corrective interactions(Bucher, 2008; DePauw, 2000). To ensure that
every student can be observed, and to avoid working with only a handful of students, Bucher
(2008) suggest that, teachers should move continually throughout the area, staying around the
perimeter of the space so that the entire class is in view. DePauw (2000) refers to this practice
as keeping your "back to the wall." During physical education, while moving around the
learning area teachers should maintain constant visual contact with the learners and be
accessible to all learners. Furthermore, they should identify activities of highest risk to
learners with physical disabilities and supervise them when performing these activities
without losing contact with the rest of the class.

2.5.5 Peer support

Research shows that peer support creates a calm environment in which children can learn, play, develop and grow and where bullying is significantly reduced (Naylor & Cowie, 1999). Peer support encourages both those being helped and the "helpers" to develop personal skills, such as communication skills, improve self-esteem; learning to negotiate with one another. It gives children the opportunity to experience different roles and responsibilities, and to learn leadership skills and team working (Davis, 2000).

Peer support can be used to promote inclusion, for example through promoting interaction between learners with and without physical disabilities. Often, when handling inclusive physical education lessons, teachers find it difficult to provide much needed individual attention for learners with physical disabilities. However, using peers to help learners can be an effective method for including learners with physical disabilities in physical education lessons. Peer tutoring is one in which an older and/or skilled student would be the tutor the entire time while the other less skilled student or student with a disability is the tutee the entire time (Dwyer, Sallis, Blizzard, Lazarus, & Dean, 2001; DePauw, & Sherrill, 1994).

2.6 Teacher training

Some learners with physical disabilities use mechanical devices that replace or augment vital body organs. Many of these learners need assistance with personal care such as using the bathroom, and eating. Generally, these learners have to cope with the challenges of chronic illness, pain and anxiety; have to comply with medical regime, and may have to deal with co-occurring disabilities (Best, & Heller, 2005).

Therefore, teachers who work with these students should possess special knowledge and skills: they must be well versed in a range of instructional strategies, physical management, environmental adaptations and assistive technology. They need to be able and willing to collaborate with variety of personnel; must be able to modify curricula to accommodate the characteristics of these learners; apply knowledge of disability condition to educational outcomes and provide resources for family and service providers (Best, & Heller, 2005; Bigge, Best, & Heller, 2001).

Research supports the effectiveness of teacher-child interaction in bringing about desired results and underscores the importance in preventing or ameliorating Childs behavior problems (Lyon, Budd, & Gershenson, 2009).

Therefore, teacher training in special needs education is of paramount importance in instilling skills and knowledge in the teachers to enable them establish the learners needs, and diversify their teaching techniques in order to accommodate these learners. The Salamanca Statement (1994) clearly underscores the importance of teacher training in enhancing teachers. positive attitude towards persons with disability and their acceptance of everybody.s ability to learn.
In the study carried by Avramidis, Bayliss and Burden (2000) found that teachers who had received training of high quality appeared to feel more competent in their teaching skills and found concept of inclusion easy to deal with. In addition, Opdal, Wormnæs, and Habayeb ( 2000) in their study on teacher. opinion about inclusion observed that teachers who had experience with students with mobility and other physical disabilities, were more supportive of the idea of including learners with the same disabilities.

## 2.7 Theoretical framework

The interpretation of inclusion practices and impact of the “Teachers for All” DVD material discussed within this study arose out of the analysis rather than being the intentional focus of the research or initial interpretation. In applying this perspective, the Vygotsky.s social development theory became a pertinent theoretical framework for analysis.

### 2.7.1 Zone of proximal development

Vygotsky based his paradigm of learning on collaboration stating that work with a more cognizant person is pertinent to development: “cognitive processes are the result of social and cultural interactions.” (Vygotsky, 1978: p.84) Vygotsky famously observed that:

> “Every function in the child.s development appears twice: first, on the social level, and later, on the individual level; first, between people (interpsychological), and then inside the child (intrapsychological). This applies equally to voluntary attention, to logical memory, and to the formation of concepts. All the higher functions originate as actual relations between human individuals.” (ibid: p.57).

Thus, according to Vygotsky, the aetiology of learning is social interaction: a concept is first presented to a child socially (interpsychologically) either by parent, peer, or teacher, later to appear inside the child through the process of internalization. Vygotsky focused on the

connections between people and the socio-cultural context in which they act and interact in
shared experiences (Crawford, 1996).

As such, it can be inferred from Vygotsky.s work that the key to his theory of development is
the difference between mature and maturing cognitive tools. It is from this notion that he
developed the term zone of proximal development (ZPD). Vygotsky defined this zone as "the
distance between the actual developmental level as determined by independent problem
solving and the level of potential development as determined through problem-solving under
adult guidance or in collaboration with more capable peers" (Vygotsky, 1978: p. 86). In an
inclusive physical education, ZPD could be used in reference to the range of physical
activities that are too difficult for a learner with physical disability to master alone but that
can be learned with guidance and assistance of the teacher or more-skilled peer. The lower
limit of ZPD is the level of skill reached by the learner performing the activity independently.
The upper limit is the level of additional responsibility the learner can achieve with the
assistance of the teacher or his peers.

As such, Vygotsky.s ideas provide strong theoretical support for the role of physical
education teacher as an active participant in the learning and development of the young
learner. Working within the zone, teachers and more competent peers create opportunities for
learners with physical disabilities to perform at levels they cannot achieve on their own.

Teaching within the zone of proximal development entails the teacher working more
prominently as a co-participant in the learner.s construction of knowledge necessary in
performing the physical activities. It should be noted that, teaching-learning in physical
education is a collaborative endeavor in which each participant makes a vital contribution.
Over the course of a teaching session, the teacher is expected to adjust the amount of
guidance to fit the learner.s current performance and gradually withdraws his control living
the learner to accomplish performing the activity on his or her own thus gaining mastery of
the skill. In addition, the game activity in a physical education lesson provides opportunities
for a play which is fundamental in development. In fact, Vygotsky (1978) noted that "play
creates the zone of proximal development of a child. In play a child always behaves beyond
his/her average age, above his/her daily behavior; in play it is as though he/she were a head
taller…"(p.102).

Inherent in ZPD instruction is Rogoff.s (1990) ideas elaborated through her conceptualization of apprenticeship, guided participation and participatory appropriation. In optimal circumstances children live in ecological contexts that actively support their apprenticeship role which facilitates their physical, cognitive and social-emotional development. Teacher.s interactions with the learners with physical disabilities in physical education lessons can provide guidance, support, challenge, and the impetus to learn. Thus the social construction of knowledge (i.e., learning) requires understanding by teachers about guided participation and how children.s skills and conceptual knowledge can be enhanced through peer interactions and planned activities provided by the teachers.

Teachers can enhance a learner.s participation in physical education activities by enriching the learning environment through provision of resources that support and challenge a learner.s participation. When the environment enables frequent participation in shared activities in which learners take responsibility for directing those activities, learners become skilful in their own right to marshal and build their own scaffolding to enhance their learning (Claxton & Carr, 2004). Full participation is achieved when learners with physical disabilities receive sufficient support to make active participation with typically developing learners. Thus, it is important to examine the degree of participation that occurs within inclusive physical education programs and the conditions under which interactions are made.

## 2.8 Summary

This chapter has dwelt with concepts that were used in this study, factors that could influence teaching of physical education lessons, training of the teachers, and theoretical framework on which the analysis of this study was based upon. As has been established in the foregoing discussion, specific direction in physical education activities could be found in Vygotsky.s explanation that development of individual children.s higher psychological processes occurs through collective activity(1931 p.192), meaning the collaborative engagement of learners with differing physical abilities in carrying out different activities towards the achievement of participation, with the teacher providing direction as necessary in indentifying individual learner.s needs and the goal and technique of collaboration.

# 3 : Methodology

## Introduction

This chapter presents the research design and procedure for data collection. The following are considered; methods of data collection, cases, instrumentation, data analysis and ethical issues.

## 3.1 Research design

The aim of this study was to explore the inclusion practices used by teachers to facilitate participation of learners with physical disabilities in physical lessons in inclusive classes and also to find out the impact of the “Teachers for All” DVD material on the teacher.s inclusion practices. As such, it was imperative to study the phenomenon within its natural settings, which in this situation was physical education lesson. Therefore, the teachers. were investigated while conducting practical physical education lessons with their classes. This was in addition to interviews that were carried prior to the practical lessons. The purpose was to have detailed information that would help in understanding the inclusion practices used by the teachers to facilitate inclusion of learners with physical disabilities in the physical education activities.

In light of this, a qualitative research approach using a descriptive multiple case study design was used in this study. A case study design is the in-depth study of instances of phenomenon in its natural context and from the perspective of the participants involved in the phenomenon (Gall, Gall, & Borg, 2007; Robson, 2002; Yin, 2003). In this study, the phenomenon under investigation was the inclusion practices which was studied in its natural settings of practical physical education lessons. The cases in this study were three teachers.

Specifically, the focus was on the following instances of the phenomenon under study, how the teachers organized the learning environment, how the teachers interacted with learners with physical disabilities, how they fostered interaction between learners with disabilities and learners without disabilities, how they facilitated peer support, and how they facilitated participation of learners with physical disabilities. These teachers were investigated while conducting practical physical education lessons. Therefore the phenomenon was studied from the perspective of these teachers.

In addition, qualitative research approach was used in this study since little was known about the phenomenon under study. One of the uses of qualitative research is to investigate the phenomena of which very little is known (Miles & Huberman, 1994).

Location of the study

Administratively, the republic of Kenya is comprised of eight provinces. Among them is Central province where both the pilot and the main studies were conducted. The studies were conducted in two separate though similar Special schools for learners with and without physical disabilities. Though the schools are called special schools, both have integrated learners without disabilities hence becoming inclusive schools. For the purposes of this study, the pilot study school is referred was Mazuri, while the main study school as Furaha.

Important information

For the purposes of securing confidentiality, the names of the school, the teachers and the learners used in this study were synonyms.

3.2 Methods of data collection

Interview and observation were used as the main methods of data collection. The two methods were especially important to this study as they complimented each other in production of information. This resulted in a detailed data that helped to describe the phenomenon under study from different perspectives. Using multiple methods of data collection about a phenomenon could enhance the validity of a case study finding (Gall, Gall & Borg, 2003; Robson, 2002; Mertens, & McLaughlin 2004). Most of the data obtained in this study was derived from interviews and direct observation.

3.2.1 Interview

An interview is a conversation with the purpose of obtaining qualitative description of the real world of subjects with the respect to interpretation of the meaning behind a participant.s experience (Kvale, 1998; Creswell, 1998). Interview was chosen as one of the main methods of collecting data in this study. A semi-structured interview guide was used in interviewing the teachers through face to face method. The advantage of using interview in this study was its adaptability in adjusting the questions in the process of the interviewing. Thereby enabling,

further probe, clarification of concepts, and follow ups of specific response from the teachers.
As such, it was useful in gaining insight and context into the topic, while allowing the
respondent to describe what was important to him or her. One of the major advantages of
interview is it probes deeply into the respondents answers to obtain opinions and feelings of
the informant (Gall et al., 2003; Yin, 2003).

3.2.2 Observation

Observation was the other main method utilized for data collection in this study. The teachers
were observed and video-recorded within their natural physical education environment as
they conducted physical education lessons for their classes. The value of this method in this
study was that it permitted for a direct observation of what the teachers did, encountered and
said as they facilitated participation of learners with physical disabilities in inclusive physical
education lessons, thus firsthand experience with the phenomenon under study. Observation
allows the researcher to formulate their own version of what is occurring independent of the
participants (Gall et al., 2007; Robson, 2002). Specifically, the focus was on how the
teachers; interacted with the learners with physical disabilities, facilitated peer support,
analyzed the tasks to suit learners with physical disabilities, adapted equipment, rules and
regulations of the game and organized the learners and the learning environment.

3.3 Research instruments

Most of the data obtained in this study was derived from interviews and direct observation. In
line with this, two instruments; a semi-structured interview guide (Appendix D) and
observation guide checklist (Appendix E) were developed and used in this study. Both the
interview questions and the observation check list were developed based on the sub-
phenomena that emanated from the phenomenon. In addition, the interviews and the
observations were audio and video-recorded respectively.

3.4 Sampling procedure

The aim of this study was to get a deep understanding of the inclusion practices used by
teachers in facilitating participation of learners with physical disabilities in physical education
lessons and also to explore the impact of working with the “Teachers for All” DVD material

on these practices. It was therefore important to have a rich source of data. As such, the school and the cases in this study were purposefully sampled with the aim of getting resourceful source of data. The use of purposeful sampling is to get in-depth information of the phenomena under study (Gall, Gall & Borg, 2003; Patton, 2002).

3.4.1 Criteria for selecting the school

According to the Ministry of Education Science and Technology (MoEST, 2007) yearly Report, there are 17 special schools for the learners with physical and health disabilities in Kenya. Out of these, 9 are public government sponsored schools. This study was carried out in one of the 9 schools. The criterion used in selecting this school was; it has teachers trained in Special Needs Education (SNE), it has integrated learners without disabilities, it is a public school, and easily accessible in terms of transport and communication by the investigator.

Furaha School emerged as the only school that met all of the selection criteria and was subsequently selected for the main study. In addition, Mazuri School which met the first three selection criteria was used for the pilot study.

3.4.2 Criteria for selecting of teachers

Selection of teachers in this study was purposefully done. Three teachers each from classes 3, 4, and 6 who met the following selection criteria were selected; at least 2 years training in special needs education, trained in physical education and having at least a 2 year experience in teaching physical education in an inclusive class having learners with and without physical disabilities. The intention was to have teachers who would provide rich information about the phenomenon under study. In purposeful sampling the goal is usually to get cases that are likely to be “information-rich” with respect to the purpose of the study (Gall et al., 2007).

Field notes

Important information observed or heard was noted down. This was useful in this study as it assisted in getting in-depth information during the interview and observation.

The final sample

The final sample comprised of three physical education teachers with each of the teachers as
an individual case.

## 3.5 Procedures in data collection

### 3.5.1 Gaining entry

In order to gain entry in the Kenyan schools for the purposes of conducting research, it is a
mandatory according to the Government of Kenya to obtain a permit. In light of this, the
authority to collect data in this study was sought from the National Council for Science and
Technology (NCST). An introduction letter (Appendix A) from the University of Oslo and
two copies of certified research proposal were presented to the Council, who duly issued
authorization permit (Appendix B). Gall et at. (2003) note that permission must be obtained
from the relevant authorities before carrying out the research.

Once granted the permit, contact was made with the relevant district commissioners and
education officers and each was presented with the permit.s copy. Finally, contact was made
with the relevant school authorities and the teachers, and with their consent the study
eventually commenced.

### 3.5.2 Pretesting

The interview guide used in this study was pre-tested using a former colleague in the
department of special needs education in University of Oslo. This was further done using two
former colleagues in the department of special education needs from Kenyatta University. All
the three had background in physical education. This provided the investigator the
opportunity to familiarize him with the interview process. Pre-testing provides the researcher
the occasion for a formal “dress rehearsal” in which the data collection plan is used as the
final plan as faithful as possible (Gall et al., 2003; Yin, 2003).

### 3.5.3 Pilot study

A pilot study is a mini-version of the main study and should be conducted before the main
study. As such, this was conducted in Mazuri School which as earlier mentioned met three of
the four criterion procedures used for selecting the main study.s school. Creswell (2003)

observes that pilot testing helps to establish content validity of the instrument and improves the questions and format. The school was visited prior to the commencement of the actual data collection. The investigator introduced himself to the school.s head teacher who in turn introduced him to the teachers. The investigator explained the reason for the visit and the purpose of the study. Many of the teachers present expressed interest to be involved in the piloting.

The following criterion was used in selecting teachers for the pilot study. To have, at least 2 years training in special needs education, trained in physical education and at least 2years of experience in teaching physical education in inclusive physical education for learners with and without physical disabilities. Two teachers for classes 3 and 6 met the requirement and therefore participated in the piloting.

Administration of interview and observation in the pilot study

Before conducting the interviews and observation, both teachers were assured of the steps that would be taken to protect their privacy. Further, assurances were made that the results of this pilot study were only for the research purposes. With these assurances both teachers accepted and gave their consent to be audio and video recorded. Eventually, the study commenced.

Interviews

Both teachers were interviewed once, using the main study's interview guide. This was done in the school in a privately prepared room. The room was quite which was necessary for audio-recording. Specifically, the interview questions focused on how the teachers ; interacted with the learners with physical disabilities, facilitated peer support, analyzed the tasks to suit learners with physical disabilities, adapted equipment, rules and regulations of the game and organized the learners and the learning environment. Where questions were not clear or not well understood, they were repeated or rephrased. Moreover, probes such as, could you explain more? How else? “You said…is that right”? were used in getting more information from the teachers. The teachers cooperated well and willingly provided information.

Observation

Each of the teachers was also observed once as they conducted a practical physical education lesson. The observation took place in the open air football field where the teachers usually

conduct their physical education lessons and were video-recorded. The areas observed were the teaching strategies used by the teacher to include learners with physical disabilities in physical education programs. Specifically, the focus was on how the teachers ; interacted with the learners with physical disabilities, facilitated peer support, analyzed the tasks to suit learners with physical disabilities, adapted equipment, rules and regulations of the game and organized the learners and the learning environment.

Implication for the study

The piloting helped in refining the instruments used for data collection in this study. One question was established to be repeated thus deleted. A few other minor changes were done to some questions, thereby improving the reliability of the instruments; this was done so as to ensure that they yield reasonably unbiased data (Gall et al., 2007).This study also offered a good opportunity for the investigator to improve on interviewing skills, and creating confidence in interviewing teachers. In addition, the audio and video recorders which were planned for used in the main study data collection were also tested. It was found out that the video-camera battery could not last for two consecutive physical education lessons and had to be recharged after every lesson. This helped in the main study where the observations were planned giving room for camera battery recharge.

3.6 Main study

3.6.1 Prior preparation

Prior to any interview or observation exercise face to face appointments were made with the teachers. Confirmations were further done through the phone with each of the teachers. This was especially crucial for avoiding unnecessary postponements in this study which had an 11 week schedule that covered the exact school term dates. As such, postponements would have interfered with the study.s schedule. Therefore, upholding the appointments was of paramount importance. Further, verbal explanations and assurances were made to each of the participating teachers and each was issued an informed consent letter (Appendix C) requesting for their participation. The consent letter outlined the study procedures and delineated rights as a participant in this study. In addition, the three teachers were informed

about the interview audio-recording and the video-recording of their physical education
lessons which they duly consented.

Before embarking on the actual observations, two mock video-recorded observations were
conducted for every teacher as they conducted physical education lessons with their classes.
The aim was to familiarize the teachers and the learners with the presence of the video-
recorder in their lessons hence, minimize a possible reaction on the presence of the camera
from the teachers and the learners which could affect the credibility of the data.

3.6.2 Data collection through interview

Prior to the interview, casual talk was initiated with the respective teacher so as to create
rapport. Data was collected through face to face interview, which was done during normal
school hours. This method was especially useful in this study as it allowed verbal prompts and
probes which helped in obtaining more information from the teachers thus enriching the data.
Such probes included; please explain further, what could that mean...? How else could you do
it...? Would you like to add anything? Still, the questions were reframed and or repeated in
circumstances where they were not well understood such as, “you said....is that right”?

Specifically, the interview focused on how the teachers ; interacted with the learners with
physical disabilities, facilitated peer support, analyzed the tasks to suit learners with physical
disabilities, adapted equipment, rules and regulations of the game and organized the learners
and the learning environment.

In addition, this method provided opportunity to see responses that were made by the teachers
like the tone of the voice, facial expressions, language and hesitations. For example, one
teacher, Keshi occasionally used demonstrations to explain some facts. This is information
which could not have been gotten through such other methods like questionnaire which is
usually answered in the absence of the investigator. All interviews were conducted in the
school, in a quiet room and audio-recorded. Each teacher was interviewed once and they
cooperated well. Transcriptions followed soon after every interview. The shortest interview
exercise took seventy four minutes while the longest took ninety eight minutes: interview is
time consuming (Robson, 2002).

The recording reduced the need of extensive note-taking thus speeding up the interviewing process. In addition, it enabled more focus on the teacher and responses hence gathering more information. Moreover, the tapes provided opportunities for repeatedly listen the transcriptions thus capture as much details as possible. According to Yin (2003), audio-tapes provide a more accurate rendition of any interview than any technique. At the end of every interview the interviewee was acknowledged.

3.6.3 Data collection through observation

All the observations were carried out in an open football field where the teachers usually conducted their physical education lessons, thus their natural setting. The lessons involved a lot of movements both of the teachers and learners which at times blocked the cameras view out of the action being recorded. As such, prolonged video-recordings could not be possible from a stationary position. For that reason recordings were done in motion from one place to another. This was necessary in order to capture what was happening at a close range and facing the action.

However, where possible zoomed recordings were carried out as they were preferred than close recording which were conscious of the learners and the teachers, thus essential in avoiding acting on the camera. The observations were carried out in three phases spread over an 11 week period the study lasted. The phases were; before the intervention program; after the intervention program; and after a 2week rest period of non engagement with the study's process.

2nd & 3rd

Week

1st Week

After

Rest period

Rest

Period

After

Intervention

Intervention

Before

Intervention

Piloting & Mock

Observation

10th & 11th

Week

8th & 9th

Week

6th & 7th

Week

4th & 5th

Week

Observation Schedule

Figure 1: Illustrated observation program

### 3.6.4 Observation before intervention

This was the initial observation and was carried out in the 2nd and 3rd week of the study. The observation was done during the normal physical education lessons as scheduled on the timetable. Every teacher was observed the for whole lesson duration of 30minutes for class three, and 35 minutes for each of class four and six. During these observations the teachers had not worked with the "Teachers for All" DVD material. Therefore, the information gathered during these observations formed the initial data before the subsequent intervention program.

### 3.6.5 Aspects of the of the "Teachers for All" DVD material

Some of the aspects exemplified by the teacher in the material are briefly highlighted below.

The DVD's teacher's role in the physical education

Learning environment

The teacher (female) conducts the lesson on a flat ground and clear of any obstacles. The teacher organizes the learners in semi-circle. This seems to give all learners including those on wheel chairs a clear view on how she is demonstrating and explaining about activities to be performed.

Facilitated interaction

The teacher fosters interaction between learners with and those without physical disabilities by pairing them. In addition, she also pairs with learners with physical disabilities. Often she engages them in animated discourse in the process of performing activities together. Furthermore, she assigns learners without disabilities to those with severe physical disabilities to assist them in mobility and performing some of the activities together.

Guided participation

The teacher explains and demonstrates the activities to be performed several times. This appears to give the learners more understanding on how to perform the activities. In addition, she supports learners with physical disabilities thus enhancing their participation.

Task analysis

The teacher is very active and maintains a close proximity with the learners with physical disabilities. This seems essential in identifying learners experiencing difficulties in performing the activities. Regularly, she goes round supervising how learners with physical disabilities are performing the activities.

Peer support

The teacher pairs learners with and those with physical disabilities together. Between them, the learners assist each other in performing the activities. Frequently, this teacher also pairs with learners with physical disabilities and performs some activities together with them. This makes all learners including those on wheel chairs actively involved in the lesson.s activities.

3.6.6 Intervention

Introduction

The intervention involved the teachers working with the “Teachers for All” DVD material where they used the physical education sequence. This sequence as earlier explained was developed from a physical education lesson that comprised learners with and without physical disabilities and was conducted in a setting similar to that of the present study.

A seminar program was organized for the teachers to work with the “Teachers for All” DVD material. The seminar was carried out in the 4th and 5th week and took place in two days (consecutive Saturdays) and was held in the schools resource room. The procedure in each session entailed the teachers watching the physical education sequence and immediately after discussed the issues of inclusion as exemplified in this material. Specifically, the focus was on how the teacher from the “Teachers for All” DVD material ; interacted with the learners with physical disabilities, facilitated peer support, adapted equipment, rules and regulations of the game and organized the learners and the learning environment. Each of the Saturdays had two sessions thus four sessions for the whole seminar. Each session lasted about 30minutes with a 15 minutes break after every session.

Session one

This was the initial opportunity for the teachers to use the “Teachers for All” DVD material. It was attended by six teachers, with five being physical education teachers. The five included

the three teachers who were the cases in this study. Preliminary procedures on the seminar and how to operate the DVD player were explained. The investigator though present adopted a non participant role but occasionally noted teachers sentiments relevant to the study. The teachers selected two teachers, Migori as the person in-charge and Teso as the secretary to keep the records. During this, session the teachers worked with the "Teachers for All" DVD material by watching the physical education sequence twice in row.

This was followed by discussions that were guided by questions (Appendix F) that were provided before the start of the session. The questions were based on the phenomenon under study and they centered on how the teacher from the "Teachers for All" DVD material interacted with the learners with physical disabilities, facilitated peer support, adapted equipment, rules and regulations of the game and organized the learners and the learning environment.

Session Two

In this session the teachers also watched the same sequence as in session one twice in row. Each teacher was required to identify other methods not discussed in session one, used to facilitate participation learners with physical disabilities. In addition, teachers were required to suggest other methods that could have been used to facilitate these learners and not typified in the sequence. During the discussion, the teachers raised and discussed the various methods they had identified in comparison to what they had discussed in session one.

Session Three

This was the second day.s first session and was attended by nine teachers. This comprised of the six that had attended the previous Saturday.s seminar plus three more who were also physical education teachers. As such, eight physical education teachers were in attendance. The teachers worked in one group. Among the nine teachers in attendance, were the three cases in this study. A similar programme to the previous Saturdays though with some changes was adopted. In this session the teachers worked with "DVD material" by watching the sequence once. This was done in steps with several pausing of the DVD player. This was done when teachers randomly picked aspects of facilitating learners with physical disability in the activities from the material. Then they discussed this in relation to what they had considered and practiced in the week.s lessons after the previous Saturday.s seminar.

Session Four

This was the final part of the seminar program. In this session the teachers did not work with the “Teachers for All” DVD material directly. Rather they utilized this session to give views on working with, and the lesson learnt from this material.

Session five

After the two day.s seminars, the teachers who were the cases in this study were given one more week to individually work with DVD material during their free time. The intention was for the teachers to have an individual self-reflection. According to the teachers, each worked with the material in two different days. Keshi had it on Monday and Thursday, Teso on Tuesday and Friday, while Juma used it on Wednesday and Saturday.

3.6.7 Observation after intervention

After the intervention, every teacher was observed once while conducting physical education lesson with his or her respective class. The observations were carried in the 6th and 7th week of the study. The focus during this observation was on how the teachers after the intervention; interacted with the learners with physical disabilities, facilitated peer support, adapted equipment, rules and regulations of the game and organized the learners and the learning environment. This was necessary in establishing whether there were changes on how the teachers embraced these aspects in their lessons after working with the “Teachers for All” DVD material.

3.6.8 Rest period

This period was marked by a non-engagement of the three teachers in the study.s processes. This occurred in the 8th and 9th week of this study. However, they continued with their usual school routine. The rest period took two weeks in the 8th and 9th week of this study.

3.6.9 Observation after the rest period

After the rest period the teachers were each observed once again. This was in the 10th and 11th week of the study. The focus during this observation was on how the teachers after the two weeks rest period; interacted with the learners with physical disabilities, facilitated peer

support, adapted equipment, rules and regulations of the game and organized the learners and the learning environment. This was necessary in establishing the differences and/or consistencies within the three observations. Thereby, determine the impact of working with the “Teachers for All” DVD material on these aspects among the three teachers.

## 3.7 Analysis of the data

### 3.7.1 Interview

The audio-recorded interviews were transcribed verbatim in hand writing and assigned code letters for ensuring anonymity. The tapes were replayed several times to cross check on any omissions or alternations. The handwritten transcriptions were then typed and the carefully proofread to ensure accuracy between the transcriptions was maintained. Following this, each of the transcription was guardedly read several times for the purposes of familiarization with the data. Summaries were made on the salient issues emanating of each case. This resulted in segments of concepts pertinent to this study which were subsequently highlighted by use of varied highlighters. Segments that represented more than one concept were marked with different highlighters. The highlighted segments were the matched with the observation segments.

### 3.7.2 Observation

The video-recording were replayed several times so as to provide a detailed narrative record of what the teachers and learners did. Realizing that “familiarity” with the data was essential in analysis process (Creswell, 2003), time was taken to repeatedly view the video recordings so as to capture as much detail as possible, rectify likely omissions thus ensure accuracy of the analysis. Outstanding issues relevant to this study were recorded in the observation checklist. Summaries were made on the salient issues emanating of each case. This resulted in segment of concepts relevant to this study which were subsequently highlighted by use of varied highlighters. Segments that represented more than one concept were marked with different highlighters. The highlighted interview and observation segments were then matched together; this led to the identification of main categories. As such, guiding questions were then developed, which eased the discovery of subcategories under each main category. This pattern of analysis proved especially useful in identification of commonalities as well as

uniqueness within and across cases and the methods used. Analysis is the process of the systematically organizing the interview transcripts, field notes and other materials collected; bringing meaning to them so that they can tell a coherent story; and writing it all up so that others can read about what is learnt (Creswell, 2003, Patton, 2002).

### 3.8 Validity and reliability

In a qualitative research, validity refers the extent to which the research uses methods and procedures that ensure a high degree of research quality and rigor. In view of this, more than one method was used in data collection in this study. The intention was to control bias and establish propositions that could lead to trustworthiness of the data. Active collaboration on the interpretation of the data was maintained between the teachers and the investigator. This was to avoid misinterpretation of the data that would otherwise have diluted the credibility of the study findings. The instruments for data collection were developed, rigorously checked and cross-checked with necessary corrections made and finally pilot tested before being used in the main study. This was to establish applicability of the instruments thus their credibility.
Reliability refers to the ability to produce true and meaningful knowledge through the application of methodologically controlled investigation (Kvale 1998, Robson, 2002; Creswell, 2003).

#### Threats to validity and reliability

Threats to validity and reliability of this study included, the interview guide had open-ended questions and this could have allowed the teachers to give irrelevant information. Two of the three teachers were familiar with the investigator; they would have given responses that were of the investigators interest (Yin, 2003). The teachers tended to be conscious of the audio and video recorders and also there was the fear of the recorders failing to work.

#### Strengthening validity and reliability

A pilot study was carried to test the instruments and necessary changes were done to the instruments. The piloting also helped in improving the investigator.s interview techniques and instilling more confidence. During the interview exercises the teachers were given enough time to reflect on the question before responding, probing technique was used thus getting more details from a particular question. The audio and video recorders used during the

interview and observation made it easier to go over the recordings several times to get
accurate information.

### 3.9 Ethical issues

In research, ethical issues are considerations meant to protect the privacy of the informants as
well as ensuring good working relationship with the informants. In this study, authority to
carry-out research was sought from the National Council of Science Technology (NCST). A
letter of introduction from the University of Oslo was attached to the research application
form together with two copies of the certified research proposal. The council duly issued
permit for the exercise, and as a requirement copies of the same were presented to respective
district commissioners, educations officers and head teachers. Further approval was sought
from each of the teachers verbally and through a consent form detailing the study procedures
and delineated rights as a participant in the study. Consent of participants in observational
research should be sought and human subjects be informed of the nature and implications of
research and their participation be voluntary (Robson, 2002; Patton, 2002; Creswell, 2003).

# 4 Data presentation and analysis

## 4.1 Introduction

This chapter presents findings based on the data collected as explained in chapter three. The study comprised three teachers with each individual teacher as a case in this study. These cases are referred to as; Teso, Juma and Keshi. The purpose of this study was to explore the inclusion practices used by teachers to facilitate participation of learners with physical disabilities in physical education lessons, and find out the impact of working with the "Teachers for All" DVD material on the teacher.s inclusion practices. The presentation is done case by case. It.s based on data collected through the interview as well as data build through observations. The following are considered, the school.s background, cases as; Teso, Juma and Keshi. In every case the interview data precedes the observation data.

## 4.2 The school

This study was carried out in a special primary school in the central province of Kenya. Initially, this was a boarding special school for learners with physical disabilities. However, in the recent past, it integrated learners without disabilities as day scholars thus became an inclusive school. Nonetheless, it.s still referred to by the original name "special school for the physically handicapped". This is a Government school through the management is under the Salvation Army Church who oversees the establishment and maintenance of its infrastructure.

The school is well established with good infrastructure. All the pavements are paved thus easing the movement of learners using mobility devices within the school. The classes have door ramps, wide doors and windows. The school has a functioning physiotherapy and laboratory sections. The physiotherapy section is used for therapy sessions for learners with various conditions that require therapy. The laboratory section is used for the making mobility and assistive devices. The total enrolment is 290 pupils out of which 110 have physical disabilities who are boarders while the rest have no physical disabilities and as a school regulation they are day scholars. The school has a large open-air field and this is where all outdoor activities including the physical education activities are held. The field is flat, covered with grass and thus conducive for carrying out out-door activities.

## 4.3 Teso

### 4.3.1 Interview

### 4.3.2 Background

This is a professionally trained teacher, and has attained a degree certificate in Special Needs Education in the area of learning disabilities. He has a teaching experience spanning over 25 years in regular and special schools. During his teaching career he has attended several seminars in special needs education.

His class.s enrolment was 32 pupils, 18 boys and 14 girls, half of the class enrolment both boys and girls, are learners who have some form of physical disabilities with 5 (3 boys and 2 girls) having severe physical disabilities and as a result they are consistently on wheel chairs. 3 others, 2 boys and 1 girl, have lower limb functional limitations which make them to use crutches or walking frames. The remaining 10 of the learners with physical disabilities have mild to moderate disabilities. According to Teso, his childhood condition motivated him to train in the field of special needs education;

" …was a stammer at young age, and I wanted to know more about my condition and whether my children would inherit the same condition, and also to help young ones who might experience such a condition and may be other people could not understand them"

### 4.3.3 Teso's understanding of inclusion

According to Teso, inclusion is a situation where those children with and without disabilities learn together in the same environment where resources and equal opportunities are provided for all. He described how the knowledge he acquired during his training helped him to understand the learners. needs and therefore manage inclusion related issues in his classes.

### 4.3.4 Teso's understanding of physical disabilities

Teso described physical disability as the external, visible physical disabilities that often affect motor functioning of a child. He gave examples of physical disabilities in his class as, cerebral palsy which was the most prevalent condition; others included polio and club foot.

He said the school receives learners from any part of the country and mostly from the poor areas where these children lack even the basic needs. He said the issues facing these learners, coupled with their disability condition require a caring heart;

"…in fact teaching learners with physical disabilities is a calling…you need that heart to reassure them…… even in the Bible there were some people who were handicapped and Jesus cured them, so there is hope".

4.3.5 Teso' roles in the physical education lesson

Organization of the learning environment

According to Teso, he had a total of 28 out of the possible 40 lessons per week. When asked about the 12 lessons in which presumably he was free, he said he utilized the time in lesson preparations such as making lesson plans, assembling and adapting physical education equipment. As he said, when planning for his physical education lessons, the focus was on the individual learner.s capability. He quipped;

"…the type and degree of the disability dictates the kind and intensity of physical activity to be given to a child".

When asked about the term adaptation, Teso explained it as making activities for learners with disabilities to a manageable level and modifying equipment to suit individual.s needs. According to him, no effective participation for learners with physical disabilities can take place in physical education activities without appropriate adaptation. On how he applies adaptation in his physical education lessons, he described on modification of the learning environment, equipment, activities, rules and regulations of the game. On importance of adaptation. He said;

"these learners have their individual needs depending on the type and degree of the disability and so the level and pace of participation are different, they need different adaptations depending on one's disability"

Giving an example he said,

"if its Javelin throwing skill, Kikoi (referring to a learner on wheel chair) can't use the normal one, it's too heavy and long for him, "here I use short and lighter one. In case

of volley ball, I adjust rules by allowing learners with disabilities more than one consecutive
touch, also allowing unlimited substitution in games like football".

Facilitated interaction

Teso expounded on several ways he facilitates interaction amongst his learners. According to
him he pairs with learners with physical disabilities and performs physical activities together
with them. He also mentioned that, he encourages learners with physical disabilities and those
without physical disabilities to pair together. In addition, he used groups as another of the way
of boosting interaction between these learners by equitably distributing learners with and
without disabilities in the groups thus enabling easy pairing between them.

Guided participation

Teso explained that, he introduces his lesson through warm-up activities which are of light
intensity geared toward preparing the learners. muscles in readiness for the class activity.
According to him, he tackles the class activity through explanations and demonstrations step
by step with learners doing the same as he observed. When asked how handles situations
where a learner with physical disability has a difficulty in performing the skill, he said;

"I assist the learner by doing the activity together with him or her and also I may
assign an able-bodied learner to help in doing the activity together"

Task analysis

On account of establishing the right kind of activities and equipment to be used during a
physical education lesson, Teso said;

"I hold each of the learners as an individual with unique needs, so I consider their
individuality in determining activities or equipment to use".

He noted that it was sometimes difficult to meet all the learners. individual needs, due to the
diversity of disabilities in his class. However, he said they improvise most of the equipment
needed in the physical education lessons by using locally available materials, such as waste
papers in making balls. This as he said, helps in getting equipment available almost for
everyone and therefore enhances their participation. When asked how he teaches a skill that
appears complex to the learners. He said,

"I break it into simple components, and then teach it from simple to complex"

Peer support

Teso explained different ways he uses in assisting learners with physical disabilities to participate in physical education lessons. Among them, use of learners who are able to perform a particular activity to assist those experiencing difficulties. He also elucidated how he had made the groups making sure that in every group there were learners who could offer assistance to learners with physical disabilities either for mobility or in performing the activities. Further, he said he encouraged pairs between learners with and without disabilities.

4.4 Observation-before the intervention

4.4.1 Teso's roles in the physical education lesson

Organization of the learning environment

The lesson was conducted in an open air football field. The ground was flat, free of any obstacles, and covered with grass. It appeared conducive for physical activities, and learners using mobility devices moved with ease. The demarcation of the area in which the lesson was to be carried was clearly marked using four differently colored field markers and labeled A, B, C, and D. These markers also denoted the group activity locations. During the skill activity, the learners were freely spaced and this provided them with enough space to perform the activity. Equipment was assembled at a point outside the demarcated area. However, they were few and with little adaptations. During the group activity, the groups moved in a clockwise direction from one location to the next and performed the activity that the former group performed. This enabled the learners to participate in performing four activities by the end of the cycle.

Facilitated interaction

In most of this lesson.s physical activities, learners without physical disabilities performed with ease. For the learners with minor functional limitations they considerably performed well. Those with moderate physical disabilities, though they performed, they did so with some difficulties. However, those with severe physical disabilities could only do so with some

assistance which at times offered by Teso. However, when he was busy with other learners
they learners remained idle.

Interaction between learners with and those without physical disabilities during the activities
was rare. Since pairing between learners was based on physical capabilities. Those with
physical disabilities paired amongst them as did those without. In addition, teacher.s
individual learner.s attention for learners with physical disabilities during the activities was
random and rare. However, in few occasions such in the game activity some level of
interaction between learners with and those without physical disabilities was evident.

Guided participation

Teso demonstrated each of the skill to be performed to the learners. On two different
occasions, Teso paired with learners on wheel chairs and performed a push and pull activity
together. At times he called out for a learner.s attention by calling his or her name and in the
process instructed him or her on how to perform the skill, it was common for him to say like;

"hi, ..you!.. Sondu, it's not that way, it's like this..".

Individual learner.s attention for the learners with physical disabilities was rare and at times
learners on wheel chairs were left idle while their peers were busy performing the activities.
Teso used activities that some of the learners with and without physical disability performed
with ease and often encouraged them by calling out their names. At some point he used a
different activity (swinging hands) for learners with lower limb paralysis since the activity
that was in progress (star jump) required legs movement.

Task analysis

Occasionally, Teso maintained a close supervision of what the learners were doing in some
parts of the lesson. He went round motivating idle learners into action and closely monitored
group activities which made learners without disabilities and those with mild disabilities
active in the activities. However, learners on wheel chairs were often seen being idle.

When demonstrating the class activity (crab walk) learners with physical disabilities were
placed close to the teacher. This made it easier for them to have a clear view on how to
perform the activity. During the group activities Teso went round in the four groups and his
presence heightened more action from the learners in performing the activity. Occasionally,

he explained the steps to be followed in performing an activity to those who were
experiencing some difficulties.

Peer support

Teso assigned learners without disabilities to the learners with mobility difficulties. During
the group activity they helped in shifting their peers from one group activity to the next.
However, this peer assistance was not extended in supporting them to perform the activities
since in some group activities they were often idle whereas their peers were busy taking part
in the activities.

4.5 Observation after the intervention

4.5.1 Teso's roles in the physical education lesson

Organization of the learning environment

The lesson was carried out in an open air football field. The field was covered with grass,
smooth and conducive for physical activities. In addition, learners using mobility devices such
as wheel chairs and walking frames moved with ease. When demonstrating the class activity,
Teso organized his class in a semi-circle. Therefore, every learner had a clear view on how to
perform the skill. During the group activities, each group had its location from where they
performed the group activity, which was different from the other groups. Nevertheless, they
moved from one location to the next in a clockwise direction till they accomplished
performing all the group activities, hence had the opportunity to perform all the four skills.

Facilitated interaction

Teso fostered interaction between learners with and without physical disabilities by pairing
them to perform activities together. He also assigned learners without disabilities to learners
with severe disabilities to assist them in mobility and in performing activities together. In
addition, he also paired learners with similar functional limitation together. This was to
enabled them take on an activity at their ability level conveniently which was done under his
supervision. Moreover, when demonstrating how to perform some activities Teso paired with
learners with disabilities. In addition, during the class and group activities parts of the lesson,

he regularly paired with learners with physical disabilities and performed some activities
together with them.

Guided participation

Teso first explained and then demonstrated how to perform some activities in steps. During
the introduction, he paired with Mule (a learner who is lower limb paralyzed) to demonstrate
a hand see-saw activity. Regularly, he went round identifying those with difficulties in
performing some of activities. Often, he aided them in performing some of the activities. In
addition, he paired with learners with physical disabilities to demonstrate how to perform
certain activities, and offered individual learner.s assistance when needed. At some point he
organized some learners on crutches in a better position to perform a hand see-saw activity.

Task analysis

Teso was constantly close to learners with physical disabilities which essential in identifying
those experiencing difficulties. Often, he intervened by explaining and/ or demonstrating the
activity again or pairing with the learner and performing the activity together. Pairing with the
teacher seemed to thrill the learners and regularly he boosted their morale by using
encouraging words such as;

"…ooh yes Mweni good work continue,… group D clap for Uwezo"

Occasionally, he organized learners with physical disabilities on better positions to perform
particular activities. This seemed to heighten learners. self esteem as they strived to perform
the activities.

Peer support

Teso paired learners with and without physical disabilities together. At times he also paired
learners with disabilities together. In addition, he assigned learners without physical
disabilities to learners with severe physical disabilities to assist them in mobility and in
performing some of the activities. Interestingly, learners without physical disabilities
occasionally provided opportunities for participation to those with physical disabilities;

"…sasa ni turn ya Tala" Swahili for (it's now Tala's turn)".

Teso also used four learners without physical disabilities to demonstrate the class activity (swinging rollers around the waist line) which he was not able to perform. During the group activities, Teso distributed the learners who had demonstrated the skill in the groups to assist those who had difficulties in performing the skill within the groups.

4.6 Rest period

This period was marked by a non-engagement of the three teachers in the study.s processes. However, they continued with their normal school routine as usual. The rest period took two weeks in the 8th and 9th week of this study.

4.7 Observation after the rest period

4.7.1 Teso's roles in the physical education lesson

Organization of the learning environment

The lesson was carried out in an open air football field which was covered with grass. Demarcation of the area for conducting the lesson clearly marked and cleared of any obstacles. This made it safe for the learners to carry out the physical activities. During the class activity, Teso organized his class in a semi-circle format. This seemed to give learners a clear view on how he was doing it, hence enable them to follow the same steps. Adjustment to some activities to enhance participation of learners with physical disabilities was evident. In addition, adaptation of equipment was heightened as balls of various sizes, weight and different textures were provided.

Facilitated interaction

Teso hastened interaction of learners with and those without physical disabilities by pairing them together. This was evident in all the stages of the lesson. However, in some activities he paired learners with physical disabilities together for expediency of performing the activity, as those paired so had a similar functional limitation hence they conveniently took on the activity at a level their strength and ability could allow.

Regularly, Teso interrelated with the learners with physical disability by pairing with them to
demonstrate how to perform some activities to the whole class. He also paired with learners
with disabilities and performed some the activities together

Guided participation

Teso demonstrated how to perform the activities in steps and often used learners with physical
disabilities in the demonstrations. During the class activity back-to-back push he paired with
Zulu (a learner who was lower limb paralyzed) and demonstrated the activity to the whole
class. He also organized learners with lower limbs paralysis in a better position to perform the
push and pull activity.

Task analysis

Teso was consistently close to learners with disabilities whom he frequently paired with when
explaining or demonstrating an activity to the class. On several occasions, he organized
learners with disabilities on better positions to perform some activities. His presence seemed
to enhance learners. morale as they strived to perform the activities. Teso.s close monitoring
of his learners when performing helped him in identifying learners with physical disabilities
who were experiencing difficulties in performing some of the activities. Often, he intervened
by assisting the learners to accomplish performing the activity, and / or assigning learners
without disabilities to assist them. At times, he adjusted some of the activities to suit
individual learner.s needs.

Peer support

Teso paired learners with and without physical disabilities to perform activities together.
Between the pairs, learners without disabilities regularly assisted their peers with physical
disabilities in performing the activities. He also assigned learners without disabilities to
learners with severe disabilities to assist those with physical disabilities in mobility from one
group location to the next and in performing some of the activities. In addition, he paired
learners with similar functional limitations to perform the activities that required similar
endurance. On the other hand, learners without disabilities frequently helped those with
physical disabilities in performing the activities.

## 4.8 Juma

### 4.8.1 Interview

### 4.8.2 Background

Juma is a professionally trained teacher, and has attained a certificate in primary teacher.s course. On specialization he has undergone a 2 year Diploma course in Special Needs Education. He has a teaching experience of 21 years with 11 years of these years in this school while the rest in various regular schools. He teaches 25 out of the expected 40 lessons per week. Beside teaching physical education in class 4, he also teaches other subjects in this class as well in other classes.

His class enrolment was 32 learners 20 boys and 12 girls, out of this, 18 learners have some form of physical disabilities. Among the 18 learners with physical disabilities 3 boys and 2 girls have severe physical disabilities and uses wheel chairs for their mobility. In addition, 4 other learners 2 boys and 2 girls have moderate physical disabilities much of which affects their lower limbs functional capabilities and as a result they use crutches for their mobility. The remaining 9 learners have mild physical disabilities.

### 4.8.3 Juma’s understanding of inclusion

Juma described inclusion as, a situation where learners with and without disabilities learn together in the same set-up without segregation and where equal opportunities are provided for all. He explained how he got motivated to learn more about special needs education when he was posted to this school;

“It’s from this school that I learnt pupils with physical disabilities had capabilities just like anybody else.”

He said before then he couldn.t envisage learners with and without physical disabilities in the same class physical education class and doing the same activities together.

“I used to admire Mrs. Uwezo conducting physical education lessons for her class two from a distance”.

4.8.4 Juma's understanding of physical disability

Juma explained physical disability as those external, visible conditions that mostly can be
seen and in severe condition may lead a pupil to use a mobility device. He said;

"Pupils with disabilities have potentials just like anybody else and with proper
resources and opportunities they can make it is because these conditions are visible that make
people with disabilities to be shunned by the able-bodied people in the communities".

When asked to give examples of common physical disabilities in his class, he said, in his class
he had conditions like, cerebral palsy, spina bifida, and polio.

4.8.5 Juma's roles in the physical education lesson

Organization of the learning environment

When Juma was asked to explain how he prepares for his lessons, he replied by saying that he
prepares his scheme of work at the beginning of the every term and then lesson plans on
regular basis. This he said helps him to assemble equipment, plan the lessons activities, and
prepare the field in advance. It was established that Juma.s physical education lessons are
either before or after break time, when asked to explain on this, he learners with physical
disabilities requires some time to assemble in the field due to the nature of disability. On what
he considers when planning for his physical education lesson, Juma said;

"…have to consider the type and degree of each learner's disability so that I know the
right kind of physical activity, equipment and adaptation needed".

On how he did adaptation, Juma said, he adapts the field by shortening the distance, lowering
the goals, adapting the balls;

"…for learners with cerebral palsy who have problems in grasping I can use big, small, rough or smooth balls depending with the disability"

Facilitated interaction

Juma explained how he initiates interaction between himself and the learners, and between
learners with and without physical disabilities. On his part he pairs with learners with physical
disabilities to perform activities together. With the learners, he pairs learners with and without

disabilities together so that those without disabilities may help those with disabilities when need arises. He stressed the importance of interaction in physical education, saying;

"Interaction of learners in physical education lesson is crucial as learners in more than one way needs each other….much of the activities are done cooperatively, so one cannot perform in isolation".

In addition, Juma explained how he uses the game activity during the lesson to facilitate interaction. He said during a game activity in a physical education lesson learners are very excited as they try to support their team to win the game;

"these are some of the instances when learners with disabilities forget they are disabled"

Guided participation

According to Juma, he introduces his lesson with 3-5 activities of light intensity, the purpose being for general body warm-up, but two of these activities are used for warming-up the learners specific muscles that will be utilized during the new skill. When teaching the new skill, he does in it steps ensuring every learner is following instruction by doing the same.
Asked how he handles situations where a learner has difficult in performing a certain skill, Juma described how he performs the activity together with the learner, by slowly demonstrating it again, and sometimes;

"holding a learner's hands or legs depending on the type of activity or holding part of the equipment for learner while we execute the skill together"

Tasks analysis

In response to a question on how he determines what a learner may use in a given activity.
Juma stated that, he considers the kind of the activities to be performed in relation to the type of physical disabilities affecting the learners, the type of equipment needed. According to him, this was essential in determining what kind of adaptation was required. When asked, what could influence him in determining the type of equipment to be used, he quipped;

"the type of the activity determines the kind of equipment needed…but you know… pupils with disabilities may need adaptation or different type of equipment depending on the nature of disability"

Peer support

Juma explained that he pairs learners with and without disabilities together to enable those with physical disabilities receive assistance from those without disabilities. He also uses the groups in promoting peer support by equally distributing learners in terms of abilities, disabilities and gender. Asked to explain more on his group formation, he expounded that he had to distribute them equally such that each of these group have almost the same number in terms of learners with or without disabilities. He explained;

"In every group I ensure there are pupils who can assist one another in situation of need, if groups are to compete against each other, none will feel disadvantaged"

He continued by saying that, in every group each learner has a responsibility during the group activities. Giving an example of chest pass skill in game of net ball, he narrated how one pupil takes the responsibility of passing the ball to the other while they return the pass back to him;

"everyone with or without disability has to take his or her turn, even if the pass does not reach the target, at least there will be some effort"

4.9 Observation-before the intervention

4.9.1 Juma's roles in the physical education lesson

Organization of the learning environment

Juma conducted his lesson in an open-air football field which was flat and covered with grass hence conducive for carrying out physical education activities. His class had four groups with each performing a different activity. There were four clearly marked locations one for each group and from where group activities were performed. The learners moved in a clockwise direction from one group location to the next when the teacher instructed them. This enabled them to have performed all the four groups. activities by the end of the cycle. There was minimal adaptation of equipment to suit learners with physical disabilities. However, the

activities seemed to suit learners without physical disabilities, those with mild physical disabilities as those with moderate to severe physical disabilities remained idle much of the time.

Facilitated interaction

Juma intermingled with the learners with physical disabilities on rare occasions. Though he went round from one group location to another, there was minimal teacher.s individual support to learners with physical disabilities. Occasionally, he used verbal instructions to ask the learners without disabilities to shift a learner who was on a wheel chair from one group location to the next. However, though assisted in mobility, the learner was left on his own as his peers were busy participating in the activities.

Guided participation

Juma verbally instructed his learners on the activities to be performed. He randomly moved from one group location to the next supervising how the learners were performing in the group.s activities. Occasionally, he performed some group activities together with the learners in their groups. However, teacher.s individual learner.s attention seldom occurred.

Task analysis

The whole lesson was conducted with learners in their groups and rotating as directed by the teacher. Each of the group had a different activity and therefore by rotating, the learners had an opportunity to perform the four activities. However, Juma.s supervision was randomly done and at times the groups initiated their own physical activities. For learners with physical disabilities, those who could participate did so alongside their peers without disabilities, while those who could not appeared idle. Juma moved from one group activity to next and often used verbal instructions in directing the learners on what to do.

Peer support

Peer support for learners with physical disabilities was infrequently provided. However, learners with mild –moderate physical disabilities made some effort in performing some of the activities. Nonetheless, a learner on a wheel chair could not take part in the activities due to mobility difficult and was constantly left in the former group location. Juma constantly issued verbal instructions to learners without physical disabilities to take care of this learner

and shift him from one group location to the next. However, the learner was often idle and
only watched others performing the activities. Additionally, two other learners with severe
physical disabilities were left this lesson.s activities and watched from a distance. The two
were picked-up by their peers including the teacher on their way back to class after the lesson.

4.10 Observation after the intervention

4.10.1 Juma’s roles in the physical education lesson

Organization of the learning environment

The lesson was conducted in a flat and smooth football field. The area for conducting this
lesson was clearly marked by use of differently colored markers and labeled A, B, C, D this
also depicted the four group locations. When demonstrating the activities, Juma faced the sun
thereby making the learners to face away from the sun and so were not distracted by the sun
rays. In addition, the learners with physical disabilities were placed close to him hence
making them have a clear view of the steps to be followed in performing of the activities.
Still, this placement appeared to be advantageous to the learners with physical disabilities as
the teacher easily singled out those in need of assistance and intervened.

During the class activity part of the lesson, learners were organized in a semi-circle which
gave every learner an opportunity to follow the teacher.s explanations as well as
demonstrations. In addition, when practicing the skill in a semi-circle every learner seemed to
have a chance to take part in the activity as the teacher practiced with each of them.

Facilitated interaction

Juma frequently paired with learners with physical disabilities in the activities that required
pairing-up and performed some activities with them. In addition, he paired learners with and
without physical disabilities to perform activities together. Further, his class had four groups
of mixed abilities and during the group activities learners with and without disabilities were
seen interacting amongst themselves. They shared responsibilities and provided opportunities
for others to take part in the activities. Further, Juma assigned learners without physical
disabilities to learners with severe physical disabilities who assisted them in mobility and
performing together in the activities.

Guided participation

Juma organized his class in a semi-circle to demonstrate how to perform the activities to the whole class. On several occasions, he provided individual support to learners with physical disabilities. This not only appeared to give these learners opportunities to participate but seemed to thrill them as shown by their enthusiasm in the way they performed the activities.
Often, Juma went round in the group activities identifying learners who experienced difficulties in performing the activities. He regularly offered individual support to the learners with physical disabilities who experienced difficulties performing some activities.

Task analysis

Juma established a close proximity to learners with physical disabilities in order to assess their performance in the activities. When he indentified a learner with physical disability experiencing some difficulty in performing a particular activity, he offered individual support.
On several occasions, he adjusted the activities for learners with severe physical disabilities which enabled them to achieve some level of participation. When demonstrating an activity to the whole class, he placed learners with physical disabilities close to him. This seemed to give them a clear view of the steps to be followed in performing the activity while he was in strategic position to note those having difficulties whereby he intervened.

Peer support

Juma assigned learners without physical disabilities to their peers with physical disabilities.
This seemed to assist them in mobility from one group location to the next. Further, on several instances the same learners offered assistance to the learners with physical disabilities and helped them achieve some level of participation.

4.11 Rest period

This period was marked by a non-engagement of the three teachers in the study.s processes.
However, they continued with their usual school routine. The rest period took two weeks in the 8th and 9th week of this study.

4.12 Observation after rest period

4.12.1 Juma’ roles in the physical education lesson

Organization of the learning environment

The venue of this lesson was in an open air football field which was free of any obstacles,
smooth, flat and covered with grass. This made a conducive environment for conducting
physical activities. During the class activity part of the lesson, Juma arranged the learners in a
semi-circle which offered every learner an opportunity to follow his explanations and
demonstrations on ways of performing the skill. In addition when practicing the skill the
semi-circle arrangement provided every learner the opportunity to take part as he practiced
with each of them individually.

Furthermore, Juma.s class had four groups. These groups provided the opportunities for the
learners to further their physical skills as each group had a different skill. Rotating from one
group location to the next may have enabled the learners to practice the four different skills.

Facilitated interaction

Juma fostered interaction between learners with and without physical disabilities by pairing
them in the activities that required pairs. In addition, he also supported these learners
individually. During the group activities learners with and without disabilities intermingled
and shared responsibilities amongst themselves. The learners without physical in the groups
provided opportunities for learners with physical disabilities to take part in the group activity.

Guided participation

Juma arranged the learners in a semi-circle when demonstrating how to perform an activity to
the whole class. This gave all the learners a clear view on the steps to be followed when
executing the skill. At times, he demonstrated to a group or to an individual depending on the
need. Occasionally, he provided individual learner.s attention to learners with physical
disabilities. This not only appeared to give these learners opportunity to take part in
performing the activity but also seemed to inspire them as they seemed delighted when
performing an activity with the teacher.

Task analysis

Juma maintained close proximity to learners with physical disabilities. In addition, he regularly supervised how the learners with physical disabilities were performing. Often, he identified those experiencing difficulties in performing a particular activity and he routinely provided individual learner.s attention. In several instances he adjusted the activity that was in progress to suit learners who were on wheel chairs which facilitated their participation.

Peer support

Juma assigned learners without disabilities to assist learners with disabilities mostly those with severe disabilities. These learners assisted in shifting their peers from one group location to the next. Furthermore, on several instances the same learners offered assistance to their peers enabling the peers to take part in the activities. In addition, Juma.s groups were of mixed abilities and learners with and without physical disabilities networked well in performing the group activities. Regularly they were seen sharing responsibilities amongst themselves on how to perform the activities. The learners seemed to cooperate during the group activities where they freely shared ideas.

4.13 Keshi

4.13.1 Interview

4.13.2 Background

This is a professionally trained teacher, having undergone a 2 year primary school teacher.s certificate course. On specialization she has attained a Diploma in Special Needs Education in the area of physical disabilities. Her experience with learners with physical disabilities spans for 13 years having been in this school over the same period. She has been teaching in this school before it integrated learners without physical disabilities.

Her class enrolment was 33 pupils, 17 boys and 16 girls; of the total enrolment 20 learners both boys and girls have some form of disabilities. The disability continuum for this class is mild-severe. Out of the 20 learners with physical disabilities 3 boys and 3 girls have severe physical disabilities which resulted in paralysis of lower limbs. In addition, 2 of these a boy and a girl have upper limb paralysis making their conditions quite severe. As a result the six are wheel chair bound. Of the remaining 14 learners with physical disabilities, 2 boys and 4

girls have moderate physical disabilities affecting their lower functionalities thus, uses crutches for their mobility. The rest eight have mild physical disabilities and could take part in physical activities considerably well with peers without disability.

4.13.3 Keshi's understanding of inclusion

Keshi described inclusion as the situation where by the „normal. pupils learn together with those with disabilities. She said;

"inclusion has really assisted , I was here before they integrated (learners without disabilities) and am telling you both those with and without disabilities assist each other, they have made the school shine"

She praised her training in special needs education, as the knowledge she acquired made her change perception about people with disabilities.

"…was made to see that even when you are handicapped you can make it"

4.13.4 Keshi's understanding of physical disability

On physical disability, Keshi explained it as, those with a part of their body missing or affected thereby affecting their motor functioning. She gave example of common physical disabilities in her class as, club foot, amputees, and cerebral palsy.

4.13.5 Keshi's roles in the physical education lesson

Organization of the learning environment

For her physical education lessons, Keshi operates on a term based scheme of work and daily lesson planning. According to her, the purpose of having a term based scheme was to have an ample time to assemble and adapt the required equipment needed for each of the physical education lesson. She quipped;

"..learners' more so those with physical disabilities have unique individual needs which must be catered for if they are to successfully take part in physical education activities. So I need enough time to prepare and assemble equipment well in advance".

When asked to explain what she meant by the term adaptation, Keshi, described it as, making
adjustments in the activities and modifying the equipment to suit the learners. needs.

Facilitated interaction

According to Keshi, she uses herself, groups and pairs to facilitate interaction of learners with
and without disabilities. She said she regularly pairs with learners with disabilities, and insists
on pairing between learners with and without disabilities.

Guided participation

When Keshi was asked how she assists a learner experiencing difficulty in performing an
activity, she responded;

"…no matter the degree of the disability I work with the child to at least do something, at times I get those "things"(referring to balls with different texture used by
therapist to train grasping)from the therapist as some of the learners have muscle problems"

She explained that while introducing a new skill, her steps involved explaining, demonstrating
and using learners who could perform to demonstrate again others while they observed. When
the learners were performing the activity she went round supervising whether they are
performing as required and provided assistance where necessary.

Task analysis

On what she considered when planning for her lessons she said, she said that, she reflected on
the nature of the activity against the types of abilities affecting the learners, she emphasized;

"this enables me to know the right kind of activity for the learners hence avoid leaving
some hanging or confused".

She explained that her long term planning helps her to establish what will be needed, when,
and by whom. Keshi.s method of teaching a complex skill to the learners is by first
establishing if there are learners capable of performing it, how many can and cannot perform.
According to her, this was crucial in determining the performance level of the learners. If the
skill is too complex to the learners, she said she approached in steps starting from the simplest

to the complex. She recounted a situation when she was teaching a forward somersault, a skill
in gymnastic;

"I feared this skill; I thought it was risky for the learners. For some time we did
forward roll until eventually we graduated to the somersault skill".

Peer support

Keshi said that she pairs with learners with physical disabilities during her class.s physical
education lessons in order to raise their morale and also assist them to take part in the
activities. She also encourages pairing of learners with and without physical disabilities so
that those with disabilities can be assisted by those without physical disabilities in
circumstances of difficulties. She emphasized the importance of pairing saying;

"…these learners assist one another, and in a class such as mine with many learners
with disabilities it's difficult to meet each individual's needs so I use those without disabilities
to assist them".

Further, she said that she uses the groups. activities to cultivate learners. self-esteem and
sense of belonging as during groups. competition which often happens;

"the learners assist each other, share and contribute to the groups success which
increases pupils sense of belonging and reduces isolation and loneliness".

4.14 Observation-before the intervention

4.14.1 Keshi's roles in the physical education lesson

Organization of the learning environment

The lesson was conducted on an open football field which was large, flat and covered with
grass thus making it conducive for physical activities and for mobility of learners using the
mobility devices. The area used for conducting the lesson was clearly marked with different
colored field makers labeled, A, B, C, and D. These field markers also depicted the group
locations. When Keshi was demonstrating how to perform the class activity she organized her
learners in a semi-circle. This made all learners to have a clear view on what the teacher was

doing. Also it helped her to easily identify those with physical disabilities experiencing difficulties. Equipment was assembled at a point outside the demarcated area. However, they were few and without appropriate adaptation.

Facilitated interaction

Occasionally, Keshi paired with learners with physical disabilities and performed some activities together. However, other learners with physical disabilities who were experiencing similar difficulties were idle as she could handle only one learner at a time. In addition, pairing between learners with and without physical disabilities was rare as in many activities needing pairs; learners did so depending on their physical body conditions. As a result, pairs were either between learners with or those without physical disabilities. As such, interaction between learners with and those without physical disabilities during such activities was rare.

Guided participation

Keshi demonstrated how to perform the skill chest pass to the whole class, and then provided opportunities for participation by all learners by performing the activity with each of the learners. She did this with the learners standing in a semi-circle and she threw the ball to each of learner and in return the learner threw back to her.

During the activities, learners without physical disabilities and those with mild to moderate physical disabilities easily took part in the activities. However, learners with severe disabilities needed individual learner.s attention to enable their participation. Occasionally, Keshi did offer assistance to these learners. Nevertheless, much of the time they were idle.

Task analysis

During the group activities Keshi went round the locations monitoring whether each of the groups was performing the activity as expected. She gave corrections where she felt the learners were not performing as required. As she went round in the group locations, she occasionally identified learners with physical disabilities who experienced difficulties in performing the activities. On rare occasions, she again explained and demonstrated some activities to learners with physical disabilities on how to perform activities they were experiencing difficulties.

Peer support

Occasionally, Keshi used learners in pairs to help each other in performing an activity;
however, this was randomly done as she often said;

"…you in twos, I have said everybody in twos"

This pairing assisted the pairs in performing the activity. However, for learners with severe
physical they often had no one to pair with, and rarely paired with the teacher when the she
came around and noticed their inactivity. Those with mild-moderate physical disabilities
paired with either their peers with similar or without physical disabilities and assisted each
other in performing the activities.

4.15 Observation after the intervention

4.15.1 Keshi' roles in the physical education lesson

Organization of the learning environment

This lesson was conducted in an open football field which was spacious, flat and smooth with
good grass cover. As such, this venue was conducive for carrying out physical activities.
During demonstration on how to perform class activity, the learners faced away from the sun
and therefore were not distracted by sun rays. She arranged her learners in a semi-circle and
this gave every learner an opportunity to practice the new skill overhead pass in a game of
netball with her as she did it with each of them.

During the group activities each group had a different activity thus provided more
opportunities to the learners to take part in several activities as learners rotated in all the four
group locations. In addition, the group activities offered avenues for more interpersonal
relationship as learners could be heard sharing opinions on how to perform the activities
amongst themselves.

Facilitated interaction

Keshi paired learners with and without physical disabilities to perform the activities that
required pairs. Often she was heard using encouraging words when a learner with disability
made a good attempt in performing an activity. Keshi had four groups of mixed abilities and
learners could be seen assisting one another in performing the activities. Moreover, Keshi

kept going round in the group locations and regularly provided individual learner.s attention.
Occasionally, she also assigned learners without physical disabilities to assist learners with
physical disabilities. During the game activity, Keshi chose the game lost a letter which most
of the learners with physical disabilities could participate in. They were given opportunities to
compete against their peers with and without physical disabilities. The game raised the
learners. fervor as they clapped and cheered their peers on.

Guided participation

Keshi explained the steps to be followed in performing the skill. She then demonstrated how
to go about in performing the skill. Furthermore, she gave every learner an opportunity to
perform the activity with her. This gave every individual learner an opportunity to try the skill
with the teacher, while for Keshi she got the opportunity to find out whether learners had
understood. Often, she took learners with severe disabilities through the steps of performing
some activities. Moreover, she devoted more time with learners with physical disabilities
thereby providing them help and opportunities to perform the activities on which they
required assistance.

She frequently used encouraging words to learners with physical disabilities who demonstrated some effort in performing the activities. In addition, she assigned them learners
without disabilities to assist them in performing some activities.

Task analysis

Keshi consistently kept a close proximity to learners with physical disabilities and regularly
identified those who had difficulties in performing some of the activities. At times she
adjusted some activities to suit individual.s level of performance. Further, she regularly went
round and acknowledged learners who where performing the activities as required. This
seemed to encourage the learners as some sought her opinion on their performance.

Peer support

Keshi assigned learners without physical disabilities to learners with severe physical
disabilities to help them in mobility and performing the activities together. In addition, Keshi
paired learners with and without physical disabilities to perform activities together. She also

on several occasions offered individual learner.s support. Interestingly, learners with mild
physical disabilities provided some assistance to the learners with severe physical disabilities.

4.16 Rest period

This period was marked by a non-engagement of the three teachers in the study.s processes.
However, they continued with their normal school routine as usual. The rest period took two
weeks in the 8th and 9th week of this study.

4.17 Observation after rest period

4.17.1 Keshi’s roles in the physical education lesson

Organization of the learning environment

The lesson was carried out an open flat football field which was free of obstacles, and covered
with grass. As such, it was conducive for physical education activities. Moreover, learners
using mobility devices moved with ease. During the introductory part of the lesson learners
with physical disabilities were placed close to the teacher. This seemed to have been
purposefully done as Keshi frequently paired with one of them when explaining or demonstrating the steps to follow in performing the activities. During the class activity chest
pass, she organized her learners in a semi-circle. This appeared to give every learner an
opportunity to practice the chest pass with her. She performed with each of them thus giving
all learners equal opportunities of taking part. In addition, the group activities there was more
interpersonal relationship as often, learners could be heard discussing or giving instructions to
their group members.

Facilitated interaction

Keshi frequently worked together with learners with physical disabilities by pairing with them
to demonstrate how to perform an activity to the class or in activities needing pairs. She also
paired learners with and without disabilities to perform activities needing pairs together. Her
class had four groups which were composed of learners with and without disabilities and
intermingled well during group activities. Keshi repeatedly went round identifying learners
with physical disabilities in need of help to perform an activity and often paired with them to

perform some activities together. These learners were markedly thrilled pairing with the
teacher. Frequently, she used words of encouragement to learners with physical disabilities
which seemed to energize them as they tried to put more effort on performing the activities.

Guided participation

Keshi explained the steps to be followed in performing the chest pass skill. Then she
demonstrated how to perform it step by step. She organized the learners in semi-circle which
gave her a clear view off all learners and facilitated the learners. opportunity to practice the
skill with her. This gave her the opportunity to identify and assist learners with difficulties in
performing the skill. Often, Keshi boosted participation of learners with physical disabilities
participation by doing the activities together with them.

When learners were performing in the groups. locations, she went round and routinely
performed activities together with learners with physical disabilities. For example, in the jump
activity she lifted a learner who was lower limbs paralyzed and they jumped together, she also
paired with another one (a leaner with lower limb paralysis) and performed the back to back
push and pull activity. These learners were markedly thrilled pairing with the teacher.
Frequently, she used words of encouragement to learners with physical disabilities which
seemed to energize them as they tried to put more effort on performing the activities.

Task analysis

Keshi closely monitored learners performing the activities either individually, in pairs or in
their groups by regularly going round monitoring their performance. When she identified
learners experiencing difficulties in performing some of the activities, she, explained,
demonstrated or did the activity together an individual learner, or adjusted the activity to suit
an individual learner.s needs. Further, she verbally acknowledged effort shown by learners
with physical disabilities which seemed to stimulate them into more action.

Peer support

Keshi assigned learners without disabilities to learners with severe disabilities. This assisted
the learners with physical disabilities in mobility from one group activity to the next. During
group activities, the same learners without disabilities and others within the groups performed
the activities together with learners with physical disabilities. Frequently, support for learners

with severe disabilities came from the teacher and learners without disabilities. Interestingly, at times learners with mild disabilities also provided some assistance to the learners with severe physical disabilities.

4.18 Cross case analysis

This cross-case analysis involved the three teachers who were the cases in this study and was done to explore on the similarities and differences that cut across them.

The teachers' background

The interview results indicated that, the three teachers had undergone training in special needs education, which enhanced their understanding about inclusion. Both Juma and Keshi are diploma holders from Kenya institute of special education (KISE) specializing in the area of physical disabilities. Teso has obtained a bachelor.s degree in special needs education, where he specialized in the area of learning disabilities. This was an indication that they had basic knowledge and skills about learners with special needs in education, particularly those with physical disabilities. They also had significant experience with learners with physical disabilities having taught in this school for some time.

Their classes were generally heterogeneous in terms of learners with and without disabilities and on gender basis. The three classes had almost equal number of learners in enrolment, Teso and Juma had 33, while Keshi 32. However, Keshi.s class had more learners with moderate to severe disabilities with 12 out the total enrolment in these categories. For Juma and Teso their classes had similar numbers of learners in these categories with Teso having 6 and Juma 7.

Moreover, based on the interview, Teso was self-motivated in getting training in the field of special needs education. His training was spurred by his childhood-stammering condition which prompted him to learn more this and other conditions. Juma and Keshi their motivation emanated from their posting to this school. The need to acquire the necessary skills and knowledge to handle learners with and without physical disabilities in their classes may have impelled them to get further studies. This probably explains why the two specialized in the area physical disabilities. Based on the interview findings, Keshi considred often considered the emotional aspects of learners with physical disabilities and how physical education

lessons should be utilized to enhance such aspects. With Juma and Teso they were on the
physical aspects of the learners indicating how they facilitate their participation.

4.18.1 Teacher’s roles in the physical education lesson

Organization of the learning environment

Both the interview and observation results showed that the teachers conducted the lessons in
an open spacious football field. The field was flat, free of any obstacles, covered with grass
and smooth. The teachers prepared the learning environment before the start of the lesson.
They used four differently colored (red, blue, green and yellow) field makers labeled A, B, C,
and D, to demarcate the area in which to conduct their physical education lesson. The markers
also signified the group locations during the group activity part of the lesson. Based on the
interview findings Keshi frequently organized her learners in a semi-circle format while Juma
and Teso used the random and freely spaced format. According to them, they assembled and
adapted the equipment to be used in the lessons prior to the lessons. The observational
findings before the intervention revealed that the though teachers provided equipment, they
were not enough. In addition, they lacked the necessary adaptation.

After the intervention, the results revealed a remarkable increase of the equipment and
improvisation in making equipment using locally available materials. In addition, Teso and
Keshi used a variety of equipment which seemed to enhance participation of learners with
physical disabilities. The equipment provided more opportunities as the learners had a variety
to choose from and also adaptations seemed to cater for individual needs.

After the rest period, the results showed that the teachers maintained the same procedure of
demarcating the area to conduct their lessons. More equipment was availed and
improvisations. using the locally available materials was evident. In the process of teaching
Keshi maintained the semi-circle format. Interestingly, Juma and Teso adopted semi-circle
format after the intervention and maintained in after the rest period.

Facilitated interaction

Based on the interview findings, the teachers fostered interaction between learners with and
without physical disabilities by pairing them together. According to the teachers, they did this
to enhance learners interaction when performing the activities together. In addition, the

teachers also paired with the learners with physical disabilities and performed activities
together. According to them, this was aimed at boosting the learners. participation level. In
addition, they utilized the group activities to nurture interaction between learners with and
without physical disabilities. According to them, small groups boost learners. interaction as
the learners are likely to appreciate each other.s contribution towards the group.s success.

The observational results before the intervention showed that there was minimal interaction
between the teachers and learners with physical disabilities. However, though few in
occurrences Keshi and Teso occasionally interacted with the learners with physical
disabilities. In addition, occasions of teachers initiating interaction between learners with and
without physical disabilities were also few as the teachers often used verbal instructions to the
learners to pair-up. It was common for the teachers to say: everybody in two.s. It emerged
that learners without physical disabilities paired between them on one hand, as did those with
physical disabilities. Nevertheless, learners with severe physical disabilities had no one to
interact with as much of the time their peers without physical disabilities were busy
performing the activities.

The findings after the intervention show that the teachers enhanced the interaction between
them and the learners with physical disabilities. Often the teachers paired with these learners
and performed the activities together. In addition, the teachers assigned learners without
physical disabilities to learners with severe physical disabilities which seemed to boost
interaction between them. The teachers verbally acknowledged pairs between learners with
and without physical disabilities. Pairs between learners with and without physical disabilities
increased and appeared to motivate learners as all were actively engaged in the activities.

The findings after the rest period revealed that the teachers maintained regular interaction
with the learners with physical disabilities by frequently pairing with them. Often they
performed activities together with them and sometimes verbally sought their views on the
activities. In addition, they assigned learners without physical disabilities to the learners with
severe physical disabilities to perform some activities together which seemed to boost
interaction between them. Occasions of idleness among the learners with severe physical
disabilities witnessed before the intervention were rare. All the learners were actively engaged
in most activities and appeared interested in performing the activities.

Guided participation

The interview results indicated that the teachers explained and demonstrated the activities to the learners in steps. According to them, this was to ensure that the learners grasped the steps thus enhancing their knowledge necessary in performing the activity. In addition, they also explained and / or demonstrated the activity again to the learners experiencing difficulties to boost their skills necessary in performing the activity. Based on the interview Keshi seemed to be more close to learners with physical disabilities than did Juma and Teso. According to the teachers. explanations Keshi was frequent in pairing with the leaner while Juma and Teso used the word “assigning” other learners to learners with physical disabilities quite often.

The observational findings before the intervention revealed that, the teachers mostly used verbal instructions and individual learner.s support from the teachers were minimal. As such, learners with physical disabilities who needed support to enhance their participation in the activities were much of the time idle.

The findings after the intervention showed that teachers provided guidance to learners with physical disabilities by pairing with them and performing the activities together. In addition, the teachers also offered individual learner.s support to learners with physical disabilities thereby improving their participation. In addition, the teachers also assigned learners without physical disabilities to learners with severe physical disabilities to assist in showing them how particular activities were performed. In addition, they performed some activities together thus in the process, leading their peers in achieving some level of participation.

The findings after the rest period revealed that, the teachers consistently supported learners with physical disabilities. Occasionally, the teachers explained or demonstrated how to perform a particular activity to learners with physical disabilities. In addition, the teachers assigned learners without physical disabilities to learners with severe physical disabilities to offer guidance on performing some activities by performing together with them

Tasks analysis

Based on the interview findings, the teachers considered several factors when preparing their lessons. Key among them was the type and degree of the learners. disabilities affecting learners in their classes. According to the teachers, this was necessary in helping to determine the kind of activities to suit individual learners needs thus ensuring each learner was actively involved in the activities. In addition, the teachers said that, analyzing the type and degree of

disability affecting the learners was crucial in determining the right kind of equipment for each leaner and if adaptation was needed.

The observational findings before the intervention showed that, though not often, Teso and Keshi went round went learners where performing the activities. Occasionally, they identified learners experiencing difficulties in performing the activities. At times, the two teachers. offered some help to learners with physical disabilities by performing some of the activities together with them. In addition, though on few occasions Teso and Keshi adjusted some activities to suit individual learner.s needs. On the other hand, Juma.s class only one learner with severe physical disability and in much of the lesson activities this learner was idle. Others learners with severe disabilities from Juma.s class were left out of the class activities and only watched their peers performing in the activities from a distance.

The findings after the intervention revealed that the three teachers instituted a close proximity between them and learners with physical disabilities. During the teacher.s demonstration on how to perform the activities, learners with physical disabilities were placed close to the teachers. In addition, during the group activities the teachers maintained a close supervision on how the learners with physical disabilities were performing the activities. This seemed essential to the teachers as they often identified those learners experiencing difficulties in performing the activities. And as the results showed, the teachers intervened by offering support to the learners with physical disabilities. At times the teachers also adjusted some of the activities to suit individual learner.s capabilities thus boosting their participation

The findings after the rest period showed that, the teachers maintained a close monitoring of learners with physical disabilities on how they were performing the activities. Regularly when the learners were performing the activities the teachers went round supervising how those with physical disabilities were performing the activities. Regularly, they engaged learners with physical disabilities in performing the activities by performing with them. This made the teachers to be in constantly engagement with the learners with physical disabilities. As a result all the learners were actively involved in the activities.

Peer support

Based on the interview results the teachers used learners without physical disabilities to support the learners with physical disabilities. The learners without physical disabilities

helped their peers with physical disabilities by shifting those on wheel chairs from one group location to the next. In addition, also offered support by performing some of the activities together with them. According to the teachers, they also adapted equipment to suit individual learner.s needs thus enhancing their capacities to perform in the activities.

The observational findings before the intervention revealed that the teachers managed to provide support to individual learners only on few occasions which were random and arbitrary. Though Keshi and Teso offered some support, at times they seemed overwhelmed by the learners with physical disabilities that needed help. Severally, they left these learners idle while they verbally continued instructing other learners. As such, learners with physical disabilities who required support to enhance their participation in the activities were idle in much of the time.

The findings after the intervention revealed that the teachers assigned learners without physical disabilities to the learners with severe physical disabilities. The assigned learners helped their peers in movement from one group location to the next. Furthermore, they also paired with them and performed activities together thus enhancing their participation opportunities. In addition, the teachers also provided support to learners with physical disabilities thus boosting their participation. As such, all learners were actively involved in the physical activities. Interestingly, the two learners left out of Juma.s class before the intervention, were present and actively engaged in the activities.

Findings after the rest period showed that regularly, the teachers provided support to learners with physical disabilities and frequently acknowledged their effort. This appeared to raise the learners. morale as they excitedly participated in the activities. In addition, the teachers assigned learners without physical disabilities to learners with severe physical disabilities to assist them in movement from one group location to the next. They also offered support to their peers in performing the activities. As a result, all learners were actively engaged in the activities and this seemed to make the lessons lively as none of the learners was left out.

# 5 Discussions of findings, conclusion and recommendation

The main objective of this study was to explore the inclusion practices used by teachers to facilitate participation of learners with physical disabilities within inclusive classes, and also to find out the impact of working with the “Teachers for All” DVD material on the teacher.s inclusion practices.

The discussion that follows takes into consideration the research questions that guided this study and the findings obtained. In addition, attempts have been made to draw parallels with previous studies and theory as reviewed in chapter 2. Data was obtained through interviews with the use of interview guide, and through observation with the help of observation checklist. The naturalistic observation data and repeated viewings necessary for transcriptions revealed the individualistic orientations of inclusion practices in facilitating participation of learners with physical disabilities and patterns in what the teachers did before and after working with the “Teachers for All” DVD material.

From having identified these patterns the teacher.s role in the physical education emerged as the major theme that seemed central in the analysis of this study.

## 5.1.1 The teachers’ roles in the physical education

### Organization of the learning environment

Learning environment plays a significant role in motivating the learner.s interest in the physical education activities. Based on both the interview the observation findings, the teachers conducted their physical education lessons in an open football field. The field was spacious, flat, grass covered and soft thus conducive for carrying out physical education activities. In addition, the teachers used four differently colored field markers labeled A, B, C, and D to demarcate the extent to which the lesson was to be conducted. This was done before the start of the lesson and same field markers signified the group locations during the group activities. According to Befring (2001), physical frame factors such as classroom need to be addressed for there cannot be quality education in an environment which is not conducive.
Based on the interview results, the teachers also adapted equipment and adjusted the activities

to suit individual learners depending on the type and degree of physical disability. This enhanced participation of these learners in the physical activities.

However, as the findings before the intervention revealed, adaptation of equipment and adjustments of activities to suit individual learner.s needs was minimal. As such, learners with physical disabilities and who required some adaptation of equipment and / or adjustment of activities were idle much of the time in the lessons before intervention.

Based on the findings of after the intervention and the rest period the teachers established a consistency in the way they prepared the field before the lesson started. The same was maintained in the way they assembled learners and the equipment. In addition, the findings revealed an increase in adaptations and improvisation of equipment by using locally available materials. For example, in all the lessons after the intervention, the teachers availed balls of various sizes, weight and texture. As a result there were balls for almost everyone including learners with weak gross and fine motor muscles who required large and light balls. This avoided situations of idleness and boredom that were frequent in the lessons before the intervention.

The findings after the rest period showed there were enhanced adaptations of equipment using the locally available materials and adjustment of activities to suit individual learner.s needs. For example, Teso adjusted the game activity tag of war where he grouped the learners into two groups. Those with physical disabilities in one group, and those without in another. From every group, he made two teams which competed against each other. However, the teams used different kinds of ropes. The teams for the learners with physical disabilities used light and rough textured rope that was convenient for them. While the teams for the learners without physical disabilities used big strong and heavy rope. In addition, findings after intervention and the rest period showed that the teachers encouraged learners. feedback. This was essential in establishing their individual needs and interests. A child-centered education gives room for diversity, creativity and responsibility in an implication of inclusion (Befring, 2001; Johnsen, 2001; UNESCO, 1994).

Facilitated interaction

Based on the interview the teachers fostered interaction between learners with and without physical disabilities by pairing them together in activities that required learners to be in pairs.

According to the teachers, they also paired with the learners with physical disabilities and performed the activities together. The findings further showed that, the teachers planned physical activities that required learners to pair-up. According to them, this increased learners. chances of pairing-up as it was during such occasions that they required them to pair up between those with and without physical disabilities.

Based on the observation findings before the intervention there was minimal interaction between the teachers and the learners with physical disabilities. However, Teso and Keshi did interact with these learners though on rare occasions. In addition, interaction between the learners with and those without physical disabilities was also minimal as pairing between the learners was according to their functional capabilities. As a result there were only few pairing between learners with and without physical disabilities. As such, interaction between learners with and without physical disabilities was rare

After the intervention, the results showed that the teachers initiated pairs of learners between learners with and those without physical disabilities. Furthermore, the teachers consistently paired with learners with physical disabilities and performed activities together. In addition, teachers were seen initiating dialogue with the learners with physical disabilities as they paired with them. This seemed to work well as the learners looked excited and regularly engaged in animated discourse with the teachers. In same light, Alerby (2003) observes that students identify relationships with teachers as being among the most important parts of their school experience.

The findings after the rest period revealed that the teachers emphasized pairing of learners with and learners without physical disabilities established in the lessons after the intervention. Similarly, in addition to assigning learners without physical disabilities to those with severe physical disabilities, the teachers also increased their individual interaction between them and these learners through frequent individual learner.s attention. While frequent in occurrence, the interaction opportunities were pleasant, cooperative, and meaningful. That is, when either of the learners with physical disabilities did interact with peers without disabilities or with the teacher during explanation, demonstration, receiving feedback, and doing an activity together, these interactions provided opportunities for learners with physical disabilities to acquire knowledge and skills in performing the activities. In view of this finding, Vygotsky (1978) asserts that knowledge and skills that initially exist in the interaction between the novice and the more capable other eventually get internalized by the novice. In these

situations the

learners with physical disabilities internalized the knowledge and skills needed in performing
the activities as was provided by the teacher and their peers without disabilities. Eventually,
they were able to put it into practice when performing the activities.

Guided participation

Due to their functional limitations, learners with physical disabilities could require assistance
in performing physical education activities. Accordingly, the interview findings indicate that
the teachers provided individual learner.s attention by offering support to them, thus leading
them to perform activities they would otherwise not have been able to perform without such
support. The results also showed that the teachers supported learners with physical disabilities
in performing the activities by explaining and through step by step demonstrations of the
particular activity such that the learners could grasp these steps. Rogoff (2003) posits that,
children learn from their opportunity to observe and adults often expect them to learn through
watching.

The observational findings before the intervention showed that though the teachers offered
direction on how to perform activities to learners with physical disabilities, this was however
in rare occasions. Teso and Keshi occasionally provided individual support to learners with
severe physical disabilities leading them to achieve some level of participation. Nevertheless,
in several occasions the teachers seemed overwhelmed by the individual needs of these
learners as they occasionally left them idle and proceeded on with the others through verbal
instruction. Learners with severe physical disabilities were much of the time idle and
appeared bored yet their peers were busy into the activities.

Based on the findings after the intervention, the teachers established a close working
relationship with the learners with physical disabilities. They regularly paired with them and
performed the some activities together. Moreover, individualized teachers support to learners
with physical disabilities improved making all learners with physical disabilities including
those with severe disabilities actively engaged in the lesson.s activities. For example, Teso
paired with Mule (lower limb paralyzed) and performed the back-back push and pull activity;
Keshi paired with Zibo (lower limb paralyzed) and performed cock fight activity, while Juma
performed a crawling activity with KiKo (left lower paralyzed). Interestingly, Kiko was one
of the learners left out of Juma.s first lesson. Under the same vein, Vygotsky (1978)
emphasizes that failure to challenge and engage students in material that stimulate their minds

will lead to apathy and boredom therefore teachers are encouraged to provide opportunities
aimed at students „ zones of proximal development. Therefore, when operating within this
zone the teachers should establish the individual learner.s current level of performance. Then
carry out the necessary adaptation and adjustment of equipment and activities that will enable
the learner achieve a higher level of participation.

After the rest period, the findings showed that the teachers provided more opportunities for
participation of learners with physical disabilities by consistently working together with them.
Moreover, instances of teachers offering individualized instruction to learners with physical
disabilities heightened as often, teachers paired with them and performed some activities with
them. In addition, the teachers also assigned learners without physical to offer support to
those with physical disabilities. At times, the teachers adjusted some activities to enhance
participation of learners with physical disabilities. For example, Teso adjusted the leg cycling
activity for learners on wheel chairs that due to their lower limb functional limitations could
not perform this activity. He directed these learners to perform the hand cycling activity
which they could perform from their wheel chairs. In addition to adjusting of the activities,
several adaptations of equipment were made which made the equipment comfortable to
learners with physical disabilities. For example, balls of different texture and weight were
used which made learners with poor grip due to poor fine and gross motor muscles have
equipment they could easily manipulate.

Task analysis

Based on the interview findings, the type and degree of the disabilities was among the factors
the teachers considered in the course of their lesson preparation. According to them, this was
helpful in exploring suitable activities that would cater for individual learner.s needs during
the physical education lessons. In addition, this enabled them to carry out any necessary
adaptation to the equipment depending on the learner.s individual needs. This ensured the
learners had the right equipment to enhance their participation. In addition, they closely
monitored learners with physical disabilities as they performed the activities thus ascertaining
their current level of performance. This was also essential in identifying learners who were
experiencing difficulties hence provide assistance accordingly. This finding is consistent with
Vygotsky.s theory that suggest that teachers must not limit their analysis of development to
inner functions that have matured; instead, tool or functions in the process of maturing should
also be taken into account (Vgotsky, 1978).

The observational findings before the intervention revealed that, occasionally the teachers monitored learners with physical disabilities performing the activities though it was rare and random. However, the teachers support to individual learners with physical disabilities was minimal and arbitrary. In addition, adjustment of activities to suit individual learner.s needs for learners with physical disabilities was negligible, abrupt and uncoordinated which mostly resulted in lack of activities suitable for these learners. Therefore, with moderate or severe physical disabilities and needed some kind of assistance and / or adjustment of activities due to their functional limitations remained idle and appeared disoriented much of the time.

The findings after the intervention showed that the teachers established a close proximity to learners with physical disabilities. Constantly they supervised and monitored these learners performance in the activities. This was vital because during the process the teachers every so often identified some learners with physical disabilities experiencing difficulties in performing certain activities. This enabled the teachers to at times adjust a particular activity to suit individual learner.s capabilities or provide support which enabled the concerned learner to achieve some level of participation. According to Wood, Brunner & Ross (1976) in scaffolding the teacher helps the learner to master a skill that the learner was not able to grasp independently. The learner is then left to complete unassisted.

The findings after the rest period revealed that the teachers maintained the close proximity of learners with physical disabilities established after the intervention period. This was essential as the teacher easily established those who had difficulties in performing particular activities. This made it possible for the teachers to explore on possible ways that the learners who were experiencing difficulties could be assisted in taking part in the activities. Often, the teachers adjusted the activity, offered some support, or even assigned them learners without disabilities to help in performing the activities together. As a result, all learners including those with severe physical disabilities were kept actively engaged in the lesson.s activities.

Peer support

Based on the interview findings indicated the teachers fostered peer support between learners with and those without physical disabilities by pairing them to perform activities together. This ensured support for learners needing assistance to perform the activities. The teachers also assigned learners without physical disabilities to learners with severe disabilities to assist in shifting them from one group location to the next. The teachers also

indicated that they

used group work to boost peer support. According to them, learners within the groups assisted one another in performing the activities. The group activities enhanced peer support as learners intermingled well and assisted one another during the activities. This relates directly to Vygotsky.s notion of working within the ZPD and confirms the importance of how pupils are allocated to groups. It is suggested that physical education group work reap best results when the teacher selects the groups enabling him/her to create mixed ability groups in which there is at least one expert pupil.

The observational findings before the intervention showed contrary findings to the interview as the teachers hardly initiated pairing of learners between those with and without disabilities. Frequently, the teachers verbally instructed the learners to be in two.s. It was usual to hear teachers instructions to the learners such as; “everybody in two.s”. As was typified by the kinds of pairs among the learners, those without disabilities paired amongst themselves while those with disabilities paired on their own. As a result pairs comprising of learners with and without disabilities were few. In addition, though the teachers provided support, it was random and seldom done. Therefore, learners with physical disabilities had few opportunities for participation in the activities. They only participated in those activities that did not require any support or adjustment.

The findings after the intervention revealed that the teachers initiated peer support for the learners with physical disabilities by pairing learners with and without physical disabilities together. In addition, they further enhanced this by assigning learners without physical disabilities to learners with severe physical disabilities to assist them in shifting from one group location to the next and also to perform the activities together. Interestingly individualized instruction intensified as the teachers went round as the learners were performing the activities and often singled out those experiencing difficulties and offered the necessary support. With the teachers and peers support all learners with physical disabilities were kept engaged in active participation throughout the lesson.s activities. This finding in line with Dyer et al. (2001), observes that peers and teachers play an important role in supporting learners with disabilities in being active members in the classroom.

The findings after the rest period showed that, the teachers frequently provided individual instruction to learners with physical disabilities. Regularly, they paired with them and performed some activities together. The teachers also initiated and encouraged the pairing of learners between those with and those without physical disabilities. Moreover,

learners with

severe physical disabilities had learners without disabilities assigned to them who assisted
them in moving around within the group locations and performing some activities together.
This resulted in many pairs between the learners with and learners without physical
disabilities. This seemed to motivate and encourage both those being helped and the “helpers”
to develop personal skills, such as communication skills, improve self-esteem; learning to
negotiate with one another. In addition, this enabled learners with severe physical disabilities
to achieve some level of participation as they were always engaged in the activities.
According to Doll-Tepper et al. (1989) peer support gives children the opportunity to
experience different roles and responsibilities, and to learn leadership skills and team
working.

5.2 Cross-case analysis

5.2.1 The teacher’s roles in the physical education lesson

Organization of the learning environment

Based on both the interview and observational findings, the teachers conducted their lessons
in the same field. Therefore, to avoid a situation where more than one class was be in the field
at the same time physical education lessons were plotted at different times on the time-table.
The teachers prepared the learning environment in advance before the start of the lesson. They
used four differently colored field markers labeled A, B, C, and D to demarcate the area
where the lessons were to be conducted. These markers also signified the group locations
during the group activities.

In addition, the interview results revealed that, Keshi often used to organize her learners in a
semi-circle during her explanations and demonstrations on how to perform the activities.
According to her, this organization enabled all learners to have a clear view on how she was
demonstrating. It also enabled her to identify learners experiencing difficulties in performing
the activities. However, Juma and Teso the learners. organization was random free spacing.
Observation finding revealed that, this type of organization was disadvantage to some learners
with physical disabilities particularly those on wheel chairs as often their view was obstructed
by the learners who were between them and the teacher.

Furthermore the observation finding revealed a significant difference between the equipment
that was used before and after the intervention. Before intervention, equipment that were used
were few and with minimal adaptations. After the intervention, there was markedly increase
in equipment that were used in the lessons. In addition, improvisation of equipment using
locally available materials was evident. For example, balls of different sizes, texture and
weight made from waste papers and old clothing were used. Similarly, Best and Heller (2005)
and Bigge et al. (2001) highlight the role of the teacher in providing the optimum balance
between structure and freedom of creativity for young children. It is argued that teachers and
other early childhood workers can encourage creativity by behaviors such as modeling
creative thinking and encouraging experimentation. It is clear that creative teachers and
creative teaching are key components in fostering creativity in learners

Facilitated interaction

The interview findings indicated that, occasionally, Keshi and Teso provided individual
support physical to the learners with physical disabilities by performing the activities together
with them. The results further revealed that Juma often used verbal instructions in providing
support to the learners with physical disabilities. This finding seemed to be replicated in the
findings before the intervention.

The observational results before the intervention, indicates that Keshi and Teso made some
effort to interact with the learners with physical disabilities by performing some activities
together. However, this happened occasionally and learners with physical disabilities lacked
regular support and seemed isolated much of the time.

However, after the intervention, interaction between the teachers and learners with physical
disabilities heightened. The teachers regularly initiated interaction between them and the
learners with physical disabilities through individual learner.s support and performing
activities together. They also paired learners with and without physical disabilities together.
Keshi and Teso.s interaction between them and learners with physical disabilities was more
frequent than that of between Juma and his learners. Moreover, Teso and Keshi often used
activities that required learners to pair-up thus enhancing interaction of learners in the process
of performing the activities. In light of this, many scholars believe that the ability of teachers
to structure the learning activities and experiences, to create an optimum learning
environment and to interact with children plays an important role in developing and

promoting children.s use of creative and critical thinking skills (McBride, 1991; Schwager & Labate, 1993; McBride & Cleland, 1998).

Guided participation

The interview results indicate that the teachers lead the learners with physical disabilities in performing the activities by offering individual learner.s support to help the learners achieve some level of participation. In addition, they indicated that they explained and demonstrated how to perform the activities step by step. Then, they asked the learners to do the same as they observed. According to them, this was necessary in establishing the learner.s current level of performance and establishing those who were experiencing difficulties. In addition, Keshi and Teso also used learners without physical disabilities to guide learners with physical disabilities during the paired-up activities. However, Juma rarely used this technique.

The observation findings before the intervention revealed that the teachers offered individual learner.s support on rare occasions. Juma often used verbal instruction and rarely offered individual learner.s support. While Keshi and Teso offered some support to learners with physical disabilities, it seldom occurred.

The findings of both after the intervention and the rest period revealed that the teachers constantly provided individual support to learners with physical disabilities. In addition, they used learners without physical disabilities to lead those with severe disabilities in performing some activities. This seemed to work well as all learners were kept engaged in the activities. Interestingly, after the intervention, the teachers seemed to be consistent in the way they offered support and opportunities of participation for the learners with physical disabilities. The same was maintained after the rest period.

Furthermore, after the rest period the teachers regularly provided individual leaner.s support to the learners with physical disabilities. In addition, the teachers also assigned learners without physical disabilities to assist those with physical disabilities and closely monitored how these learners were being assisted.

Task analysis

The interview results indicated that the in the process of lesson preparation the teachers considered the type and degree of physical disabilities in their classes. According, to them this

essential in identifying suitable activities to suit individual learner.s needs, and determine the necessary adaptation. In addition, they encouraged the learners. views, and according to them this was necessary indentifying learners feeling which enabled them to consider their interests in future lessons.

In the findings before the intervention, Keshi and Teso occasionally went round as learners were performing the activities and often identified learners experiencing difficulties in performing the activities. They intervened by offering some help and on rare occasions they adjusted the activities to suit individual learner.s needs. In Juma.s class only one learner with severe physical disability was present, though much of the time was idle.

After the intervention, the teachers established a close proximity with learners with physical disabilities. In addition, Keshi and Teso verbally acknowledged learners with severe physical disabilities who showed some effort in performing the activities. Furthermore, learners with physical disabilities were placed close to the teachers. During group activities the teachers also maintained a regular monitoring of the learners with physical disabilities by going round in the group locations. They often identified learners experiencing difficulties and intervened by adjusting the activities or offering some support that enhanced their participation. This approach seemed effective in establishing performance level of the learners and the kind of intervention required.

After the rest period, the teachers maintained a close proximity with the learners with physical disabilities. The teachers constantly engaged with the learners with physical disabilities and frequently provided individualized instructions. Often, the teachers went around supervising how learners particularly those with physical disabilities were performing the activities. This appeared to help them in identifying learners required assistance.

Peer support

The interview results indicate that the teachers supported the use of learners without physical disabilities in supporting learners with disabilities. In addition, learners with severe physical disabilities who were on wheel chairs were assigned learners without disabilities to assist them in performing activities and in moving from one group location to the next. They also assisted them in moving from and back to class.

Based on the findings before the intervention, the teachers seemed overwhelmed to meet the individual needs of the learners with physical disabilities. This is because though Keshi and Teso occasionally offered support to learners with physical disabilities, often most of those needing support remained idle. In addition, Keshi and Teso regularly used verbal instructions however, Juma consistently used verbal instructions.

Findings after the intervention revealed that the teachers assigned learners without physical disabilities to learners with severe physical disabilities. In addition, the teachers also on regular basis offered individual support to those with physical disabilities needing help. This seemed to work well as all learners were actively engaged in the activities.

The findings after the rest period revealed that, in addition to offering individual support to learners with physical disabilities, the teachers also assigned learners without disabilities to assist those with physical disabilities. The combined effort between the teachers and learners without physical disabilities in supporting learners with physical disabilities seemed to work well. All learners were actively engaged in the activities and appeared to achieve some level of participation. According to Vygotsky (1978), an optimum learning situation occurs in the zone of proximal development (ZPD). The ZPD implies interaction with more capable and experienced individual.s helps students achieve their potential inquiry and defined goals.

## 5.3 Conclusion

This study explored the inclusion practices used by teachers to facilitate participation of learners with physical disabilities in physical education lessons. It also sought to find the impact of the “Teachers for All” DVD material on the teacher.s inclusion practices. The findings in this study seem to show that training in special needs education is an important factor in implementing inclusive education for learners with physical disabilities. The three teachers had training in special needs education and this may have influenced the way in which they involved learners with physical disabilities in physical education lessons.
Furthermore, the findings indicated that though the teachers had some understanding about inclusive education, they still expressed lack of skills necessary to attend to learners with varying physical disabilities within inclusive physical education lessons. Based on the finding, teachers may need to constantly keep themselves abreast with emerging teaching techniques essential in meeting individual learner.s needs. This was exemplified in the

finding as typified in the lessons after working with the “Teachers for All” DVD material. It is worthwhile to acknowledge that, based on the findings; the teachers established and maintained a consistency that enhanced participation of learners with physical disabilities. Interestingly, the techniques used by the teachers after the intervention were similar as those epitomized in the “Teachers for All” DVD material.

However, the concept of inclusion, like the concept of freedom, is intangible, sometimes elusive, and often subject to divergent interpretations (Voltz et al., 2001). This is partly why the pace of implementation in both the physical education and other subjects appears to be moving slowly. While the magnitude of inclusion practices may, in due course, be accelerated in some classes, the outlook for other learning institutions may be different. Unless considerable time and energy are used in striving to establish and maintaining relevant teaching strategies, unless the majority of learners with physical disabilities have access to individualized instruction, and unless training institutions conduct ongoing research to evaluate the impact of the teaching and learning strategies, inclusive education in the context of physical education will remain a mammoth challenge.

## 5.4 Recommendations

The main findings of this study were outlined and discussed in the previous section of this chapter. The findings obtained may be of importance to individuals in Kenya, more specifically those in the field of special needs education. Furthermore, some findings may also be of relevance to physical education teachers, researchers, and training institutions in particular those offering special needs education courses.

Based on the outcome of this study, some recommendations were suggested. The findings have indicated that even though teachers are trained in special needs education, there is need for continued in-service training and / or refresher courses for teachers. This will re-install confidence; equip them with current information and teaching strategies thereby challenging them to strive to meet the individual learner.s needs.

Training institutions, Ministry of Education Science and Technology and other agents of teacher training should come up with various ways of disseminating refresher courses to the teachers.

Based on the findings, the use of the “Teachers for All” DVD material which is available on-
line could be considered for use by individual teachers, institutions or at Ministry level. In
disseminating skill and knowledge more so to those in the field of special needs education.

Peer support is should be encouraged in schools as it is beneficial to all learners.

Collaboration between the teachers and other professionals should be enhanced, such as with;
occupational therapist, physiotherapists, other teachers and also parents.

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APPENDIX: A

APPENDIX: B

APPENDIX: C

UNIVERSITY OF OSLO

Department of Special Needs Education

P.o Box 1140,Blindern,

N-0318Oslo

Norway.

REF: CONSENT FOR PARTICIAPTION IN PHYSICAL EDUCATION RESEARCH

I voluntarily consent to participate in the research entitled;Responding to challenges of an
inclusive physical education class.

And that George Mwaura (investigator) has explained the purpose of the study, the
procedures to be followed, and the expected duration of my participation.

I understand Audio tapping of my interviews and conversation with the investigator and
Video recording of me conducting physical education lessons with my class will be part of
collecting data for this study. However, the Video recording and any additional information
that may identify persons will subsequently, be maculated by July 1st 2011.

I acknowledge that I have the opportunity to obtain additional information regarding the study
and that any question i have raised have been answered to my satisfaction. I can contact the
investigator on +254721211594 or +4746369149 and/ or through e-mail georgemwaurat@yahoo.com

I understand that I am free to withdraw consent at any time and discontinue my participation
without prejudice or penalty of any kind. I acknowledge that I have read and fully understand
this consent form and a copy of the same has been provided to me.

Name……..

Date……. Signed…….

(Participant)

APPENDIX: D

UNIVERSITY OF OSLO

Department of Special Needs Education

INTERVIEW GUIDE

Good morning/afternoon Mr.../ Mrs.../ Miss... And how are you? First let me thank you most sincerely for according me your precious time to have this interview with you. Then, as per our appointment with you concerning my project; the title being: Responding to challenges of an inclusive physical education class. Our focus will be on how physical education teachers facilitate participation of learners with physical and health disabilities in physical education activities in an inclusive class?

I do to request your cooperation and patience in this session as it may take 60minutes.I wish to request you to answer the questions as truthfully as possible and feel free as we discuss with you. Please feel much welcome, I beg we proceed;

Teacher's Background

We shall start with your general background information.

Gender: male/female

Could you tell me your names please?

For how long have you taught in?

.
This school?
.
Other special school/s?
.
Regular school/s?

What is your highest academic qualification?

What about your highest professional qualification?

Could you briefly explain your training in physical education?

How did you get interested in?

.
Training in this subject,
.
Teaching this subject?

What about training in Special Needs Education (SNE), are you trained?

If yes, briefly elaborate on your area of training.

What was the motivation behind your to training in this area?

Could you tell me of other courses and /or seminars you have attended in?

.
physical education,
.
Special Needs Education.

How could these seminars/ courses have influenced your physical education teaching in your
class?

In which class, do you teach physical education?

Beside physical education, which other subjects do you teach?

.
In this class,

How could be teaching other subjects alongside physical education in the same class affect
your physical education lessons?

How do you handle this situation?

.
What subjects do you teach other classes?

How could these subjects influence your physical education lessons for this class?

How do you cope with this scenario?

In total, how many lessons do you teach per week?

How many free lessons do you have per week?

How do you utilize these free lessons in relation to your physical education class?

The physical education class background

Thanks, now I would like to have some basic background information about your physical
education class.

Beside the class in focus, do you teach physical education in other class/classes?

If yes……

i) What could be the advantage/s and/ or disadvantage/s of teaching this subject in
more than class?

If no/ yes,

ii) What is the class.s enrolment?
.
Boys
.
Girls

As the name of your school suggests, this is a school for learners with physical disabilities,

How do you understand the term physical disability?

What about health disabilities/ impairments?

Does this class have learners with physical disabilities?

What are the common physical disabilities in this class?

Are there learners with health disabilities?

What are the common health disabilities affecting learners in this class?

Does the class have learners without disabilities?

Now on enrolment how is this class composed in terms of learners with and without
disabilities?

Having in mind this class composition you have just mentioned, how would you define your
class?

This being era of inclusion, how do you understand this term?

Being /in special school its likely you/ trained in special needs education you must/ have
come across the term adaptation, how do you understand it in terms of physical education?

How do you apply adaptation in your physical education lessons?

Alongside teachers, which other professional might you be working with for the purposes of
physical education lessons for your class?

In your opinion, what could be the significance of their services to learners with physical and
health disabilities in relation to physical education lessons?

Physical education lesson

Now let’s focus on a practical physical education lesson

How many physical education lessons do you teach this class per week?

At what time of the day have you slotted your physical education lessons in the time table?

What could have influenced you in slotting these lessons at these particular times? Please
explain,

When planning your physical education lessons;

How could having learners with physical and health disabilities influence your planning?

On equipment, how could having learners with physical and health disabilities influence your
choice?

How do you ensure that the equipment are suitable to learners with physical and health
disabilities?

Do you consult some else? If yes, who else do you consult…?

.
Why do you think it.s necessary to consult them?
.
If no, why do you think it.s not necessary to consult someone?

How often do you scheme for you physical education lessons?

What about lesson planning?

What could be reasons behind your system of scheming and lesson planning?

What factors could influence you in the way you set;

.
Lesson objectives?

.
Individual learner.s objectives?

What do you believe could be the significance of these objectives for learners with physical
and health disabilities in physical education lessons?

Prior preparations

Prior to conducting a physical education lesson, what factors do you consider in your
preparations?

What could be the importance of considering such factors?

How do you assemble your learners from the class to the venue of your physical education
lesson?

For learners with physical and health disabilities, in case of ambulatory difficulties, how do
you assemble them to the venue of the physical education lesson?

Once in the venue, what could be?

.
Your responsibilities just before the start of the lesson,
.
Learners responsibilities just before the start of the lesson,

What could be necessity of these responsibilities?

Lesson in progress

Introduction

.
Introductory activities

How do you normally start your lessons?

When conducting a practical physical education lesson, how do you introduce your lesson?

What is the significance of the introductory activities?

Could there be some factors that influence you in the way you select introductory activities?
If yes, which are these factors…? If no, how do you come-up with the activities?

Why do you think it.s important to consider these factors?

How do you organize your learners in relation to your position during this part of the lesson?

Briefly elaborate why you believe it.s necessary to organize them in way you have said.

What are your main activities during this part of the lesson?

How do you involve your learners with physical and health disabilities in the introductory
activities?

In circumstances where a learner may have a difficulty in performing an introductory
activity/ies, how do you intervene?

How do you see to it that your learners with physical and health disabilities take-part in these
activities?

How do you select the equipment to be used in this introductory part of the lesson?

What could be the reasons behind your selection criteria?

Incase a learner may a difficulty in using an equipment, how do you intervene?

Lesson Development

.
Class skill/ activity

What do you say could be the objective of the class skill/activity?

As you teach the new skill/ lesson activity, how do you organize your learners?

Why do you think it.s necessary to organize in the way you have said?

Briefly describe your procedure/s in teaching a class skill/activity?

How do you interact with learners with physical disabilities as you teach the class skill?

In case you are unable to demonstrate how to execute a skill, how do you teach it?

How do ensure the learners get your instructions as you intend?

How do you involve your learners with physical and health disabilities as you teach the new
skill?

How do you motivate your learners in learning the new skill?

How would you know a learner has a difficulty in executing the new skill?

In such a case how do you respond?

In case the new skill is too complex for a learner/s to execute, how do handle it?

In your opinion, what could influence you on the choice of equipment to be used for learning
the new skill?

What is the importance of considering such factors?

Where a learner/s may have difficulty in using equipment, how do you intervene?

In case of shortage and/ or lack of equipment, how do you manage such a scenario?

.
Group activities

What do you consider to be the importance of group activities?

For the group activities, how many groups do you have in this class?

Briefly, could you highlight the factors that may have influenced your process of making
these groups?

What is the significance of considering these factors?

What are your main activities during this part of the lesson?

How do you get learners with physical and health disabilities take-part in group activities?

During these group activities, how could you know that a learner/s have difficulties in
performing their group.s activity?

In such cases how do you respond?

How do you come-up with the equipment to be used by each of the group?

How do you ensure that the equipment are suitable to learners with physical and health
disabilities?

For a learner/s that may require individualized equipment, how do you deal with the
situation?

Application

.
Game activity

What do you say could be the significance of a game activity?

How do you come-up with the lesson.s game activity?

How do you organize your learners during a game activity?

Why do you think it.s necessary to organize them that way?

What are your main activities during this the part of the lesson?

Which methods do you use to ensure learners with physical and health disabilities
successfully take-part in a game activity?

How do you motivate your learners with physical and health disabilities in a game situation?

For a learner/s that may have a difficulty in taking-part in a game activity, how do you
intervene?

How do you determine the equipment to be in the game activity?

What is the significance of considering such factors?

Conclusion

.
Final activity

For the final activity, what do you feel could be its objective?

What factors do you consider when selecting the activities for this part of the lesson?

Why do you think it.s important to consider these factors?

How do you organize your learners during this part of the lesson?

Why do you feel it.s important to organize your learners that way?

How do you involve learners with physical and health disabilities in the final activity?

In case/s where a learner/s may have a difficulty to perform an activity, how do you
intervene?

How do you finish your lessons?

How do you evaluate your lesson?

After the lesson, do you consider having some feedback?

If yes, with/ from who,

.
What the significance of such feedbacks?

If no, why do you find feedback as not necessary?

General overview

How would you describe the learning of learners with physical and health disabilities
alongside their peers without, within a physical education environment?

In your opinion what do you feel could be a major objective of a physical education lesson for
a learner with physical and health disability?

How would you describe a successful physical education lesson?

In your own opinion, how do you rate the preference of physical education against other
subjects?

Given a choice, would you pick on teaching physical education?

If either yes or no, why, please explain,

What do you think are the major hindrances in achieving a successful taking part in the
physical education activities by learners with physical and health disabilities?

In your own opinion, what do you feel could be done to necessitate learners successful taking-
part in physical education activities?

Role of significant other

What role does the following play in relation to physical education activates for your class;

.
head teacher
.
other teachers
.
school committee

Benefits

In your opinion, what do you feel could be the possible benefits of taking-part in regular
physical education activities for your learners?

.
Health
.
Social
.
Cognitive
.
Economic

Summary

In a nutshell, how would you describe a typical physical education lesson for an inclusive
class?

In summing up this interview, is there anything you may wish to share or add on top of what
we have discussed?

Thanks, that brings us to the end of this interview. I wish to register my sincere
appreciation for your cooperation, patience and the willingness in providing this kind of
information. I do assure you that it will be used for the intended purposes and that it will be
kept confidential and anonymous. THANK YOU.

APPENDIX: E

OBSERVATION GUIDE

Observation sheet for instructional strategies

Recording procedure

Class: The class observed,

Enrolment: boys……girls…….Total…….

Date: The date of the observation,

Time: The time observation took place, (start, end, and exact time taken)

Venue: Where the observation took place (classroom, hall, open field)

Serial number: serialize each recorded observation series to ease filing and subsequent
reference,

Prior observations

Teachers and/ or learners prior preparation for the lesson, such as, changing into the right
physical education attire,

Venue preparation, such as marking area of play,

Who does it?

Are there equipment / apparatus to be used in the lesson activity?

Where are they placed?

Who does it?

Time taken from class to the venue,

Placement of mobility devices in the field of play,

Specific observation during the lesson

What the
teacher
does Or
say?

How does
the teacher
do it?
explain,
demonstrate,
instruct,

How often
does the
teacher do

this?

To whom is
it targeted
to;
individual,
a group or
the whole

Response
from the
target.

commands

class?

Step 1

Introductory

activities

Step 2

Compensatory

activities

Step 3

Class
activity/skill

Step 4

Group
activities

Step 5

Game activity

Step 6

Final activities

General
comments.....
.....
.....
.....

APPENDIX: F

INTERVEION PROGRAM

DISCUSSION QUESTIONS

SESSION ONE

. How did the teacher interact with learners with physical disabilities?
. How did the teacher foster interaction between learners with physical disabilities and
those without physical disabilities?
. In which way did the teacher facilitate participation of learners with physical disabilities?
. In which way did the teacher adjust the activities and / or games to suit individual leaner.s
needs?
. How did the teacher organize the learning environment to facilitate participation of
learners with physical disabilities?

SESSION TWO

. Are there other methods and not demonstrated in the DVD material that could be used in
facilitating learners with physical disabilities in the physical education lesson?
. In which other ways and not typified in the DVD material could be used to enhance peer
support?
. How else could the learning environment be organized to enhance participation of learners
with physical disabilities?