

**A STUDY OF THE EFFECTIVENESS OF THE PRIMARY SCHOOL
PHYSICAL EDUCATION COURSE TO LEARNERS WITH
CEREBRAL PALSY IN SCHOOLS FOR THE PHYSICALLY
HANDICAPPED IN KENYA**

UNIVERSITY OF NAIROBI
EAST AFRICANA COLLECTION
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By

Jacqueline Onyango

**A Research Project Submitted in Partial Fulfillment of the
Requirements for the Degree of Master of Education in Educational
Administration and Planning of the University of Nairobi.**

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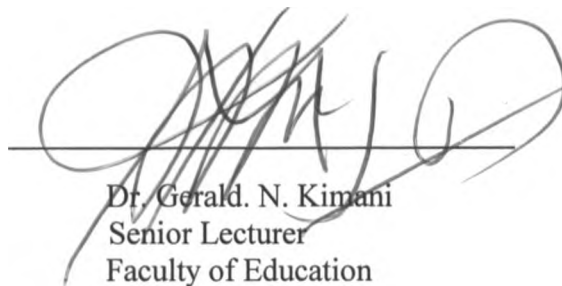
DECLARATION

This research project is my original work and has not been presented for examination in any other university.



Jacqueline Onyango
Student

This research project has been submitted for examination with my approval as the university supervisor



Dr. Gerald. N. Kimani
Senior Lecturer
Faculty of Education

Acknowledgement

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Dedication

I dedicate this work to my loving husband Raymond Philip Onyango for his confidence in me and his unwavering support. It is also dedicated to the memory of my late father, Alexander Austine Chimungeni, and my late mother, Loice Alukhaba Chimungeni, for their inspiration in pursuance of further education, whose slogan “ education is for ever” gave me courage to undertake this course.

Abstract

The study sought to find out the effectiveness of the primary physical education course to learners with cerebral palsy in schools for the physically handicapped in Kenya. The purpose was to find out the teachers' experiences with a view of drawing conclusions which would lead to recommendations for improving the teaching of Physical Education (P.E.) to learners with cerebral palsy. This was done by examining the availability, suitability and adequacy of required resources such as: trained teachers, equipment and facilities, time allocated for a lesson, the P.E. syllabus, textbooks and other relevant materials for cerebral palsied learners. The respondents were requested to state on the basis of their experiences, problems that they encountered and offer suggestions on how future planning and implementation of P.E. can be improved for cerebral palsied learners.

The study was carried out in 9 special schools for the physically handicapped and 3 units in regular schools, which have cerebral palsied learners, and are registered with the Ministry of Education Science and Technology. The study sample consisted of 141 teachers and 11 head teachers. Four schools and two units were used for observation and completion of the checklist on availability and adequacy of P.E. equipment and facilities

The study was a survey utilizing questionnaires, observation schedules and a checklist. Data obtained from the research instruments was analysed using frequencies and percentages. Based on the findings it is evident that physical education is not effectively taught. A majority of the teachers are not trained to teach physical education to learners with cerebral palsy. They therefore experienced difficulty in interpreting the regular

curriculum, and adapting it to the needs of the learners. This led to inability to achieve the stated objectives. The facilities and equipment required for teaching these learners were found to be inadequate and unsuitable. Further, the time allocated for P.E. lessons was also found to be inadequate in relation to the handicaps of the learners. The teachers also experienced a heavy workload due to the multiplicity and variation in the learners handicaps.

In conclusion, it was observed that the teachers were constrained by the curriculum, the workload and inadequacy of facilities and equipment. Recommendations made were that

- a) the Kenya Institute of Education should develop a curriculum suited to the needs and capabilities of learners with cerebral palsy
- b) the Ministry of Education Science and Technology should assist in the provision of relevant facilities and equipment for learners with cerebral palsy in special schools
- c) specialists in the area of physical education should endeavor to write, publish and supply relevant textbooks and teacher's guides
- d) the Ministry of Education Science and Technology should give teachers special training in teaching of P.E. to learners with cerebral palsy.

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ABBREVIATIONS

AAHPERD- American Association for Health, Physical Education, Recreation and Dance

CP- Cerebral Palsy

UN-United Nations

MPCP-Mentally and Physically Challenged Persons

KIE-Kenya Institute of Education

KNEC-Kenya National Examinations Council

KISE-Kenya Institute of Special Education

WCCP-World Commission for Cerebral Palsy

P.E-Physical Education

W.C.E.F.A-World Conference on Education For All

PH-Physically Handicapped

CHAPTER ONE

INTRODUCTION

1.1 Background

The World Conference on Education For All (W.C.E.F.A.) held in Jomtien in 1990 presented a global consensus on an expanded vision of basic education. Emphasis was laid on provision of equal educational opportunities to all population groups with the aim of reducing the existing disparities. These opportunities are to be provided to all members of society regardless of gender, physical or intellectual differences, economic status or geographical location (EFA News, 1991 Issue VI).

Subsequently in December 1993, the UN General Assembly adopted the United Nations Standard Rules on Equalization of Opportunities for persons with Disabilities. In this declaration, the states recognized the principle of equal educational opportunities at all levels for children, youths and adults with disabilities. This was also in recognition of the 1948 Declaration of Human Rights, when the United Nations declared education as a basic human right of all people. While disabled persons in Kenya have same fundamental rights as their fellow citizens, provision of educational opportunities has not always been favorable to them (K.I.S.E. Bulletin Volume 4, 1998).

Of the 1.8 million handicapped children of ages 0-19, only 5.5% (100,000) had been assessed. Among those assessed, 22% (22,000) are enrolled in both regular and special schools (National Development Plan 2002-2008). The low enrollment was due to the

high cost of providing adequately trained teachers and other support personnel, specialized equipment and instructional materials, appropriate physical facilities and medical services (National development, Plan 2002-2008).

Exceptional persons are “those for whom the presence of a physical, psychological, cognitive or social factor makes difficult the realization of their needs and full potential. They are classified as exceptional because proper attention to their needs requires special services and resources beyond those required for other children. Their special needs are created by measurable differences in their development and behavior. These differences may present themselves in terms of academic performance, social adjustment, physical capabilities, language, vision and hearing. Thus, they deviate to a marked degree from the average or normal child (Wayne and O’Connor 1979 in Gearheart, Weishan and Gearheart, 1988). For these children skilled intervention and special care are needed in order to help them realize their potential (Suran and Rizzo, 1979 in Brennah, 1985). Special schooling becomes necessary when there is need for special treatment, special equipment or modified buildings, specialized methods of teaching, or creation of a particular kind of learning environment (Verhaan & Connor, 1981 in Dunn and Fait, 1985).

Cerebral Palsy is a condition that stems from brain injury, including a number of types of neuro-muscular disabilities characterized by disturbances of voluntary motor function (Bleck, Donald and Nagel, 1982). The degree of motor impairment may range from serious physical disability to little physical disability. Diagnosis is related to the amount

of dysfunction and associated motor involvement. Learners with cerebral palsy are categorized under the physically handicapped since their disability is related to mobility. However, some have to be placed in the schools for the mentally handicapped if the severity of their conditions causes mental retardation (Auxter and Jean, 1985).

Children with moderate to severe cerebral dysfunction often are under the care of a physician and a physical therapist. The “clumsy child syndrome” is a catch- all term for the lack of co-ordination of some children in the execution of certain motor tasks (Arnheim and Sinclair, 1975). This deficit may be attributed to heredity, central nervous system disorder resulting from disease or injury, perceptual motor dysfunction, sensory impairment and emotional problems, all contributing in part or in combination to a child’s lack of co-ordination. Lack of motor development and coordination makes the cerebral palsied child unable to keep up with play activities of normal peers. Inability to achieve success in motor performance may contribute to already existing anxieties and frustrations resulting from inability to communicate easily and to succeed in other endeavors (Arnheim and Sinclair, 1975).

Throughout history, physical activity has been accepted as a remedial technique and its preventive value to mankind has been established. Handicapped persons are no exception. Over the years, it has been recognized that education was the key to independent living for persons with disability (Bucher and Wuest, 1987). Physical Education (P.E.) may help student’s correct physical conditions that can be improved through exercise, and assist each individual student to achieve the highest level of

physical fitness within his/her limitations. It also helps students to identify physical activities and sports suited to their abilities and interests and provide each student with positive experiences, with a view toward developing a positive self-concept and feeling of worth (Bucher and Wuest, 1987).

Physical Education (P.E.) is one of the subjects taught in the primary and secondary schools in Kenya. It was made compulsory at both levels by a Presidential Decree (The Sunday Standard of 10th August 1980, P5. column 1.1). Subsequently, it was also made compulsory in both primary and diploma teacher training colleges. The emphasis of the subject is to facilitate the acquisition and knowledge of sports related skills in an educational setting, and thus contribute to the educational domains through movement.

Like all other subjects, Physical Education has a standardized curriculum that is used in the country at primary level. It is allocated 5 lessons a week for standard 1-3, and 4 lessons a week for standard 4-8. Unfortunately the subject has been plagued with a negative attitude from teachers and administrators, as it is not examined at national level. Consequently, the lessons allocated for physical education are used to teach other subjects that are examined. The objectives of the primary school Physical Education are that, by the end of the primary school cycle, the learner should be able to:

- a) develop physical and neuromuscular skills
- b) perform skilful and efficient movements through physical and mental coordination
- c) use movement as a medium of expression

- d) appreciate and enjoy movement for its own sake with and without apparatus
- e) create a desire for development of a variety of skills for recreational values and positive use of leisure time
- f) pursue physical activity for health, fitness and general body growth and development
- g) appreciate and participate in and develop both national and international sports and dance for preservation of own and other cultures
- h) develop inter-personal and social skills through physical activities
- i) develop self-discipline through understanding and application of rules and regulations in games and sports
- j) create and develop movement skills and patterns
- k) improvise and use a variety of equipment and facilities in different ways
- l) appreciate and explore the environment
- m) identify, nurture and develop individual talents in specific sports
- n) develop positive attitudes towards physical education and sports as a career
- o) develop awareness of safety skills and preventive measures in different situations

The success of the P.E. program is pegged on the achievement of the stated objectives.

The special schools adapt their curriculum from the regular primary school syllabus, to suit the specific needs of their learners. Thus, they are expected to achieve the laid down objectives with respect to the individuals they teach. The varied handicaps of learners with special needs, including learners with cerebral palsy do not allow them to participate in the activities laid down for the regular learners. Therefore, Adapted Physical Education

for cerebral palsied learners is a complimentary program to the physical therapy, as it provides opportunities in play for the utilization of the motor movements, which have been established. It also helps in developing basic sports skills within the limitations of each learner (Arnheim and Pestolesi, 1988). This study sought to evaluate the Physical Education program being offered to learners with cerebral palsy, with a view of establishing whether the above mentioned aspects are adequately catered for, to enable the learner benefit from the program.

1.2 Statement of the Problem

Physical Education is a compulsory subject in all primary schools, both regular and special. Nevertheless, most of the time it is not taught because it is not examined at national level. This denies the learners the opportunity to exercise and acquire basic sports skills that are essential for the proper acquisition of more advanced skills (Needs Assessment Survey).

In the progress towards equalized educational opportunities for all, the handicapped have not always received due consideration (Hallahan and Kaufman, 1991). Learners with cerebral palsy are no exception. Cerebral palsied learners experience difficulties in motor performances and coordination. Participation in P.E. plays a major role in enhancing their efficiency in movement and providing them an opportunity to keep fit while at the same time, enabling them to acquire skills that are useful for their functional growth and development.

They therefore require a specialized individualized curriculum, geared towards meeting their deficiencies. The Physical Education program for learners with cerebral palsy at primary school level has to be adapted from the regular curriculum, to suit the specific needs of each learner. This is done by adaptation, which requires the teacher to have a clear understanding of the motor, cognitive, health and medical attributes of individuals with cerebral palsy. Unfortunately a majority of the teachers expected to adapt this curriculum are not specially trained to teach P.E to cerebral palsied learners.

While the curriculum for regular primary schools is standardized, there is no standardized adapted physical education syllabus or guidelines that can be used by the special schools to teach learners with cerebral palsy. It is at the discretion of the teachers, who have different levels of training, to interpret the regular syllabus and decide on the necessary adaptations to suit the various categories of learners. This creates a limitation in the achievement of the expected outcomes for this special group of learners(Auxter and Jean, 1985).

1.3 Purpose of the Study

The study aimed at finding out the effectiveness of the existing Physical Education course to learners with cerebral palsy. The results of this study will lead to recommendations that will help improve the planning and implementation of the physical education program to learners with cerebral palsy in Kenya.

1.4 Objectives of the Study

The objectives of this study were to investigate:

- a) whether the curriculum being implemented is relevant for learners with cerebral palsy
- b) whether there are adequate facilities and equipment for teaching Physical Education to learners with cerebral palsy
- c) whether the facilities and equipment used are adapted to suit the needs of the learners with cerebral palsy
- d) whether there are qualified personnel to teach Physical Education to learners with cerebral palsy
- e) whether the time allocated for physical education is adequate
- f) the opinion of the teachers on the amount of work they have in Physical Education
- g) whether the teachers are able to cover the syllabus as required
- h) whether the multi-disciplinary approach is being utilized in preparation of the Physical Education program for cerebral palsied learners
- i) the problems the teachers are faced with when implementing the Physical Education curriculum to learners with cerebral palsy.
- j) what suggestions the teachers, may have on ways of improving the teaching of Physical Education to learners with cerebral palsy.

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1.5 Research Questions

The study sought to answer the following questions:

1. What is the perception of the teachers on the relevance of the current primary school Physical Education curriculum being offered to learners with cerebral palsy?
2. Are the available facilities and equipment adequate for teaching these learners?
3. Are the facilities and equipment adapted for learners with cerebral palsy?
4. Are the available personnel trained to teach P.E. to learners with cerebral palsy?
5. Is the time allocated adequate to effectively teach Physical Education to learners with cerebral palsy?
6. What is the teachers' perception of their workload?
7. Do the teachers get any assistance from other professionals in planning and teaching of P.E. to cerebral palsied learners?
8. What problems do the teachers encounter when teaching learners with cerebral palsy?
9. What suggestions can the teachers, give to help improve the teaching of Physical Education to learners with cerebral palsy?

1.6 Significance of the Study

There have been no studies carried out on the teaching of physical education to learners with cerebral palsy. There is limited information that can be used in planning and implementation of the Physical Education program to cerebral palsied learners. Learners with cerebral palsy experience problems related to movement and coordination, and need

a lot of physiotherapy to maintain their motor abilities. Physical Education if well administered provides the opportunity for learners to engage in a variety of movement activities that greatly compliment the physiotherapy. Since physical education is compulsory in all educational institutions, it was anticipated that the study would yield information that can be used by policy makers and educationists in making policy decisions, preparing relevant curriculum, improving instructional procedures, establishment of appropriate facilities and provision of necessary equipment for implementation of Physical Education to learners with cerebral palsy in Kenya.

1.7 Limitations of the Study

The major limitation was finding dated information on cerebral palsy. Most of the reference materials in the libraries and relevant institutions concerned with cerebral palsied learners were written in the 80's and therefore not current. The references located on the internet were found not exhaustive as a summary of the book was given without any details.

1.8 Delimitations of the Study

The study only covered the primary schools and units for the physically handicapped, which have learners with cerebral palsy. These are registered by the Ministry of Education Science and Technology as public institutions. There are other institutions such as homes and those of the mentally handicapped, which have cerebral palsied learners but they were not included in the study.

1.9 Assumptions of the Study

The study was based on the assumptions that the respondents would be available and willing to give the required information to carry out the study.

1.10 Definition of Terms

The following terms used in this study are defined as follows:

Athetosis: refers to a disorder chiefly of childhood marked by slow, serious and continual change of position of the fingers, toes, hands and other parts of the body usually due to brain lesion.

Cerebral Palsy: refers to a non-progressive disorder of movement or posture and coordination that begins in childhood and is caused by a mal-functioning or damage to the brain.

Congenital: refers to a defective condition that exists from birth

Contracture: refers to a condition of the muscle characterized by fixed high resistance to passive stretch and generally caused by prolonged immobilization

Diplegia: refers to major involvement in the lower limbs and minor involvement in the upper limbs

Disability: refers to the kind and degree of impairment, which results in some loss of capacity or function due to a physical disorder.

Exceptional: refers to a condition that is so different from the average or the expected that special methods materials, and settings must be employed to promote the child's progress.

Exceptional children: refers to those whose characteristics are so different from most children's that the usual educational programs of the public schools are not appropriate for them

Handicap: refers to the difficulty a person has when required to function in the usual environment.

Hemiplegia: refers to paralysis of one side mainly the upper and lower limb on the same side

Mainstreaming: refers to placing handicapped and non-handicapped children together for education.

Mobility: refers to one's ability to move from one place to another.

Monoplegia: refers to paralysis of one limb only

Motor control: refers to the process by which the brain and the muscles work together to produce coordinated skilled movement.

Occupational therapy: refers to therapy directed at upper extremities emphasizing activities of daily living

Paraplegia: refers to paralysis of the legs and the lower part of the body

Reflex: refers to a stereotyped movement produced in response to a particular sensory input.

Related services: refers to services necessary in order for a handicapped child to benefit from special education such as transportation, physical and occupational therapy

Special Education: refers to a specially designed instruction intended to meet the particular needs of exceptional children who require a special environment, special medical treatment, special methods of teaching or a special curriculum.

Triplesia: refers to paralysis of three limbs usually one upper limb and both lower limbs

Quadriplegia: refers to paralysis of all four limbs

Physically Challenged: refers to those with motor difficulties that interfere with the normal process of living and progress in the regular educational program

1.11 Organization of the Study

The study is organized into five chapters. Chapter one comprises of background information, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, limitations of the study, delimitations of the study, assumptions of the study, and definitions of terms. Chapter two consists of the literature review. Herein discussed are the concept of cerebral palsy, classification and characteristics of cerebral palsy, effects of cerebral palsy, educational implications, importance of Physical Education, related studies and the conceptual framework. Chapter three comprises of the research methodology in which there is the research design, target population, sampling and sampling procedure, validity and reliability of the research instruments, research instruments, data collection procedures and the data analysis procedures. Chapter four contains the data analysis and interpretation. Chapter five consists of a summary of the findings, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter has been divided into sub-sections namely; the concept of cerebral palsy, classification and characteristics of cerebral palsy, effects of cerebral palsy on individuals, educational implications, and importance of Physical Education to learners with cerebral palsy

2.2 The Concept of Cerebral Palsy

Several definitions and descriptions of cerebral palsy have been advanced by various individuals and organizations. The World Commission for Cerebral Palsy (WCCP), stated cerebral palsy as “a persistent but not unchanging disorder of movement posture due to the dysfunction of the brain, excepting that caused by progressive disease, present before its growth and development are completed” (WCCP 1954 in Sherrill 1981). Bleck (1954) in Brown 1989, defines cerebral palsy as a group of conditions characterized by motor problems that result from damage to the brain early in the development process before the age of 5 years. It is a non-progressive condition that will not become worse. Bartshaw and Perret (1986) in Ndurumo (1993) define cerebral palsy as a condition characterized by paralysis, weakness, in coordination and/or motor functions because of damage to the child’s brain before it is matured.

In summary, Cerebral palsy is a chronic non-progressive neurological disorder of movement and posture caused by a defect or lesion of the immature brain and

accompanied by associated dysfunctions. It is not hereditary, contagious or progressive. The disorder varies from mild, generalized clumsiness or a slight limp, to severe which is dominated by reflexes unable to ambulate except in a motorized wheelchair, inability to speak, and almost no control of motor functions (Sugden & Koegh (1990); Tecklin (1989), Thompson et. al; 1983).

Cerebral Palsy is caused by various factors that affect the child before birth, during birth and after birth. These include infections of the mother during pregnancy, lack of oxygen to the foetal brain, shock due to blood loss or knotting of the umbilical cord, Rh incompatibility between the mother and the foetus, prematurity or metabolic disorders, birth injury (trauma) to the infant skull; foetal asphyxia, anoxia or hypoxia; head injuries brain infections and brain hemorrhages (Perlstein and Barnett (1952), Baumeister, Kupstas and Klindworth ,1990). About 90% of such brain damage occurs before and during birth. About 10% of cerebral palsy occurs post-natally with estimates ranging from 6% to 23% (Stanley & Blair, 1984).

2.3 Classification and Characteristics of Cerebral Palsy

The types of movement disorder that occur in cerebral palsy as classified by the American Academy for Cerebral Palsy (Minear, 1956 in Grove 1979) are

- a) Dysfunction depending on motor patterns referred to as “hard signs”
(physiological classification),
- b) On the basis of the limbs affected

- c) According to the anatomical part that contributes to the palsy (neuro-anatomical classification)

The physiological classification is characterized by three main types of cerebral palsy. These are spasticity, athetosis and ataxia. Spasticity is the most common hard sign and largest grouping of people with cerebral palsy. 65% of people with cerebral palsy have this as the predominant type. It is characterized by contracted muscles that prevent, restrict or inhibit intended movements. It displays abnormal muscle tightness and stiffness characterized by hypertonic muscle tone during voluntary movement (Guyton, 1981).

Abnormal postures associated with spasticity are the scissors gait and the hemiplegics gait. In the scissors gait, the legs are flexed and adducted to the hip joint, causing them to cross alternately in front of each other with the knees scrapping together. In the hemiplegic gait, both arm and leg on the same side are affected. The affected leg is rigid and swings from the hip joint in a semi circular manner by muscle action of the trunk. The individual tends to lean to the affected side and the arm on that side is held in a rigid semi flexed position (Guyton, 1981).

Athetosis is the second most severe type of CP. 25% of cerebral palsy subscribe to this type. It results in uncoordinated movements of voluntary muscles, taking the form of worm-like motions that involve the trunk, arms, legs or tongue. It displays constant, unpredictable and purposeless movement caused by fluctuating muscle tone that is

sometimes hyper-tonic and sometimes hypo-tonic. The movements are unrhythmic, uncontrollable and involuntary. Involuntary facial movements or grimaces are common, accompanied by impairment in the muscular control of hands, speech and swallowing. Posture is therefore unpredictable (Bobbath, 1980).

The head is usually drawn back but may roll unpredictably from side to side; the tongue may protrude and saliva drool from the chin. Lack of head control causes problems of visual pursuit and focus, that impair the ability to perform hand eye accuracy tasks. Constant movement of the fingers and wrists renders fine muscle coordination almost impossible. They walk with a staggering gait, the trunk and shoulder girdle leaning backward to prevent collapsing (Bobbath, 1980).

Ataxia is the third type of CP. About 10% of cerebral palsy are diagnosed with this. Ataxia means lack of sense of balance, lack of sense of position in space, and uncoordinated movement, which impairs the ability to maintain balance. It is a combined disturbance of balance and coordination generally characterized by hypotonia or low postural tone and poor muscle tone. There is no paralysis or involuntary movement. Voluntary movements are clumsy and uncoordinated with under reaching and over reaching common. The individual is unstable, and this condition causes weaving about during walking or gross motor activities such as running. The movement is characterized by irregular steps, unsteadiness and the tendency to reel to one side. To compensate for extreme unsteadiness of gait the arms are typically overactive in balance-saving

movements. The individual experiences difficulty in judging how high or low to step. (Bleck, 1982).

The second form of classification distinguishes cerebral palsy groups in terms of the limbs that are affected. They are classified as paraplegia (only one leg), diplegia (legs affected more than arms), quadriplegia (all four limbs), hemiplegia (arm and leg on the same side-one half of the body), triplegia (three limbs) and monoplegia (one arm or leg).

The third form of classification, neuro-anatomical attempts to sort out the types of cerebral palsy according to the area of presumed brain malfunction. The terms used often appear in neurological and orthopedic examinations of handicapped children. According to this system CP is divided into three large classes pyramidal, extra-pyramidal, and cerebella (Terver and Bleck, 1979). The term pyramidal is derived from the pyramidal arrangement of the efferent (motor) nerve fibres that descend from the brain surface (cerebral cortex) to the limbs. They function in the voluntary control of the limb muscles. Damage to such cells and their nerve fibres (tracts) results in spastic paralysis. The term extra-pyramidal refers to damage to any part of the brain other than the one described in pyramidal. The damage occurs in the large collection of cells located in the central portion of the brain (basal ganglia). These disorders of movement (kinesia) are often called dyskinetic cerebral palsy leading to athetosis. The cerebellum is the "little brain", whose function is to coordinate movement, to provide sense of position in space and to maintain equilibrium. Damage to this part of the brain is reflected in ataxia (Bleck, 1982).

Though CP individuals are classified on the basis of motor involvement, damage to the brain also involves the sensory and psychological impairments. The inability of many cerebral palsied individuals to perform motor skills is a combined problem of impaired muscle coordination and perceptual motor impairments. Such handicaps could include mental retardation, hearing loss, vision loss, perceptual deficit or speech and language disorders. Inhibited respiratory muscles create difficulty in breathing and breathe control. If the learner has speech difficulties, it may be necessary to work out a system of cues and signals for communication (Kaufman, 1991).

2.4 Effects of Cerebral Palsy on Individuals

2.4.1 Physical Functioning

Cerebral palsy may constrain an individual's physical functioning. Kirk (in Stevens and Heber 1964), observed that cerebral palsied children have more problems of vision, hearing and motor co-ordination compared to average normal children. Bunker (1978) also observes that these children have clumsy movements, lack control over their movement and some may not be able to move at all. Studies cited in Payne et. al, (1977) have also shown that cerebral palsied individuals accumulate more fat in their bodies than the average normal child. This is an indication that obesity is a common feature among the cerebral palsied and is likely to affect the cardio-vascular functions of the individual. Ndurumo (1993), indicates that the gross motor development of cerebral palsied individuals has been rated as significantly low compared to their non-retarded counterparts. In cases where the cerebral palsied child cannot perform physical tasks that

are similar to the non-handicapped child, one may need to change the task requirements (Robinson and Robinson, 1978).

2.4.2 Intellectual Functioning

Motor handicaps tend to extend into areas beyond that which is directly affected by the handicapping condition. When the brain is damaged, sensory abilities, cognitive functions and emotional responsiveness as well as motor performance are usually affected. Some individuals with CP have normal or above average intellectual capacity and a few test within the gifted range. The average tested intelligence of children with CP is however clearly lower than the average for the general population (Bartshaw and Perret, 1986 in Ndurumo 1993). When the distribution of IQ of children with Cerebral Palsy is compared with the expected intelligence curves of normal children, it is apparent that approximately 75% of children with Cerebral Palsy have some degree of mental retardation. In studies of large populations, serious mental retardation was present in at least 50%. Athetoid children are less likely than spastics to have mental retardation. Ataxics and spastic hemiplegics have a better intellectual prospect than any in the whole group. On average, 25% of the children with cerebral palsy have normal or above-normal intellects (Kauffman, 1991).

Traditionally, the view of a child's cognitive ability has been based on the assumption that both handicapped and non-handicapped children follow the same sequence of development, though the handicapped child's rate of development may be slower (Robinson and Robinson, 1978). This hypothesis has been confirmed in studies with

children whose delayed motor development was the result of structural, sensory or chromosomal deviations. Decarie (1969) found that children with missing limbs were able to make use of other parts of the body to perform motor activities.

There are, therefore, important considerations to be made in teaching cognitive skills to physically handicapped children. Jens and O'Donnel (1982) in Nichols 1986, support the idea that in most cases it is necessary to adapt procedures or materials, so that the physically handicapped child can accomplish a task. In cerebral palsied learners, this is especially so when the learners suffers physical dysfunction but no mental incapacitation (retardation). Though they may understand how to perform the activity, modification needs to be done to enable them perform within their physical limitation.

2.4.3 Affective Responses

Affective responses of the physically handicapped child may be inhibited by abnormal tone (Morris, 1978). According to Gallagher, Jens and O'Donnel (1983) in Nichols 1986, the physiological component is an important consideration in the child's ability to respond affectively to his environment. They looked at the responses of 14 multiple-handicapped children. The results indicated that the child's ability to express laughter was related to his physical status. The more abnormal the child's postural tone, the harder it was for the child to express laughter. They thus concluded that postural tone influences the child's ability to respond affectively. Athetoid cerebral palsied children for instance, commonly elicit involuntary facial movements and may express their joy from achievement by grimacing and throwing their arms uncontrollably (Bobbath, 1980).

2.5 Educational Implications

Physical disabilities interfere with a child's educational progress in two ways. First it keeps the children from having certain educational experiences such as outdoor play and travel. Secondly, they prevent children from manipulating educational materials the way non-disabled children can. Special education teachers seek ways to make the child's experience as normal as possible and to devise efficient alternative ways for the child to respond to educational tasks (Kneedler, 1984).

Children who have moderate or severe difficulty in mobility and manipulation but no other problems may need a little extra help from ancillary staff, but otherwise can be absorbed into all normal school activities and the additional help may be gradually withdrawn. If they are actively mobile in wheel chairs, simple structural alternatives may need to be made to accommodate them. For cerebral palsied children who have learning, other sensory difficulties or who are very limited in the movements, learning requirements may be so complicated that a fully specialized curriculum and environment may be needed in a special school for the physically handicapped (Kneedler, 1984).

Winnie A. Bachman's study of 216 persons who had attended orthopedically handicapped schools in California (63% of whom had CP), indicated that, "traditional objectives for normal children may be inappropriate and unachievable for some handicapped students. As a result of her study she concludes that the use of a team approach for each student cannot be over-emphasized. It was important that the educational unit be in synchrony with, and supports the medical therapy unit. She

recommended that for CP learners much time be spent in learning activities of daily living, and achieving independent mobility (Brown, 1989).

Thus when planning and implementing educational programs for cerebral palsy, the multi-disciplinary approach is a necessity. The extent of participation of the team depends on the degree of cerebral palsy and physical characteristics. The physician may prescribe drugs for the patient to relax and to control the convulsions as well as treat overall health problems. The physical therapist is primarily concerned with the lower extremities, posture movements and prevention of contractures (permanent muscle shortening because of lack of neuro-stimulation and muscle use). He/she works to facilitate motor development to prevent or slow orthopedic problems and to improve posture and positioning, so that the child may benefit from intervention activities, uses creative educational and recreational activities to enhance self help skills (Gordon and Mckniley, 1980).

The occupational therapist is primarily concerned with the upper extremities and with the routine activities required for daily living. Many of these routine activities may be seriously limited for the cerebral palsy because of lack of muscle coordination. A specialist in adaptive physical education to plan a program of activity designed to help the student make maximum use of whatever physical abilities he/she has for recreation. Often the occupational therapist may assist in modifying and adapting educational materials to be used by the CP learner. A well-trained aide is essential in assisting the adapted P.E. specialist in implementing a specialized program. The teacher aide assumes

an instructional role by assisting in the performance of activities under the guidance of the teacher. He/she is very useful in watching out for the learner's safety in order to help the learner benefit from the program (Fait, 1972).

Physically handicapped learners need special equipment to aid in movement such as braces, crutches or wheelchairs. Braces and other mechanical devices that provide support and allow children to walk are usually prescribed by medical doctors. There are three types of braces-corrective, control and supportive. Corrective braces are used for prevention and correction of deformity during the pupil's rapid growth period. The tendons do not keep pace with the growth of the long bones causing the heel cords to tighten. Corrective braces prevent or delay surgery that may be required. Control braces are used to eliminate purposeless movements or to allow movement in the desired directions. Support braces are used to provide the needed assistance in standing. Pupils in wheelchairs may not have adequate muscle strength to control and support the spine. The body brace may then be used to support the spine. Crutches are used to stabilize the trunk and to provide support while standing and walking. Wheelchairs are most commonly used by students with severe crippling conditions (Seaman and Depauw, 1982).

Opportunity for adaptation should be available in any educational program to help the cerebral palsied to achieve their full potential. However, it is essential that it be done within the limitations of professionalism to secure the safety of the already handicapped learner. Provision of a conducive learning environment with the right facilities and equipment and the right personnel is greatly beneficial to cerebral palsied learners.

2.6 Importance of Physical Education

Physical Education is an educational process that has as its aim the improvement of human performance through the medium of physical activities selected to realize this outcome (Bucher and Wuest, 1987). It is that phase of education concerned with the teaching of skills, acquisition of knowledge, and development of attitudes through human movement. It also includes refinement of motor skills, the development and maintenance of fitness for optimal health and well-being, the attainment of knowledge and the growth of positive attitudes toward physical activity. It is based on a common core of learning experience planned on a sequential arrangement appropriate to the individual's stage of social, emotional, intellectual and psychomotor development. Education is brought about as the individual interacts with the surrounding physical environment (Bucher and Wuest, 1987).

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Research findings indicate that physical education is important to the lives of the physically handicapped persons (Brunker, 1978). He noted that through physical education, the physically handicapped gained a fuller life because of gaining possession of the needed physical stamina to cope with everyday situations. Swimming for instance, can offer the individual with cerebral palsy an opportunity to gain new responses in movement to improve skills that will help mobility on land, and to achieve physical skill and accomplishments impossible out of the water (American National Red Cross, 1974). The need to keep the physically handicapped fit was explained by a young paraplegic man as follows:

“ I must keep fit so that I can keep my independence. Keeping my arms strong means that I can lift my wheelchair to my car ” (Levite, 1982)

According to Grove (1979) physical education plays an important part in helping the cerebral palsied children to attain neuro-muscular habits in tasks of daily living. It improves the health and well-being of the severe cases in terms of balance, coordination and concentration. According to Brown (1975), sport represents the most natural form of remedial exercise. Exercise is invaluable in restoring the physically disabled persons strength, coordination and endurance. This therefore brings out the immense therapeutic value of physical education to physically handicapped persons. Brown also observes that:

it was the introduction of sport as an integral part of the clinical treatment which helped tremendously to restore not only the physical strength of those unfortunate victims of war but also their activity of mind, self-dignity, self-confidence and comradeship which gave them a completely new outlook towards life”

Physical Education contributes greatly in providing social contact and interaction among learners, the handicapped included. According to Levite (1982), the effects of an impairment can either be increased or diminished by the environment. Physical Education also provides an opportunity for peer group interactions, acceptance and learning of socially acceptable behavior. It therefore helps to eliminate the feeling of isolation and underachievement which most handicapped are resigned to because of their disability. It also gives a sense of achievement. The opportunity to do something well, and to enjoy the feeling of success is of special importance to an individual with an impairment (The

American Red Cross, 1977). Pomeroy (1964) in Cratty (1970) further stresses this point when he acknowledges,

“ most of the value of group activity for the handicapped is due to the fact that achievement on the part of the group is shared by individuals members, some of whom may not be able to gain individual success. This increases the individuals regard for their worth and abilities. ”

The same benefits that accrue to the normal child from participation in a good physical education program are needed by and can be gained through physical education by Cerebral Palsied learners. A different emphasis may be given on the objectives of the program for special schools, thus the emergence of Adapted Physical Education. The acquisition of enough motor skills to take pleasure in with others makes a big difference, an objective that should take precedence over all others while teaching P.E., to these learners. The movements taught in therapy are basic to sports skills such as ability to grasp and release with the hands, extend and flex the arms, bend and straighten at waist to walk. If these basic movements are developed to some degree, the cerebral palsied learner can successfully participate in many games, sports and dances.

2.7 Related Studies

In various research studies that have been carried out both in Kenya and other countries, several factors have been reported to affect and constrain the teaching of Physical Education. Korri (1970), in her study on, “Instructional Problems Encountered by Women Physical Education Teachers and their Relation to Teaching Competence” in

Minnesota identified the following problems: inadequate facilities, large numbers, providing for individual differences, interest and abilities of the learners. Scriven (1973) observed that the most frequently mentioned problems facing physical education programs in developing countries were lack of facilities like gymnasias, sports fields, playgrounds and playing fields.

Madeje (1981) conducted an evaluation study on the implementation of the P.E. program in Dar-es-salaam city primary schools. He used interviews, observations and questionnaires on Ministry of Education administrators, teachers, pupils and parents. From his findings he concluded that the unavailability of physical education equipment and facilities, lack of training of the physical education teachers, negative attitude of some teachers, city education administrators and parents contributed a lot towards poor implementation of physical education programs in Dar-es-salaam.

Studies by Kiganjo (1987), Muniu (1986) and Kane (1974) have further documented the problems attributed to time factor which affect teaching and learning of physical education. Time factor in this case means either the length of the lesson or the number of physical education lessons in a week or a combination of both. Okoko (1999), in her study on constraints encountered by teachers in implementation of physical education to the mentally retarded in Nairobi cited problems including an unsuitable syllabus, degree of handicapping condition limited time, legal liability for accidents, range of individual abilities in class, negative attitude of administrators and negative attitude of the pupils towards physical education. This study seeks specifically to investigate the effectiveness

of the P.E. curriculum to learners with cerebral palsy as no other study has been done in this area.

2.8 Conceptual Framework

The conceptual framework of this study is based on the concept of Physical Education relating to modifying games and sports, that is often applied to learners with special needs. It can be applied at any level as long as the level of ability of the learner is taken into consideration. This means that the curriculum and the teacher should be flexible enough to accommodate all learners as individuals and to make modifications accordingly.

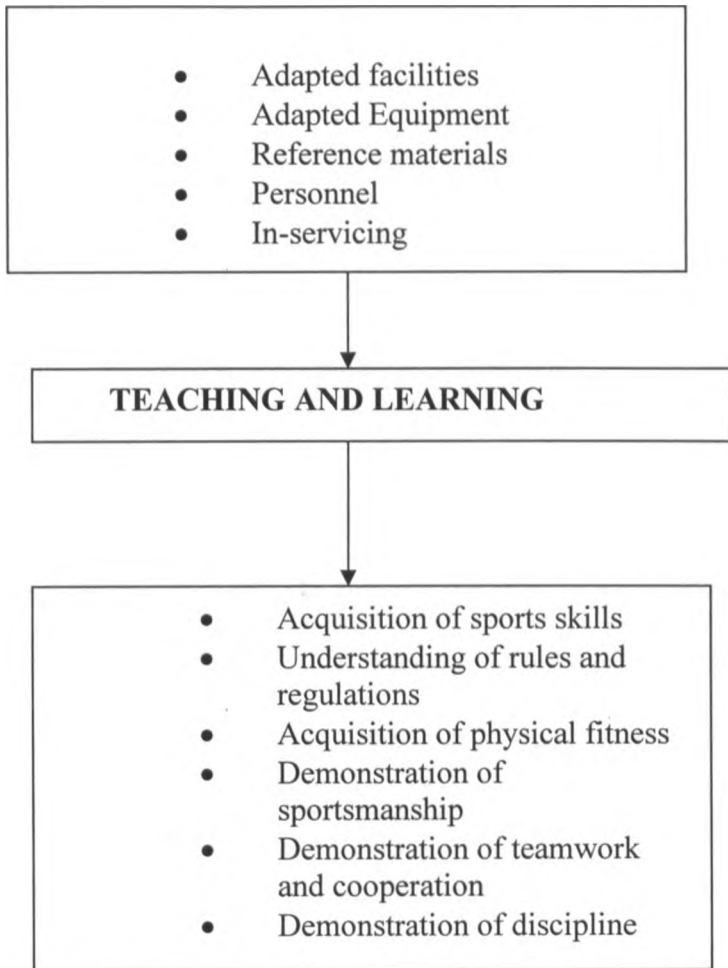
The handicapped child is not entirely like regular learners yet he/she is not entirely different. Though they may not be able to perform the activities that regular learners perform, they require to engage in physical exercise for their health and development. Cerebral palsied children often have difficulty learning chronologically age appropriate skills for sports and games. They often are failures at play (Kneedler 1984). This chain of failure may be compounded and cause feelings of inferiority and a fragile ego, thus limiting their interest in group participation and socialization.

The ultimate goal of physical education for handicapped children, cerebral palsied included is to equip them with motor skills that contribute to their development and independent living. It is therefore important to clearly distinguish the levels of function that contribute to acquisition of various sports skills which are; basic input functions,

general abilities and specific skills. Basic input functions depend on the operation of the sensory input systems such as the reflexes, kinesthesia and tactile. Before information can reach the central nervous system for processing, these systems must be operational, otherwise purposeful movement is inhibited.

Abilities related to skills include perceptual-motor, physical and cognitive proficiency. These include aspects of balance, directionality, laterality, body image and spatial awareness, strength and flexibility. The skills are motor behaviors and are the highest level of achievement specific to sport or to functional living. Proficiency in skill is usually developed through repetitive practice of the skill. Since it is evident that the cerebral palsied are deficient in all these functions it is essential that objectives that can be achieved especially by them be the guiding factor for the activities selected for their performance. Therefore, only a tailored and focused individualized physical education program can enable them to attain the outcomes that they can achieve (See Figure 1.)

Figure 1. Conceptual Framework



CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the procedures that were used to carry out the study. It is composed of the research design, the target population, the sample and sampling procedures, data collection and data analysis procedures, validity and reliability of the instruments and the research instruments that were used.

3.2 Research Design

The study used the survey design to find out the effectiveness of the physical education course to learners with cerebral palsy. According to Cohen and Manion (1994), the survey method is one of the most commonly used descriptive methods in educational research. This design was found most suitable for the study because it provided a good opportunity to describing the nature of the existing conditions, in the schools with regards to the teaching of physical education to learners with cerebral palsy.

3.3 Target Population

The study was concerned with finding out the effectiveness of the Physical Education course to learners with cerebral palsy. The target population included teachers who teach Physical Education to learners with cerebral palsy in schools for the physically handicapped and administrators of these schools. A total of 141 teachers were used in the survey. The teachers are entrusted with the direct implementation of the curriculum to learners. They teach and evaluate the learners based on the curriculum. A total of 11 head teachers were used in the survey. The administrators are the persons responsible for

ensuring that the curriculum is taught within the school as stipulated by policy. They have a professional obligation to ensure that all programs (including P.E.) are taught effectively in the institutions. They are also responsible for internal supervision and general administration of the institutions. Thus, a total of 152 respondents participated in the survey.

3.4 Sampling Procedures

The study covered all the schools and units for the physically handicapped, registered with the Ministry of Education Science and Technology, which have learners with cerebral palsy. There were 9 special schools and 3 units running integrated programs for the physically handicapped learners with cerebral palsy. The study used all the schools and units for the physically handicapped. One school was used for piloting of the instruments, while the rest of the schools and units were used in the final study.

3.5 Research Instruments Utilized

In order to achieve the objectives of the study, the research instruments used were questionnaires, observation schedules and checklists. These instruments were selected after making reference to previous studies related to the implementation of Physical Education by Okoko (1998), Kiganjo (1987), Muniu (1986), Madeje (1981) and Korri (1970). Additionally, the researcher reviewed literature on data collection instruments in social studies such as Coolican (1994), Weisma (1980), Nachmias and Nachmias (1976) and Best and Khan (2001).

3.5.1 Questionnaires

The questionnaires were adapted from Okoko (1998) and Kiganjo (1987). There were 40 items in the teachers questionnaire and 16 items in the head teachers questionnaire. The questionnaires had both open-ended and closed ended questions. The items in both questionnaires covered demographic characteristics of respondents, curriculum being used, facilities and equipment, time allocation and teachers' workload, problems encountered and suggested solutions. The respondents were asked to tick in the appropriate boxes for closed ended questions, and fill in the provided blank spaces for all items in the questionnaires. The closed-ended questions were used because they dealt with facts and were basically objective. The open-ended questions allowed the respondents to provide an in-depth assessment of the school environment. Some of the items also allowed the respondents to give their views and suggestions on Physical Education for learners with cerebral palsy.

3.5.2 Observation Schedule

The observation schedule was adapted from Muniu (1986) and Madeje (1981) to guide the researcher in observing adequacy of resources, maintenance of facilities and equipment and time utilization during physical education. There were 20 items with both open-ended and closed ended questions.

3.5.3 Checklist

The checklist was adapted from Korri (1970) and used to assess the availability and adequacy of facilities and equipment in the institutions randomly selected for observation. The

information on facilities was recorded based on availability, functionality adaptation and accessibility. The information on equipment was recorded based on availability functionality adaptation and quantity.

3.5.4 Piloting of Instruments

One special school for the physically handicapped was selected for the purpose of pilot-testing the instruments. The selected school was Nile Road Special School. A total of 12 teachers participated in the pilot test for the teachers' questionnaire, while the head teacher participated in the pilot testing for the head teachers. The same school was used for pilot- testing the observation schedule and the checklist. As a result of the pilot-testing, the items in the instruments were modified and corrected for clarity of communication.

3.6 Validity and Reliability of Instruments

Validity is concerned with ensuring that an instrument measures what it claims to measure. The instruments that were used were subjected to content validity where they were assessed by experts (Nachmias and Nachmias, 1976). To ensure that the questionnaires, observation schedules and checklists elicited the information that was required, they were examined by a senior lecturer in the Department of Educational Administration and Planning, and two senior lecturers from the Department of Physical Education and Leisure at Kenyatta University.

Reliability seeks to inform the extent to which an instrument measures what it is measuring with consistency. The reliability of the instruments was tested using the test-retest method. The pretest and post-test results were correlated using the Pearson Product Moment Correlation Coefficient. The SPSS program was used to calculate the Pearson “ r ” which was 0.86 significant at 99% confidence limit (r =0.86 P < 0.01). This shows the instrument has a high reliability. The following formula was used.

$$r = \frac{N \sum x y - (\sum x) (\sum y)}{\sqrt{[N \sum x^2 - (\sum x)^2] [N \sum y^2 - (\sum y)^2]}}$$

where x – first (pretest) set of scores

y – second (post test) set of scores

3.7 Data Collection Procedures

A permit for conducting the research was obtained from the Ministry of Education Science and Technology. Initial contact was made by phone calls to the head teachers, followed by visits to the schools in order to make acquaintance with the teachers² and administrators, brief them on the purpose of the study, and request their cooperation. This opportunity was also used to make arrangements for the administration of the instruments. Administration of the questionnaires was done by the researcher on a serve and wait basis. One head teacher was not available and the deputy declined to fill the questionnaire on his behalf. At the end of the data collection, 152 (100%) of the fully completed questionnaires were collected. Observations were carried out in 4 special schools and two units randomly selected.

3.8 Data Analysis Procedures

The responses from the instruments were analyzed both qualitatively and quantitatively. The expected responses were in the form of closed-ended and open-ended items. The most commonly used method for reporting survey was used which involved the use of frequency distribution, calculating percentages and tabulating them accordingly. The data was analyzed manually. A codebook was prepared in which the frequencies of all the responses were recorded and the calculated into percentages. The frequencies and percentages were mainly from the questionnaires. The data obtained from the observation schedules and checklists was used to back up the data from the questionnaires. The analyzed data was then organized into themes that were used to answer the research questions.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

4.1: Introduction

This chapter presents the data analysis and interpretation of the study. The information is organized according to themes derived from the questions, which guided the study. These themes are; demographic characteristics of respondents, adequacy and suitability of resources, the syllabus for P.E. to learners with cerebral palsy, time utilized for P.E. lessons for learners with cerebral palsy, the teacher's perception of the workload, problems encountered by the teachers, suggested solutions to the problems encountered

4.2: Demographic Characteristics of Respondents

The characteristics of the respondents included their gender, professional qualifications, experience in teaching and special training acquired in teaching P.E. to learners with cerebral palsy.

4.2.1 Gender of Respondents

The results in Table 1 show an imbalance in gender among the teachers who teach P.E. to learners with cerebral palsy in institutions for the Physically Handicapped (PH). A majority of the teachers (62.3%) of the teachers in the institutions were female, while only 37.4 % of the total population were male. All the head teachers (100.0%) in the institutions were male. Evidently, though there are qualified female teachers among the respondents to hold these position, none has been appointed to head any of the institutions for the Physically Handicapped.

Table 1: Distribution of Teachers by Sex

School	Male		Female		Total	
	N	Percent	N	Percent	N	Percent
Joy land	10	7.1	7	5.0	17	12.1
Nyaburi Unit	1	0.7	2	1.4	3	2.1
Joy Valley	3	2.1	3	2.1	6	4.3
Joy town	4	2.8	22	15.6	26	18.4
Daisy Resource Centre	5	3.5	4	2.8	9	6.4
Kakamega Township Unit	0	0	2	1.4	2	1.4
Oi Kalau	4	2.8	7	5.0	11	7.8
Kwanjora	1	0.7	1	0.7	2	1.4
Dagoretti	9	6.4	13	9.2	22	15.6
Nalondo	6	4.3	4	2.8	10	7.1
Masaku	5	3.5	11	7.8	16	11.3
Port Reitz	5	3.5	12	8.5	17	12.1
Total	53	37.4	88	62.3	141	100.0

4.2.2 Professional Qualification of Respondents

All the teachers surveyed were professionally trained. Among these, 41.8% were P1, 2.1% were P2, 42.6% were Diploma and 13.5% had a bachelor of Education (B.Ed). All the head teachers were professionally trained and all were diploma holders. (See Table 2)

Table 2: Professional Training of Respondents

Professional level	Teachers		Headteachers	
	N	Percent	N	Percent
P1	59	41.8	0	0.0
P2	3	2.1	0	0.0
Diploma	60	42.6	11	100.0
B.Ed.	19	13.5	0	0.0
Total	141	100.0	11	100.0

The professional training of primary school teachers focuses on general training for regular learners in regular schools. Teacher training for special education is conducted at Kenya Institute of Special Education (K.I.S.E.). It is a requirement that for one to join the institution they ought to be serving P1 teachers with at least three years experience.

Sherrill (1981) states that special training courses for teachers handling cerebral palsy learners should be compulsory to help them acquire the competence and particular qualifications for their role.

Apart from professional training, 29.1% had received special training in teaching of P.E. to CP learners, while 70.9% had no special training. Of those with special training, 24.1% were trained at diploma level and 5.0% at degree level. Among the head teachers, 63.6% had special training for P.E, while 36.4% had no special training. All the trained head teachers were at diploma level. The findings therefore show that the majority of teachers are not qualified to teach P.E. to learners with cerebral palsy.

As indicated in the literature review, there are three main classifications of cerebral palsy. These are the spastic, athetoid and ataxic. Knowledge of the various categories of learners helps the teacher to adequately select suitable learning activities. Of the respondents that were surveyed, 15.6% said they teach spastic learners, 9.9% teach athetoid, 4.3% teach ataxic, 66.7% teach learners in all the three categories, while 3.5% did not know the specific categories of learners they taught. All the head teachers (100%) stated that they had all the categories of learners in their institutions. Details of the findings are shown in Table 3.

Table 3: Categories of CP Learners taught by Respondents

Category	No. of times mentioned	Percent
Spastic	22	15.6
Athetoid	14	9.9
Ataxic	6	4.3
All	94	66.7
Don't know	5	3.5
Total	141	100.0

The experience of the teacher has a bearing on their ability to effectively implement an educational program. To determine their experience the teachers were asked to indicate the number of years they had been teaching cerebral palsied learners. The findings are summarized in Table 4.

Table 4: Duration of Teaching CP Learners

No of years	Teachers	
	No	Percent
Below 1 year	19	13.5
1-5 years	82	58.1
6-10 years	40	28.4
Total	141	100.0

The findings of the study indicate that 58.1% had taught CP learners for a period of between 1-5 years, 28.4% had taught them for a period of between 6-10 years and only 13.5% had taught CP learners for a period of less than one year.

4.3 The Curriculum for P.E to Learners with Cerebral Palsy

An educational program is guided by goals and objectives. For these to be achieved in any subject, the course content must be outlined and be in congruence with the stated goals and objectives (Ayot and Patel 1992). The curriculum helps the teacher to progressively plan and organize the learning activities. In Kenya, the Kenya Institute of Education (K.I.E.) is entrusted with the development of curricula for all levels of education except the university. To obtain the information on the teacher's perception of the physical education curriculum for CP learners, the respondents were asked to rate the following

- a) achievement of objectives
- b) relevance of content to CP learners
- c) interpretation of the curriculum in relation to CP learners
- d) criteria for selecting content, most common topics and why they are selected
- e) attitude of learners towards the subject

4.3.1 Achievement of Objectives

The regular P.E syllabus (Republic of Kenya 2002), which is also used to teach CP learners has the general objectives for P.E, as outlined in Chapter one. To elicit information on whether the learners were able to achieve these objectives, the teacher was asked to assess to what extent the objectives were achievable. The findings indicated that, 90.8% of the teachers stated that the objectives were not easily achievable, while only 9.2% said they were. It is evident here that a majority of teachers experienced difficulty in achieving objectives meant for regular learners when they are applied to CP learners.

4.3.2 Relevance of Content to CP Learners

The regular P.E curriculum has a course summary of the following activities

1. Body movement without apparatus
2. Body movement with apparatus
3. Fun games
4. Ball games
5. Track and field events

6. Swimming

7. Dance

As shown in Table 5, 78% of the teachers said the content was relevant to CP learners, while 22% said it was not relevant. Additionally, of the 11 head teachers, 63.6% said the content was relevant, while 36.4% said it was not. Going by the majority of the responses, the conclusion arrived at was that the available content is relevant for CP learners.

Table 5: Relevance of Activities to CP Learners

Rating	Teachers		Head teachers	
	No.	Percent	No.	Percent
Relevant	110	78.0	7	63.6
Irrelevant	31	22.0	4	36.4
Total	141	100.0	11	100.0

4.3.3 Interpretation of the P.E Curriculum

Apart from assessing the objectives of the curriculum the teachers were asked to rate their ability to interpret the curriculum and adapt it to CP learners. From the responses, 8.5% found it easy to interpret and were able to adapt the curriculum to the needs of the learners. However, 81.6% found the curriculum difficult to interpret and adapt, while 9.9% were not sure. This is shown in Table 8. Of the 81.6% who found it difficult to interpret, and adapt, 75 (53.2%) said it was because they were not specially trained to teach P.E. to CP learners, while 40 (28.4%) said they found the varying handicaps within the class difficult to cope with.

Table 6: Interpretation and Adaptation of the Curriculum

Rating	Teachers	
	No	Percent
Easy to interpret and adapt	12	8.5
Difficult to interpret and adapt	115	81.6
Not sure	14	9.9
Total	141	100.0

From the lesson observation it was noted that in spite of the teachers' effort to modify the activities taught to suit the learners in the best way they knew how, the learners were unable to successfully perform the activities. This especially involved activities that require movement from one point to the other. It was also observed that there was no uniformity in the kind of P.E. activities, which the learners were taught in the various institutions. This implies that there is a diverse variation in interpretation and adaptation of activities for CP learners.

4.3.4: Criteria for Selecting Content

Further to interpretation of the curriculum, the teachers were asked to give the criteria they used to select the activities for learners. A total of 60.7% said they selected content according to the learner's interest and ability, 19.7% based on available resources, 15.7% based on tradition and 3.9% based on their own competence.

Table 7: Criteria for Selection of Content

Criteria	No. of times mentioned	Percent
Students interest an abilities	108	60.7
Personal competence	7	3.9
Tradition	28	15.7
Available facilities	35	19.7
Total	141	100.0

Further findings revealed that 54.5% of the respondents mainly concentrated on manipulative activities, 35.6% on target throwing, 6.9% on ball throwing activities and 2.9% on swimming. Many of the manipulative and target throwing activities can be done from a stationary position. Ball games generally require a lot of movement. It was noted during observation that the activities that were difficult for learners to perform were those that required locomotion. The details of the most commonly taught topics are indicated in Table 8.

Table 8: Most Commonly Taught Topics

Topic	No of times mentioned	Percent
Ball games	12	6.9
Manipulative activities	95	54.6
Target throwing	62	35.6
Swimming	5	2.9
Total	174	100.0

It was also observed that the learners enthusiastically performed the activities that seemed to be interesting and which they could perform. In this respect, the respondents had been asked to state the reasons why they chose the topics they taught and also to rate the attitude of the learners towards the physical education. The responses are summarized in Table 9 and 10.

Table 9: Reasons for Choosing Certain Topics

Reason	No of times mentioned	Percent
Most essential	26	15.3
Caters for pupils interests	116	68.2
Facilities available	28	16.5
Total	170	100.0

Table 10: Attitude of Learners towards P.E.

Rating	Teachers	
	N	Percent
Very positive	48	34.0
Positive	83	58.9
Negative	10	10.1
Total	141	100.0

4.4 Adequacy and Suitability of Resources

The regular P.E program requires learners, including those with cerebral palsy to acquire skills in soccer, netball, handball, rounders, volleyball, gymnastics, dance and track and field events. To acquire these skills they need adequate and suitable facilities and equipment for each sport. To find out whether the facilities and equipment were adequate and suitable, data was collected from the teachers, head teachers and through the observation schedule and checklist. The collected data was analyzed and is presented under the following sub-themes

- i. availability of facilities and equipment
- ii. adequacy of facilities and equipment
- iii. adaptation of facilities and equipment to suit CP learners
- iv. maintenance of facilities and equipment
- v. availability of P.E texts and teachers guides

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4.4.1 Availability of Facilities and Equipment

To determine the availability of facilities, the teachers were asked where P.E lessons were carried out and whether the facilities were within or outside the school. All the teachers (100.0%) said the facilities were within the school. Further 68.8% stated that P.E. lessons were carried out outdoor, 14.9% said they were carried out indoors, while 16.3% taught the lessons both indoors and outdoors (see Table 1)

Table 11: Where Lessons are Taught

Facility	Teachers	
	N	Percent
Outdoor	97	68.8
Indoor	21	14.9
Both	23	16.3
Total	141	100.0

Further, out of the 141 respondents asked which indoor facilities they used when weather was unfavorable, 100 (70.9%) said they used the classrooms, 35 (24.8%) used the physiotherapy room and 6 (4.3%) used a gymnasium. Nevertheless no gymnasium was noted in all the schools visited. Results from the observations carried out in the sampled institutions disclosed that all the institutions at least had fields for soccer, netball, volleyball and handball. Only two schools, Joyland and Joytown had swimming pools. None of the schools had an athletics track or field. Instead they relied on borrowing these facilities from the neighboring regular schools.

4.4.2: Adequacy of Facilities and Equipment

Table 12: Adequacy of Facilities and Equipment

Responses	Facilities				Equipment			
	Teachers		Head teachers		Teachers		Head teachers	
	N	Percent	N	Percent	N	Percent	N	Percent
To a high extent	0	0.0	0	0.0	0	0.0	0	0.0
To some extent	65	46.1	7	63.6	33	23.4	5	45.5
Not at all	76	53.9	4	36.4	108	76.6	6	54.4
Total	141	100.0	11	100.0	141	100.0	11	100.0

As indicated in Table 12, findings from the teachers concurred with those of the head teachers that most of the institutions did not have adequate facilities and equipment. From the observation, though most of the fields were available they were limited in space and quite congested. Their facilities were therefore not adequate for use in the teaching of Physical Education. The schools observed had one regular ball each for soccer and netball. The rest were improvised paper balls and beanbags, which were used to teach throwing and catching activities. They were however few in relation to the number of pupils using them.

4.4.3 Adaptation of Facilities and Equipment to Suit CP Learners

In order to teach P.E. to CP learners well, it is necessary to adapt the program to the needs of the learners. This involves modifying them to suit the needs of the learners. It also includes adapting the facilities and equipment. The respondents were asked if the

facilities and equipment in their institutions were adapted. Out of the 141 teachers, 73.8% rated the adaptation of facilities to be of a high extent, 23.4% to some extent and 12.0% not adapted at all. According to the head teachers, adaptation of facilities was rated by 36.6% to a high extent, 45.4 to some extent and 18.0% were not adapted at all. From observation most of the facilities had been adapted in terms of accessibility and size.

For the adaptation of equipment, 53.9% of the teachers rated them adapted to some extent, while 46.1% said they were not adapted at all. The head teachers concurred with the teachers with 81.8% rating adaptation of equipment to be of some extent and 18.2% saying equipment was not adapted at all. It was observed that most of the equipment available was not adapted to suit the needs of the learners. Table 13 gives a summary of the findings.

Table 13: Adaptation of Facilities and Equipment

Responses	Facilities				Equipment			
	Teachers		Headteachers		Teachers		Headteachers	
	N	Percent	N	Percent	N	Percent	N	Percent
To a high extent	20	14.2	4	36.6	0	0.0	0	0.0
To some extent	104	73.8	5	45.4	76	53.9	9	81.8
Not at all	17	12.0	2	18.0	65	46.1	2	18.2
Total	141	100.0	11	100.0	141	100.0	11	100.0

4.4.4: Maintenance of Facilities and Equipment

Maintenance of facilities and equipment in any educational program is essential to enhance the efficiency of the program. In addition it minimizes wastage. The teachers and head teachers were requested to rate the maintenance of facilities and equipment available in their institutions. The results are recorded in Table 14.

Table 14: Maintenance of Facilities and Equipment

Responses	Teachers		Head teachers	
	N	Percent	N	Percent
Adequate	23	16.3	3	27.3
Not adequate	90	63.8	8	72.7
Not sure	28	19.9	0	0.0
Total	141	100.0	11	100.0

The table shows 16.3% of the teachers reported that the maintenance of facilities and equipment was adequate, 63.8% said maintenance was inadequate, while 19.9% were not sure whether or not the facilities and equipment were maintained. Out of the 11 head teachers surveyed, 72.7% reported the maintenance of facilities and equipment inadequate while 27.3% reported maintenance adequate. The observation schedule showed that the maintenance of P.E facilities and equipment was very poor. Most of the fields were not marked and the goal posts were rusted and leaning, others were broken. Unmarked fields reduce the teachers control over learners while the broken posts can

cause injury. A lot of the equipment in the sampled institutions were not functional because of lack of repair. These included punctured balls and broken javelins.

4.4.5 Availability of P.E. Texts and Teachers Guides

Textbooks and other learning support materials are important components in the implementation of education programs. The availability of these materials plays an important role in improving the quality of the program. Results of the study show that 96.5% of the teachers stated that there were no P.E texts or teachers guides that they could use while only 3.5% mentioned that these were available. All the head teachers acknowledged that indeed there were no reference books or guides in their institutions. It therefore means that it is at the discretion of the teacher to seek for sources of information for purposes of planning and teaching. The teachers mainly relied on their experience, college notes and their colleagues.

4.5 Time Utilized for P.E Lessons for CP Learners

The standard time for teaching of lessons is 30 minutes for lower primary and 35 minutes for upper primary. A P.E lesson has various components, which should be effectively taught within the given time. From the results, 97.9% of the teachers indicated that they used 35 minutes while 2.1% used 30 minutes. They were asked to comment on the standard time in relation to the CP learners. They gave the following responses in Table 15.

Table 15: Teachers Comments on Duration of the Lesson

Comment	Teachers	
	N	Percent
Adequate	28	19.9
Too short	113	80.1
Total	141	100.0

The teachers further stated that they needed time for the learners to move to and from the field. A total of 77.3% said they needed 10-20 minutes, while 22.7% said they required 5-10 minutes. In addition 134 (95.0%) of the teachers revealed that the learners did not change into P.E kits as required while only 7 (5%) said they did. Of the 134 teachers who said the learners did not change, 43 (30.5%) said it was because they did not have the kits, while 98 (69.5%) said it was because it would take a long time for the pupils to change. It was observed that all the P.E lessons on the timetable were scheduled to be taught during the last period to break or the last period to lunch. It was concluded that this was deliberately done to compensate for the time lost moving to and from the field. With regards to when the P.E. lessons were taught, 114 (80.9%) of the teachers reported that the lessons were taught after break, while 27 (19.9%) reported they were taught in the afternoon.

4.6 Teachers Perception of the Workload

Teachers were asked to state the number of P.E lessons they taught in a week. The results show that 70.9% of the teachers stated that they taught three lessons a week while 29.1%

said they taught four lessons a week. Though most of the teachers indicated that they taught three lessons a week, it was observed that on the time table it was indicated that each class had four lessons a week as stipulated in policy. Therefore the teachers were teaching below the standard requirement.

From the teacher's comments on the workload, 87.9% of the teachers indicated that they are overworked, while 12.1% had an adequate load. Those who were overworked were asked about the implications of the overload. They said this in addition to limited time and inadequate resources hampered their effective coverage of the course content.

From the literature review, it was noted that it is essential to have a multi-disciplinary team to aid in planning and preparation of the P.E program. From the responses elicited, 76 (53.9%) said they prepared for the lessons alone, 50 (35.5%) with the help of colleagues and only 15 (10.6%) with the help of the physiotherapist and occupational therapist. During the P.E lesson, only 5 (3.5%) of the teachers indicated they had teacher aide while 136 (96.5%) did not have. In all the lessons that were observed no assistance was recorded.

4.7: Problems Encountered by Teachers while Implementing P.E. to CP Learners

During the survey, the teachers and head teachers were asked to state the problems they encountered when implementing P.E to CP learners. Multiple responses were recorded as indicated in Table 17.

Table 16: Problems Encountered by Teachers

Problem	Teachers		Head teachers	
	N	Percent	N	Percent
Unsuitable curriculum	40	18.9	6	16.7
Curriculum too wide	35	16.5	10	27.8
Interpretation of curriculum	15	7.1	0	0.0
Inadequate facilities and equipment	25	11.8	8	22.2
Unsuitable facilities and equipment	28	13.2	6	16.7
Lack of support materials	10	4.7	4	11.1
Limited time	16	7.5	2	5.6
Heavy workload	8	3.8	0	0.0
Lack of special training	20	9.4	0	0.0
Diversity of learners handicaps	15	7.1	0	0.0

From the results of the teachers, unsuitable curriculum had the highest frequencies of response (18.9%) followed by the curriculum being too wide with (16.5%). Inadequate and unsuitable facilities were also mentioned and had 11.8% and 13.2% of the responses respectively. Lack of training was mentioned by 9.4% of the respondents. Other responses that were mentioned are limited time (7.5%), interpretation of the curriculum and diversity of learner's handicaps both with 7.1%, and lack of support materials with 4.7%. Heavy workload had the least proportion of the total frequency of problems

mentioned. This may imply that they are making an extra effort to ensure that they teach the learners in spite of the deficiency.

In the results of the head teachers, the curriculum being too wide had the highest response (27.8%), followed by inadequate facilities and equipment with (22.2%). Other problems mentioned included unsuitable curriculum and unsuitable facilities and equipment both having 16.7% of the responses. Lack of curriculum support materials had 11.6% of the responses. Limited time had the least percentage of response that is 5.6%.

4.8 Suggested Solutions to the Problems Encountered

Table 17: Solutions Suggested by the T eachers

Suggestion	Teachers		Head teachers	
	N	Percent	N	Percent
Inservice teachers in the field	50	15.2	3	6.7
Train more teachers in special education	36	10.9	6	13.3
Provide an adapted curriculum	82	24.8	10	22.2
Increase the length of a lesson	52	15.8	5	11.1
Provide adequate equipment	30	9.1	10	22.2
Provide textbooks, teachers' guides	39	11.8	11	24.4
Motivate the personnel in special schools	27	8.2	0	0.0
Protect teachers from prosecution	14	4.2	0	0.0

The table shows that the need for an adapted and therefore suitable curriculum had 24.8% of the total frequency of responses. This was the highest proportion mentioned in solutions. This was followed by the need to increase the teaching time, which had 15.8% of the total frequencies. In servicing had a total frequency of 15.2%, with the provision of textbooks and teachers guides recording 11.8%. Other responses included training of more teachers (10.9%), providing adapted equipment (9.1%) and motivating teachers (8.2%). Protection of teachers from prosecution got the least total frequency with 4.2%.

From the head teacher's results, provision of textbooks had the highest total frequency with 24.4%. This was followed by providing an adapted curriculum and adapted equipment which both had 22.2%. The need to train more teachers had 13.3%, and increasing the time of the lesson 11.1%. The response with the lowest total frequency was in servicing of teachers with 6.7%.

4.9 Summary

The data analysis of the study established that a majority of the teachers are professionally trained but are not qualified to teach physical education to learners with cerebral palsy. They are thus unable to adapt the curriculum well enough to suit the needs of the learners. The teachers are also faced with various challenges that affect their teaching. They include inadequate and unsuitable facilities and equipment, lack of reference materials, an unsuitable curriculum, inadequate time and a heavy workload for the teacher. This eventually leads to the inability to achieve the laid stipulated objectives thus rendering their teaching ineffective.

Consequently, the study identified ways of addressing the cited problems. These included in-servicing of the teachers in the field, reviewing the curriculum to come up with an adapted one for CP learners, providing adequate and suitable teaching and learning resources, allowing more time for the lessons and engaging more staff to assist the teacher. The research questions of the study were thus satisfactorily answered.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the study, conclusions and recommendations made, with regards to teaching of P.E to learners with cerebral palsy.

5.2 Summary

The purpose of the study was to find out the effectiveness of the existing Physical Education course to learners with cerebral palsy. The study was carried out in 12 public institutions (9 specials schools & 3 units) for the physically handicapped with cerebral palsied learners. The population consisted of 141 teachers and 11 head teachers from the institutions .The instruments used for data collection were questionnaires for the teachers and head teachers, an observation schedule and checklist. The questionnaires were administered to all the teachers who teach P.E to cerebral palsied learners and the head teachers of the institutions. Observation was carried out in 4 special schools and two units in the regular schools.

The study was guided by the research questions as indicated in Chapter one.

The data obtained from the research instruments were analyzed and presented in frequencies and percentages. The major findings are:

1. A majority of the teachers were not trained to teach physical education to learners with cerebral palsy. In this regard, they had difficulty in interpreting and adapting the curriculum to suit the needs of the learners. The teachers suggested that to remedy this, in-service courses could be held for the teachers already in service.

2. The teachers experience problems in interpreting the curriculum and adapting it to suit the needs of the learners. This is because it is difficult for them to achieve the stated objectives. The suggested solution to this problem was the provision of an appropriate syllabus for these learners.
3. The suitability, adequacy and maintenance of facilities and equipment, including textbooks and guides were inadequate. Many of the laid down topics and skills are either taught inadequately or not taught at all. The suggested solution to this problem was the provision of relevant texts and guides as well adequate and suitable facilities and equipment.
4. Duration for the P.E lesson is not adequate for CP learners. Because of the kind of disabilities the learners have, a lot of the lesson time is spent moving to and from the field. Solutions suggested was that the time be reviewed with a view of increasing the time allocated.
5. The teacher handles the P.E lesson alone without any assistance. This makes the teacher's workload heavy, as he/she has to deal with the varied categories of the CP learners within the same class. It was suggested that the teachers should be given assistants by training and employing more teachers.

5.3 Conclusions

The conclusions drawn from the findings of the evaluation study were that the teachers are constrained by the curriculum they use to teach P.E. to CP learners. There was evidence from their responses that they could not achieve the objectives with their learners. They also had difficulty in interpreting and adapting the curriculum. The available facilities and equipment are neither suitable nor adequate for teaching P.E. to cerebral palsied learners. The majority of teachers are not competent enough to teach P.E. to CP learners due to lack of special training in this area. There is need for a teacher aide during P.E. lessons because of the varied activities that have to be done by the learners as a result of their limitations. The teacher alone cannot give all the learners the proper attention and guidance they need. More time is required for P.E. lessons, not only to allow them to move to and from the field but for them to be able to spend more time learning the various activities as their limitations make them slow.

5.4 Recommendations

Based on the conclusions of the study, the following recommendations were made to policy maker's implementers and professionals in Physical Education with regards to educational programs for the cerebral palsied.

1. The Kenya Institute of Education should review the regular curriculum and develop a suitable curriculum that is geared towards the needs and capabilities of learners with cerebral palsy. This should be done in consultation with experience P.E. teachers and

experts in cerebral palsy to ensure that suitable activities are selected vis-à-vis the time available.

2. The Ministry of Education Science and Technology should assist in the provision of relevant facilities and equipment for learners with CP in special schools. This can be done in conjunction with public and private sectors of society to minimize the constraints related to facilities and equipment.
3. Specialists in the area of Physical Education should endeavor to write, publish and supply relevant textbooks and teacher's guides that will enrich the program to learners with cerebral palsy.
4. The Ministry of Education Science and Technology should give teachers special training in teaching of P.E to learners with cerebral palsy. This is especially so for those who are lacking this training yet already in service. There is also need to expand the institutions offering these courses to build more capacity.

5.5 Recommendations for Further Study

1. The situation in secondary schools with cerebral palsied learners. A comparison of the results can help in designing a comprehensive and wholesome policy and intervention measures that would benefit cerebral palsied learners.
2. The physiological and psychological benefits and draw backs of increasing the duration of P.E. lessons for cerebral palsied learners
3. The behavior and activities of cerebral palsied learners during P.E. lesson vis-a- vis those of regular learners.

4. The current system of funding for special schools and the implication of such funding mechanisms in the acquisition of required facilities and equipment for cerebral palsied learners.

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LETTER OF INTRODUCTION

Jacqueline Onyango
Kenya Institute of Education
P.O. Box 30231
NAIROBI.
1st November 2004.

Dear Sir or Madam,

I am a student at the University of Nairobi pursuing a Master of Education course. Part of the requirement for my course is the completion of a research project. For my research I wish to study the effectiveness of the primary school Physical Education course to learners with cerebral palsy in schools for the handicapped. I kindly request for your cooperation in filling in the provided questionnaires. The information you give shall be treated in confidence and will be used for the intended purpose only.
Thankyou in advance.

Yours faithfully,

Jacqueline Onyango

Appendix 1: Research Instruments

Questionnaire for teachers

Name of school _____

Respond to **ALL** the items in the questionnaire by ticking in the box provided or filling in information in the space provided.

1.0 Background Information

1. Indicate your sex.

a) Male

b) Female

2. What is your professional qualification?

a) P1

b) P2

c) P3

d) Diploma

e) B.Ed

f) Other _____

3. How long have you been teaching in a special school with cerebral palsied learners

a) Below 1 year b) 1-5 years c) 6-10 years d) Above 10 years

4. Have you been trained to teach P.E to cerebral palsied learners?

a) Yes

b) No

If Yes, what kind of training was it?

a) Seminar

b) Workshop

c) Diploma

d) Certificate

e) Degree

5. What classification of cerebral palsied learners do you teach?

a) Spastic

b) Athetoid

c) Ataxic

d) All

f) Don't know

2.0 Curriculum in use for cerebral palsied learners

1. What is your opinion on interpretation of the syllabus?

- a) Very Easy b) Easy c) Very Difficult d) Difficult
d) Not Sure

2. Comment on the suitability/relevance of the content in the syllabus in relation to learners with cerebral palsy?

- a) Very Relevant b) Relevant c) Irrelevant d) Not Sure

3. How would you assess the achievability of the stated objectives?

- a) Easily achievable b) Achievable c) Not easily achievable
d) Not sure

4. What criteria do you use to select content for teaching?

- a) Students interests and ability b) Personal competence
c) Tradition d) Available facilities
e) Personal interest

5. What is the attitude of the learners towards the subject?

- a) Very positive b) Positive c) Negative d) Very negative
d) Not sure

6. Which topics do you teach most? _____

7. Why do you pick these topics?

- a) Most essential b) Caters for pupils interests
c) Easily understood d) Facilities are available

8. Are you able to adapt the activities to suit the needs of the learners with C.P?

a) Yes

b) No

If No, state reasons why.

9. Are there any guidelines on how to adapt this curriculum?

a) Yes

b) No

10. What factors hamper your effectiveness in teaching P.E. to C.P learners?

b) Limited equipment and facilities

b) Limited text books

c) Large classes

d) Limited time

d) Any other (specify) _____

3.0 Facilities and equipment

1. Where are physical education lessons carried out

a) Outdoor

b) Indoor

c) Both

2. Are the available facilities situated within the school?

a) Yes

b) No

If No, state where they are situated

3. To what extent are the facilities adequate?

a) To a high extent

b) To some extent

c) Not at all

4. What is the maintenance of facilities like?

a) Adequate

b) Inadequate

c) Not sure

5. To what extent are the facilities adapted?

a) To a high extent

b) To some extent

c) Not at all

6. To what extent is the equipment adequate?

- a) To a high extent b) To some extent c) Not at all

7. To what extent is the equipment adapted?

- a) To a high extent b) To some extent c) Not sure

8. What alternative facilities are available for use during unfavourable weather conditions?

- a) Gym b) Hall c) Classroom d) None

9. Does the school have P.E textbooks for reference in teaching?

- a) Yes b) No

10. What do you use in the absence of these books?

4.0 Time allocation and teachers' workload

1. What time are the P.E lessons timetabled?

- a) Early morning b) After break c) Afternoon

2. How long is a lesson?

- a) 30 minutes b) 35 minutes c) Any other (Specify) _____

3. Do you consider the time allocated adequate?

- a) Too long b) Adequate c) Too short

4. Do learners change into P.E kits?

- a) Yes b) No

If No, state why

5. Estimate the time required to move to and from the field

- a) Before the lesson _____ b) After the lesson _____

6. How long does it take to reach facilities that are not within the school?

7. How many P.E lessons are allocated for the learners you teach in each class?

8. How many P.E. lessons do you teach in a class per week? Mention for each class if you teach more than one class.

9. Are you able to cover the content effectively?

a) Yes

b) No

If No, state reasons why

10. Do you have an aide or assistant during the P.E lesson?

a) Yes

b) No

11. How do you prepare the program for your learners?

a) Alone

b) With assistance from colleagues

c) In consultation with doctor/Physiotherapist

d) Other (Specify)

12. What is your opinion on the workload allocated to you?

a) Overworked

b) Adequate load

c) Underworked

13. What problems do you encounter while implementing the P.E. curriculum to CP learners in relation to the following

a) Curriculum

b) Facilities and equipment

c) Time allocation

d) Workload

14. What are the possible solutions to the above mentioned problems?

a) Curriculum

b) Facilities and equipment

c) Time allocation

d) Workload

15. Suggest ways in which the teaching of P.E to cerebral palsied learners can be improved.

Questionnaire for the Head teacher

Name of School _____

Respond to **ALL** the items in the questionnaire by ticking in the box provided or filling in information in the space provided.

1. Indicate your sex

- a) Male b) Female

2. What position do you hold in the school?

- a) Head teacher b) Deputy Head teacher

3. What is your highest professional qualification?

4. Have you ever taught P.E to cerebral palsied learners?

- a) Yes b) No

If Yes, for how long?

5. Are you trained to teach P.E to cerebral palsied learners?

- a) Yes b) No

If Yes what kind of training did you receive?

- a) Seminar b) Workshop c) Diploma d) Certificate

6. With reference to your school, which categories of cerebral palsied learners do you have?

- a) Spastic b) Athetoid c) Ataxic d) All

7. Does the school have facilities and equipment for teaching physical education?

- a) Yes b) No

If No, What do they do during physical education lessons?

To what extent do you consider the available facilities adequate?

- a) Very adequate b) Adequate c) Not Adequate

How would you rate the maintenance of these facilities?

- a) Adequate b) Inadequate c) Very Inadequate

To what extent do you consider the facilities adapted?

- a) To a high extent b) To some extent c) No at all

To what extent is the equipment available adequate for the cerebral palsied learners?

- a) Very Adequate b) Adequate c) Not Adequate

13. To what extent is the equipment used adapted for use by the cerebral palsied learners?

- a) To a high extent b) To some extent c) Not at all

14. Does your school have physical education textbooks for reference?

- a) Yes b) No

If No, what references are used to teach P.E.?

15. Comment on the relevance of the existing P.E. curriculum to learners with cerebral palsy?

- a) Very Relevant b) Relevant
c) Not Relevant

16. Does your school have any personnel other than the teacher who assist in planning and teaching of P.E. lessons?

a) Yes

b) No

If Yes, state who they are

17. What problems are encountered by your teachers when teaching physical education to cerebral palsied learners in your school in relation to the following

a) Curriculum

b) Equipment and facilities

c) Time allocation

d) Workload

18. Suggest ways if improving the teaching of physical education to cerebral palsied learners.

Observation Schedule

Name of school _____

Class _____

Part 1 : P.E. Program

1. Is physical education indicated on the timetable?

a) Yes b) No

2. How many lessons are indicated per week? _____

3. How long is a lesson? _____

4. What time are the P.E lessons scheduled on the timetable? _____

Part 2 : Lesson observation

1. What facilities are being used

a) On-site b) Off-site

State the facilities in use in either case _____

2. Did the pupils change for the physical education lesson?

a) Yes b) No

3. How much time was spent for the pupils to get to and from the field/gym? ^{1/2}

4. Does the teacher have any assistant

a) Yes b) No

If Yes, what assistance does he/she provide? _____

5. What is the teacher pupil ratio? _____

6. Is equipment being used ?

a) Yes b) No

If Yes, which ones _____

8. Is the equipment in use sufficient in quantity?

a) Yes b) No

9. Is the equipment adapted for cerebral palsy learners ?

a) Yes b) No

10. Were all the pupils able to perform all the activities as explained by the teacher ?

a) Yes b) No

11. Which activities were they unable to perform ?

12. What did they do as an alternative if any ?

13. Were all the parts of the P.E lesson carried out ?

b) Yes b) No

If Yes were they adequately covered? ?

If No, which components were not covered and why?

Part 2: Availability and condition of equipment

Equipment	Availability		Functional		Adapted		Quantity	
	YES	NO	YES	NO	YES	NO	Adequate	Not Adequate
Beanbags								
Bats								
Hoops								
Ropes								
Shots								
Discoi								
Javelin								
Nets								
Trampoline								
Balls								
High jump Equipment								
Starting blocks								
Floater								

Appendix 2: Schools and units for the Physically Handicapped

Name of School	Location
Joyland special school	Kisumu
Nyaburi special Unit	Kendu Bay
Joy Valley special school	Bungoma
Joytown special school	Thika
Daisy Resouce Centre	Kakamega
Ol Kalau special school	Nyahururu
Kakamega Township special Unit	Kakamega
Dagoretti special school	Kikuyu
Nalondo special school	Bungoma
Masaku special school	Machakos
Port Reitz special school	Mombasa
Kwanjora special Unit	Embu