INSTRUCTIONAL PROBLEMS CONSTRAINING THE 
TEACHING OF PHYSICAL EDUCATION IN 
KENYAN SPECIAL PRIMARY 
sCHOOLS FOR THE PHYSICALLY 
HANDICAPPED

BY
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Instructional problems-constraining
DECLARATION

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

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To my parents who supported and encouraged me to be better prepared in order to meet the challenges of education and to my brothers and sisters whose inspiration contributed to my success in school.
ACKNOWLEDGEMENTS

I have received much help and encouragement from other people and institutions in my struggle to complete this study. I am indebted to my supervisors, Dr. M. Boit and Dr. B. Kalui for their patience, encouragement and scholarly counsel. Their critical reading of my thesis greatly enhanced my mode of presentation and the quality of this work. In addition I would like to thank Dr. G.K. Karugu of the Department of Psychology, Kenyatta University for his contribution in the area of special education.

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ABSTRACT

The purpose of this study was to investigate the instructional problems constraining the teaching of Physical Education in Kenyan Special Primary Schools for the physically handicapped. The study covered all the seven such primary schools in the country and was conducted in two stages namely; a pilot stage in which one school was used and the main study which covered the other six schools.

The subjects were drawn from all the physical education teachers and administrators from the six targeted schools. A total of 42 teachers, (16 male and 26 female) in addition to the 6 administrators participated. The administrators comprised 5 headteachers and one deputy; three of whom were male and three females.

Data was collected from a variety of sources using questionnaires, interviews and observation schedules. All the teachers in the sample responded to questionnaires. In addition all the administrators were interviewed and 32 live lessons were observed. The data collected were analyzed using a Casio fx-350 scientific hand calculator and developed into frequencies and percentages for interpretation. Ranks and means were used whenever they made the analysis of results clearer.

The results of the study established that there was lack of a physical education syllabus, facilities
and equipment suitable for use by the physically handicapped. It was observed that special primary schools for the physically handicapped lacked suitable physical education textbooks. The above limitations were identified as the major problems constraining the teaching of physical education in special schools for the physically handicapped.

Other factors limiting the teaching of physical education to the physically handicapped included the lack of sufficient numbers of specially trained teachers. This problem bears a direct relation to the degree of fear for legal liabilities. In addition, this problem was aggravated by a widespread lack of teacher aides. It was also observed that the time allocated for the teaching of physical education was inadequate.

Among the recommendations advanced for the purposes of educational policy and practice included the production of a relevant physical education syllabus and the stepping up of the training of teachers for the physically handicapped. There is need to inservice non-specialist physical education teachers of the physically handicapped and to provide suitable textbooks. Further recommendations were made for researchers to conduct similar studies at the secondary school level.
CHAPTER ONE

1.0 INTRODUCTION

To date there has not been much difference between physical education for the physically handicapped and physical education for the normal pupils in Kenyan Primary Schools. The same syllabus and similar category of teachers have been used for the implementation of the curriculum. It was therefore found difficult to divorce regular physical education from the adapted physical education when giving the background to the problem.

1.1 BACKGROUND TO THE PROBLEM

As Razor (1983) observed, physical education at any level and in all settings does not function in a vacuum. Problems of varying magnitude, at times, have an impact on the teaching and the learning of the subject. According to Kane (1974) such difficulties limit the physical education teachers from their effectiveness in the teaching process. Instructional problems in regular physical education in Kenya, can be traced back to the colonial times.

Among the problems identified earlier was the lack of specialized training in the field of physical education during the colonial era. Reporting about specialization in physical education during the
colonial era, Dodd (1956) in Hall (1973) asserted that,

Although many teachers wanted to specialize in physical education, the government would not permit them to do so. They had to be general class teachers (p.147)

Due to the lack of specialized training, those teaching it were not aware of a sound philosophy and principles of physical education (Nyaga, J.J., 1966) in Hall (1973). Nyaga who was an instructor at Kigali Teachers College, between 1963-1967 felt that lack of confidence and enthusiasm and the failure to understand the role of physical education in child development were some of the factors attributed to the lack of specialized training. This was one of the major reasons for unsatisfactory physical education programmes in primary schools.

The setup of the physical education programme was such that it was a setback to the teaching of the subject. Physical education in Kenya during the colonial era emphasized a formal drill type methodology commonly known as Physical Training (P.T.). A series of regimental exercises were executed as per the commands of the teacher. This programme had been borrowed from the 1933 physical education syllabus used in Britain. Such physical education programmes were primarily geared to satisfy the needs of the relatively few pupils although physical education was part of the school curriculum
According to Hall (1973), the relationship between mind and body was almost non-existent except for the mental exercises involved in counting and responding to commands. Commenting about the programme, Jeneby who was the first inspector of physical education in the Ministry of Education after independence was cited by Hall (1973) as having pointed out that the P.T. programme was boring, dull, lacked imagination and creativity, had no progressive skill training and had little or no carry-over value. According to Jeneby, the students were unwilling to take part in the programme as it did not address itself to individual needs. Both Jeneby and Nyaga noted that the physical education programme needed overhaul.

Another instructional problem that was prevalent during the colonial days was the lack of adequate and suitable equipment and facilities. Commenting about equipment and facilities during the colonial days, Hall (1973) reported that poorly or incorrectly marked fields did not permit the students to put the rules into practice. Similarly, the use of wrong and worn out equipment or the absence of equipment such as goal posts encouraged careless play. Due to lack of factory made equipment, gymnastic equipment was made in the woodwork shops while balls, bats, hoops, mats and other pieces of equipment were made from raw materials locally obtained. While trying to explain
the cause of the lack of equipment, Dodd (1956) in Hall (1973) observed that "There was no money at all for such 'frivolities' as physical education" (p. 148).

The problem of catering for only the highly skilled as mentioned earlier often resulted from inadequate facilities, equipment and staffing. Kane (1966) in Hall (1973), was in support of this observation when he pointed out that:

as a result of administrative and program inadequacies, lack of facilities, equipment and teachers, and money, physical education and sport involved a minority of youth and not the masses (pp. 154-155).

After realizing the problems that constrained the teaching of physical education in the primary schools, the inspector of physical education made the following suggestions to primary school administrators in 1967:

(a) Better care to be taken of the playing fields and equipment.
(b) The organization of the class be related to the age of the students and the facilities and equipment available.
(c) That the teacher with the best physical education qualifications in the school should serve as the co-ordinator to supervise and assist the other teachers (Hall, 1973, p. 173).

All this was being done to curb the instructional problems that confronted the physical education
teachers in those days. Whether or not these problems are currently being experienced by physical education teachers of the physically handicapped in special primary schools in Kenya has not been the subject of any study that the investigator has come across.

Since independence attempts have been made to change the approach, and therefore the image of physical education in the schools (Hall, 1973). This has been done through pre-service and inservice training of teachers and the introduction of modern concepts and methods. As a result physical education has undergone tremendous changes.

Traditional physical training (P.T.) has given way to physical education which emphasizes the development of the child’s mental, physical and social potentials through the process of exploration, discovery and perception (Ministry of Education Science and Technology, 1985, p.v.). Therefore, physical education is geared to play an important role in the development of the child’s cognitive, affective and psychomotor facets. According to the 1987 teachers' guide for secondary physical Education by K.I.E., schools are now actively teaching physical education.

These changes in physical education have been made possible by a number of factors. In the Kenyan education system physical education as a medium of
learning and expression is considered as an integral part of the education process. This is reflected within the context of the new structure of education popularly referred to as the 8:4:4 system of education. In the above system of education, every child is required to participate in physical education (Ministry of Education, Science and Technology, 1984). Physical education is therefore mandatory at all primary and secondary schools and the special schools for the physically handicapped are no exception. The requirement is five single periods of 30 minutes each for lower primary, five single periods of 35 minutes each for standard four and five and three single periods of 35 minutes each for standard six through to eight (Ministry of Education, Science and Technology, 1986, p.xiv).

To facilitate the teaching and learning of physical education the inspector of the subject together with the panel of physical education experts from the K.I.E. developed a new primary school physical education syllabus in 1984. The syllabus provides a guide to physical activities for teachers to select and plan activities for the learners. In the primary schools the syllabus is completely centralized and uniform for all schools in the country. The content of the primary school syllabus includes activities from such areas as ball games,
athletics, gymnastics, dance and swimming. The setup of the syllabus is such that physical education in primary schools is entirely practical. In lower primary the various sports skills are introduced in simple and general ways without stressing specialization. The stress is on general athletic development of the children. The specialization of the particular sports skills is introduced and emphasized in upper primary. The syllabus is structured in such a way that for the teaching and learning to go on smoothly, facilities such as outdoor playgrounds for various ball games, the track and indoor courts are needed. Equipment like balls, bats, athletic and gymnastic apparatus, uniform and relevant textbooks are also needed.

Special education programmes in Kenya are an integral part of each cycle of formal education and cater for persons who are hearing impaired, visually, mentally, physically and multiply handicapped (Kamunge Report, 1988). The majority of the mildly physically handicapped children attend integrated schools while the severely handicapped attend special primary and secondary schools. Some physically handicapped pupils are catered for in Homes and hostels from where they attend the regular schools. Such Homes and hostels are built near regular schools and are supported by the public and charitable agencies. By 1986 there were 36 Homes in the
country. At present there are ten special schools and other regular school facilities for the physically handicapped in the country. Three of the institutions are secondary schools while the other seven are primary schools.

The physically handicapped pupils in special schools follow the same curriculum as for the normal children (Kamunge Report, 1988). These children sit for the same examinations and compete for the same places at secondary or university level with the normal students. According to the 1984 syllabus for Kenya Primary Schools standards (vii) and (viii), physical education teachers have been advised not to exclude physically handicapped students from physical education lessons. It is envisaged in the syllabus that teachers should adapt activities meant for the normal children in accordance to the degree of handicaps. Apart from mentioning where the activities can be selected from, the primary school physical education syllabus does not provide further guidelines on how to adapt or modify the activities in accordance to the degree of handicap. Such modification is not only for the purposes of teaching but also to enable fair assessment.

Continuous assessment has been given prominence in all subjects in the 8:4:4 system of education. Under the procedures of continuous assessment in physical education, the 1986 lower primary school
syllabus requires grading of children to be conducted per term and the subsequent grades to be averaged for a final end of year grade. It is also recommended that the physically handicapped should be graded in physical education classes as well. The syllabus suggests that teachers should set tests or offer practical activities in which each individual can be assessed and graded.

All trained primary school teachers are trained on how to teach physical education to the normal pupils. The training is done either in the pre-service courses which currently last two years or the inservice courses for the untrained practising teachers which takes three calendar years. The training is done in the Government owned primary teacher training colleges all over the country. The curriculum of primary teacher education includes the subjects taught in primary schools, education foundation courses and teaching practice (Kamunge Report, 1988). Three 45 minute physical education lessons are compulsory for all teacher trainees in the primary teachers colleges. However, the training in physical education in the primary teachers colleges excludes the content of adapted physical education.

Preservice training for teachers of the physically handicapped did not begin until the Kenya Institute for Special Education (K.I.S.E.) opened its
doors for such a course in 1987 admitting 15 students who graduated in 1989 (Karugu, 1990). Those teachers who were serving in institutions for the physically handicapped before 1989 were either trained overseas, had attended inservice courses or were untrained as special education teachers. Prior to 1987, the Ministry of Education had been organizing inservice courses for trained non-specialist teachers working in special institutions for the physically handicapped. (See Table I.1 below)

**Table I.1: Inservice Courses for Trained Non-Specialist Teachers of the Physically Handicapped.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Venue</th>
<th>No. of Attendants</th>
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<tbody>
<tr>
<td>1983</td>
<td>Limuru Conference Centre</td>
<td>53</td>
</tr>
<tr>
<td>1985</td>
<td>Kenya Science Teachers College</td>
<td>55</td>
</tr>
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<td>1986</td>
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Source: Auka and Afendo (1986).

In 1986 an 'on-the-job-Inservice' programme was conducted in Kisumu, Mombasa, Kitale, Nairobi, Nyandarua, Narok, Kiambu, Meru, Nakuru and Embu in the particular special schools (Wamocho, (1987) in K.I.S.E. Bulletin, March 1987, vol. 1 no. 1).

Currently K.I.S.E. conducts a two-year diploma programme and a three months inservice course. The
diploma programme offers professional theoretical knowledge and practical skills to enable the teachers to teach pupils with the various handicaps. The inservice course updates the teachers with new developments in the field of educating and training the handicapped. Physical education is one of the subjects in the K.I.S.E. curriculum.

1.2 STATEMENT OF THE PROBLEM

Teachers of the physically handicapped have expressed concern over numerous problems which they face as they teach physical education to their pupils (Auka, 1986). According to Auka, physical education teachers of the physically handicapped lack confidence to teach the subject. As a result of this, some teachers have requested for guidelines in the teaching of physical education to the physically handicapped while some others have requested for guidance on how to adapt the physical education curriculum to suit the physically handicapped. A common weakness in the teachers revelations' was that the majority did not pinpoint the specific problems they faced. This study was therefore designed to investigate the instructional problems constraining the teaching of physical education to the physically handicapped in Kenyan Special primary schools.
1.3 RESEARCH QUESTIONS

The research questions formulated to investigate the instructional problems constraining the teaching of physical education to the physically handicapped were:

(a) Is the physical education programme being followed in special primary schools geared to meet the needs of the physically handicapped pupils?

(b) Are adequate learning resources available for the teaching of physical education to the physically handicapped in special primary schools?

(c) Are there enough adequately trained personnel to teach physical education to the physically handicapped?

(d) Is adequate time allocated for the purposes of teaching physical education to the physically handicapped?

(e) Are the teachers' workload among the factors constraining the teaching of physical education to the physically handicapped?

(f) What other instructional problems constrain the teaching of physical education in Kenyan special primary schools for the physically handicapped?
1.4 SIGNIFICANCE OF THE STUDY

In Kenya, so far, the investigator has not come across a study that has investigated the instructional constraints that confront the physical education teachers of the physically handicapped in Kenya special primary schools.

Since physical education has been given prominence in the 8:4:4 system of education, it was anticipated that the findings of the study would yield useful information in the area of teaching, curriculum development and policy issues pertaining to physical education in Kenyan special primary schools for the physically handicapped.

Such information would be quite useful to heads of schools and administrators responsible for policy matters such as the inspector for special education and the inspector for physical education in the Ministry of Education. The special education section of K.I.E. would get updated information on problems facing physical education teachers of the physically handicapped. Recommendations would also provide useful hints on policy matters. Such information would be necessary for the development of optimum physical education programmes for the physically handicapped pupils in special primary schools. Also, the findings of this study would be expected to provide guidelines on the establishment of physical facilities and teaching resources. In addition,
relevant information on preservice and inservice teacher training for the teachers of the physically handicapped would provide guidelines on teacher preparation.

This study would also contribute to the development of literature on physical education programmes for the physically handicapped in Kenya. It is hoped that this study would provoke and sensitize other educators to take note of the issues facing the physical education teachers who teach the physically handicapped. Recommendations related to the problems addressed in this study are provided in chapter five.

1.5 **ASSUMPTIONS OF THE STUDY**

In this study the following assumptions were made:

(a) That all special primary schools for the physically handicapped adhered strictly to the current physical education syllabus.

(b) That the subjects provided genuine responses reflecting the state of physical education in their schools.

(c) That education administrators (headteachers or their deputies) in the study schools cooperated and allowed the investigator to carry out the research without biasing the teachers.
(d) That the presence of the investigator during the administration of the instruments had minimum effect and did not adversely affect the responses from the subjects.

(e) That the findings of this study would be taken up by parties concerned with the formulation and implementation of educational policy.

1.6 LIMITATIONS OF THE STUDY

One of the limitations that hampered the study was the insufficient availability of literature on the physical education for the physically handicapped in Kenya. As a result, most of the references were drawn from studies conducted abroad.

Another limitation was that children in one of the schools were prohibited from practical physical education classes by the sponsors. As a result no physical education lesson was observed in that school. In two other schools, the teachers refused to conduct physical education lessons for fear of legal liability. In this regard, the total number of lessons observed were therefore slightly reduced.

1.7 DEFINITION OF TERMS

The following terms were operationally defined as used in the context of this study. Those that were adopted from various authors were acknowledged.
Adaptation: involves modifying the working activity programme, facilities or equipment to suit the disability of the learner.

Adapted Physical Education Programmes: are those programmes which have the same objectives as the regular physical education programme, but in which adjustments are made in the regular offerings to meet the needs and abilities of an exceptional child. (Fait, 1972, p.3)

Cerebral palsy: is a condition where motor control centres of the brain are damaged as a result of a disease, anomaly, or accident before, during or after birth. Cerebral palsy results into a motor disability that can cause weakness, lack of coordination, involuntary motions, paralysis and excessive rigidity or body stiffness. (Mary Helen, 1977, p.44)

Disability: is a lack or restriction of ability, caused by an impairment, to perform an activity in the manner or within the range considered normal for a human being. (Rye and Donath, 1989, p.157)

Handicapped Individuals: are those who because of physical, mental, social, or emotional differences cannot display the reactions and patterns of behaviour of the normal
segment of the society. (Fait, 1972, p.2).

**Impairment:** is the loss or abnormality of structure to function that exists or develops from disease or injury. It may be congenital or acquired. (The American National Red Cross, 1977, p.25).

**Integration:** is the bringing together of the normal and the physically handicapped children to study together in one school.

**Lower Primary:** consists of standards one, two and three in the primary cycle of education. Upper primary consists of standards four through eight.

**Muscular dystrophy:** is a congenital condition of a progressive degeneration of the muscles of the body characterized by progressive muscular weakness. The condition is brought about by the changes that take place in the muscle fibre. (Miller & Sullivan, 1982, p.21)

**Normal Children:** are all the children without the identified handicapping conditions that limit the participation in any type of physical activity. (Nalletamby, 1980, p.4).

**Paraplegia:** is the paralysis of the legs and lower part of the body, motion and sensation
being affected. (Fait, 1972, p.431)

*Physical Education:* is the phase of education which is concerned with the adjustment and development of an individual or a group in or through total body activities, usually of a playful type; adjustment and development accruing from organized instruction or direction in such total body activities. (Price, 1980, p.181)

*Physically Handicapped:* are those who have problems of locomotion, psychomotor co-ordination or learning ability, and cannot perform or learn easily without using aid(s) in one or more motor activities involving total body movement or fine manipulative skills due to muscular, skeletal disorders, neurological and or chronic health impairments. Categories of physical handicaps include children who are born with *spina bifida*, deformed legs, *hydro microcephaly*, deformed amputation, *cerebral palsy*, *muscular dystrophy*, *epilepsy* or chronic health problems and those whose handicaps occurred later in life (acquired) such as *polio*, bone *tuberculosis*, surgical amputation, contractures or fractures. Chronic health impairments include *cystic*
fibrosis, heart disease, hemophilia, sickle cell, anaemia, epilepsy, asthma, tuberculosis and AIDS. (Afendo E.N., 1988, pp.7-8).

Physiotherapy: is the application of therapeutic procedures to aid patients in their recovery from injury or disease. Among the therapeutic procedures used are exercises to increase muscular strength, endurance, coordination and flexibility; promoting participation in the activities of daily living; developing the ability to use assistive devices; and relieving pain (Fait, 1972, p.420).

Regular Physical Education: is the physical education meant for normal children who do not have neither body, nor mental impairment, whose daily function is what is expected of all human beings.

Scoliosis: is a postural deviation leading to faulty body mechanics in which the back is crooked forming an S curve of the vertebral column. The deviation is caused by improper functioning of the muscles and ligaments of the body and can be permanent or correctable, (Mary Helen, 1977, p.74).
Special Education: is the education of children who deviate so far from the norm (physically, mentally or emotionally) that the standard curriculum is not suited to their needs. (Price, 1980, p.183).

Spina bifida: is a congenital defect in which the spinal column is not enclosed in the lower body, owing to a posterior fusion defect of the vertebral arches which results into a malformation of the spinal column (Mary Helen, 1977, p.74).

8:4:4 System of Education: is the system of education adopted in Kenya in 1985 in which a student is expected to spend 8 years in the Primary cycle, 4 years in the Secondary cycle and 4 years at the University.
CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 INTRODUCTION

The literature reviewed in this study was divided into two related sections. The first section was a theoretical review while the second section consisted of relevant research studies and literature both local and from foreign nations.

2.1 THEORETICAL BASIS OF THE STUDY

The theoretical review covered the following:

(a) P.E. For The Physically Handicapped. A Rationale.

(b) Role of The P.E. Specialist In Teaching Adapted P.E..

(c) Role Played By Support Services In Adapted P.E..

(d) The Need For Equipment And Facilities In Adapted P.E. Programmes.

2.1.1 P.E. for the Physically Handicapped. A Rationale

Recent research findings indicate that physical education is important to the lives of the physically handicapped persons, (George and Hart, 1983). These authors 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. 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. (George and Hart, 1983, p.11).

Physical education can be of immense therapeutic value to the physically handicapped. According to Guttman (1976) sport represents the most natural form of remedial exercise. He further stated that exercise was invaluable in restoring of the physically disabled person’s strength, co-ordination, speed and endurance. In support of the therapeutic value of exercise, Guttman (1976) observed 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 these unfortunate victims of war but also their activity of mind, self-dignity, self-confidence, and comradeship and which gave them a completely new outlook towards life (p.11).

In his report on victims of poliomyelitis, a cause of physical handicap, Daniels (1965) pointed out that such victims will gain general strength, co-ordination and endurance through well-designed physical education programmes. In Daniels’ views, the gain in strength, co-ordination and endurance assists the physically handicapped child to meet the physical demands of daily living and increases the.
child's ability to live a normal life within the limitations imposed by the disability.

The greatest contribution that physical education can offer to the physically handicapped is social contact (George and Hart, 1983). The effects of an impairment can be either increased or diminished by the environment. Shared activity in physical education provides an opportunity for peer group interaction, acceptance and learning of acceptable social behaviour such as sharing and waiting one's turn. In such mixing the child is able to raise from the condition of isolation to which the child had to resign since acquiring the disability. In support of the role of physical activity in enhancing social contact, Sherrill (1981) noted that:

Participation in games and athletics by victims of muscular dystrophy, while the disease is in the early stages, will help the child to form closer friends who will stick by as he becomes increasingly helpless (pp. 506-507).

Guttman (1976) supports the views of George and Hart (1983) regarding the role of physical activity in enhancing relationships amongst the physically handicapped. According to Guttman, physical education and sport counteract the developments of those abnormal, antisocial attitudes which follow with monotonous regularity in the wake of any severe disability.

The attitude of despair and the problem of
underachievement common among the physically handicapped children could be curbed in physical education when the child gains 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 National Red Cross, 1977). This view was supported by Pomeroy (1964) in George and Hart (1983) when she stated that:

Much of the value of the group activity for the handicapped is due to the fact that achievement on the part of the group is shared by individual members, some of whom may not be able to gain individual success (p.11).

Such success increases the individuals' regard for their worth and abilities, and decreases the emotional impact of the disability.

The physically handicapped child needs to reason, to make judgement and to think in the same way as any normal child would. George and Hart (1983) are of the opinion that physical education and sport will help the physically handicapped child to fulfill these needs in a number of ways. When the physically handicapped child learns the rules of the game and how to apply them, learns to referee, umpire or score, the child is able to make instant decisions. This development and use of mental powers assist in preventing boredom in the life of the handicapped person. In umpiring and score keeping the child
becomes a valued member of the group.

French and Jansma (1982) advocated activities fitting the level of disability to control weight in *spina bifida* victims. The two authors further contended that throwing, hitting and catching problems of *spina bifida* victims can be tackled through practice in physical education lessons. For the same victims, George and Hart (1983, p.20) observed that the physical education programmes would:

(a) strengthen the trunk muscles and those of the arms, shoulder girdle, and whatever leg power is available.

(b) retrain perception when this proves to be a part of the problem.

(c) improve balance and co-ordination.

(d) improve wheelchair or walking skills

In 1976, Hook and Hooley reported that physical education will help the *cerebral palsied* children to attain neuromuscular habits in tasks of daily living. According to Hook and Hooley physical activity improves the strength and wellbeing of severely *cerebral palsied* persons. In support of this view, George and Hart (1983) observed that the physical education programme for the *cerebral palsied* child improves balance, co-ordination and concentration.

As for the *scoliotic* students, Sherrill (1981) noted that a well rounded programme of physical
activity will lead to "good posture and control" (p.125). Activities like swimming encourage the development of the trunk without placing the strain of weight bearing to the spine of the scoliotic student. According to Hook and Hooley (1976), physical activity increases the physically handicapped individual's awareness, self-concept and general learning ability.

In a way of summarizing the benefits that the physically handicapped can reap from physical education, Groves (1979) observed that:

Many aspects of physical education have very substantial impact on the all-round development of handicapped children (p.17).

In support of physical education for the physically handicapped, the General Conference of the United Nations Educational Scientific and Cultural Organization (U.N.E.S.C.O) of 1978 recommended that:

Special opportunities must be made available for young people ... and for the handicapped to develop their personalities to the full through physical education and sport programs suited to their requirements (p. 22).

2.1.2. Role of the P.E. Specialist in Teaching

Adapted P.E.

The success of the physical education programme in the special school will partially depend on the availability, adequacy and suitability of qualified teachers. Reporting about the programme for adapted
physical education, Arnheim, Auxter and Crowe (1977) were in support of this view when they wrote that:

Money, equipment, and support of the physician, nurse and other teachers are all important, but an enthusiastic well qualified teacher is a necessity (p. 415).

In order to create a suitable programme of physical education in the special school for the physically handicapped, an understanding of the motor aspects of the physical handicap is necessary. According to Price (1980), the handicap determines the activities to be included to a large extent. According to Hook and Hooley (1976), it is important that physical educators do all that is in their powers to understand the cause, movement problems and prognosis of each person with whom they work. In this way and with the continuing advice and evaluation of the medical team, the physical educators can provide the right physical education for each person in the group. All this calls for a well trained physical education teacher.

To work with confidence, physical education teachers for the physically handicapped need specialized training. Groves (1979) had the following to say about these teachers:

Teachers without special training in working with handicapped children are reluctant to risk possible injury to these 'special' pupils and are perhaps uninformed about the value of games and athletics to physically handicapped children. Equally, teachers working in special schools may have insufficient experience of physical education.
to attempt a very full programme (p.49).

The Ministry of Education, in 1987 recognized the need for specialist teachers for the disabled children in schools when it stated that:

Such children will require teachers with specialized training in addition to special instructional materials and equipment (p.46).

Other studies that have advocated for a physical education specialist teacher for the teaching of the physically handicapped children include those by: Daniel and Kaufman (1978); Ross (1985); Auka (1984); Cruinkshank (1975) in Kibisu (1984); Sherrill (1981) and Fait (1972).

2.1.3. Role Played by Support Services in Adapted P.E.

According to the Kamunge Report of 1988, Special education programmes require physiotherapists, occupational therapists, nurses and social workers. Such services are what the K.I.S.E Bulletin of 1987 called related services. Calhoun and Hawisher (1979) refers to the services as the:

Interdisciplinary team or a group of people - a team talking together, sharing ideas, and planning for some future event (p. 289).

Fait's (1972) views are in congruence with those of the Kamunge Report. Fait reported that the adapted physical education teacher needs the assistance of members of the medical personnel to examine and give
medical advice regarding the type and amount of physical activity in which a pupil can participate safely. The medical personnel also recommend the most beneficial activities as well as those which are not. In fact Fait (1972) has observed that the teacher should not attempt to include the student in the activities until he has received the student's medical recommendations. This ascertains that muscles will not be used incorrectly thus negating the therapeutic treatment.

The physical therapist works closely with the physical educator of the physically handicapped. Miller and Sullivan (1982) have indicated that the physical therapist's role is to advise the physical education teacher concerning the pupils' impairments and their correction or maintenance. Hook and Hooley (1976) described the therapist's role as treatment whereas the physical educator strives to provide the learner with approved big muscle exercise. Calhoun and Hawisher (1979) stipulated that the school physical education programme is intended to supplement the therapy supplied to the child. This stress was also expressed by: Fait (1972); Guttman (1976); Groves (1979) and French and Jansma (1982).

The teacher aide is another essential member of the support service team. Frith and Roswal in the Journal of Health, Physical Education, Recreation and Dance (JOHPERD) of June, 1981 noted that a properly
trained aide will be effective in assisting adapted physical education specialists to establish and implement specialized physical education programmes for handicapped children. According to Frith and Roswal, the teacher aide can assume an instructional role. The adapted physical education specialist frequently works with children whose physical abilities are heterogenous. The teacher aide can therefore assist in performing activities under the general guidance of the teacher. This allows for group division into smaller sub-groups resulting into a lower teacher/student ratio. Specifically, the teacher aide can be assigned the responsibilities of adapting the pupils' environment, leading activities in practical tasks introduced by the specialist and physically manipulating the pupils. For the slow learners the teacher aide can provide a one-to-one teacher/student relationship.

Other roles of the teacher aide in a physical education lesson as suggested by The American National Red Cross (1977) include transporting or assisting in transportation; assisting disabled individuals in dressing up; acting as safety lookouts and assisting in the general supervision of students. The role of the members of the support services team is to assist the child to benefit from the adapted physical education programme.
2.1.4 The Need for Equipment and Facilities in
Adapted P.E. Programmes

In order for the physical education programme in
the special school to succeed, it is essential to
have adequate and suitable facilities and equipment.
The need for facilities and equipment has been
documented in several studies. Studies conducted in
England and Wales by Kane in 1974 reported that
facilities like playing fields and gymnasia play an
important role in teaching and learning of physical
education.

The need for equipment and facilities becomes
extremely essential particularly when dealing with
physically handicapped persons. This is because the
physically handicapped need a special environment and
special learning resources to make learning not only
possible but also more effective. According to Ross
(1985) shortage of equipment and facilities "are a
double deprivation to the physically handicapped" (p
57). The facilities and equipment will help the
adapted physical education teacher to make proper
adjustments in the pupils' programme to meet their
special needs.

According to Kane (1974), "Facilities available
may affect, or may be thought to affect, the pursuit
of objectives" (p.37). This view was supported by
Underwood (1983) who noted that facilities influenced
the type of activity that can be included in the
physical education programme. The views of Underwood and Kane are practically reflected in the following statement which highlights the condition of acute shortage of facilities and equipment in Kenyan Secondary Schools:

In view of this inadequate supply, many physical education teachers have resorted to teaching only those activities in which facilities and equipment are available. (Ministry of Education, Teachers Guide for Secondary Physical Education, 1987, p.275).

According to Calhoun and Hawisher (1979), playground equipment can be designed to encourage therapeutic play. Special equipment and facilities will enable the physically handicapped to function as normal as possible during their physical education lessons. Other authorities who advocate the need for facilities and equipment for successful physical education programmes include: Fait (1972); Arnheim et. al. (1977); Fordham (1978); U.N.E.S.C.O. (1979); Kiganjo (1987); The Ministry of Education (1987) and the Kamunge Report (1988).

Effective teaching and learning of physical education to the physically handicapped will prosper where equipment and facilities are adapted accordingly. Auka (1984) clarified the importance of these requirements when she stated that:

Accessibility is not an end in itself but must be accompanied by possibilities of manipulating the equipment. This calls for adaptation and modifications of educational equipment and furniture so that the students can carry out learning activities as
independently as possible. (p. 2)

Cruinkshank (1975) in Kibisu (1984) reported that most of the handicapped children depending on the severity of the disability, cannot profit from the usual or ordinary educational curriculum or successfully adapt the typical classroom environment without special provisions. Among the special provisions listed down by Cruinkshank are specially prepared materials, ramps and mobility devices like crutches and wheelchairs.

Suitable adaptation assists the physical educator to meet the challenges of the unusual handicaps and hence meet the needs of the particular individuals. In regard to equipment, Sherrill (1981) recommended that variations be made "in terms of size, shape, texture and weight" (p. 96). The reduction in weight and size will assist those students with problems of strength and power.

Nets or basketball goals can be lowered for such students. For students with problems of coordination and accuracy Sherrill recommended larger, lighter and softer balls for catching and striking skills. She recommended smaller balls like yarn or nerve balls and bean bags for throwing events. Fait (1972) recommended that playing areas for games and sports be reduced in size. Other studies that have called for the reduction of playing areas are those by: Sherrill (1981); George and Hart (1983) and Auka (1984).
In recognition of the need for modification for both facilities and equipment, George and Hart observed that,

Volleyball on a full size court may be impossible for your group, but on a smaller court with a lower net and lighter ball, 'volleyball' can provide a great deal of enjoyment for handicapped children. (p.112).

2.2 REVIEW OF LITERATURE

The literature reviewed in this section was divided into two related sub-sections. The first sub-section concerned itself with general literature and empirical research findings based on regular physical education. The second sub-section covered a selection of literature and empirical studies which have been done on the teaching of physical education to the physically handicapped pupils.

2.2.1 General Literature

Several instructional problems that constrain the teaching of physical education at different levels of education have been reported. In her study of "Instructional Problems Encountered by Women Physical Education Teachers and Their Relation to Teaching Competency" in Minnesota, in 1970, Korri used 208 women physical education teachers in the Public Schools and 75 senior women majors. Using a checklist of problem areas, Korri identified the following problems: Limited and/or inadequate
facilities, large classes, providing for individual differences, motivation and providing for needs, interest and abilities of the students.

Roundy (1967) in Korri (1970) conducted a study in which he focussed on 'Problems of Boys Physical Education Teachers' in California and Utah. The purpose was to identify and rate both problems faced by boys' physical education teachers and competencies necessary to deal with those problems. Using an enquiry form where problem areas and competencies were listed, the investigator found out that problems listed as of major concern were mostly large classes, working with limited facilities and equipment and working in the area of adaptive physical education. The investigator concluded that many of the problem areas were related to large class enrollments and limited facilities. On this basis, he stressed the necessity of preparing future teachers to deal effectively with large classes.

The problem of limited facilities has also been reported by Scriven (1973). In a study commissioned by U.N.E.S.C.O. to survey the existing knowledge of planning and designing of sport facilities in the developing countries, which is applicable to Kenya, Scriven observed that the most frequently mentioned major problems facing physical education programmes in the study countries were lack of facilities like gymnasia, sports fields, playgrounds and playing
Scriven attributed the lack of facilities to shortage of funds to put up the facilities and to buy equipment.

Madeje (1981) conducted a study on the "Evaluation of The Implementation of The Physical Education Programme in Dar-es-Salaam City Primary Schools". He used interviews, observation and questionnaires and had Ministry of National Education administrators, teachers, pupils, parents and Dar-es-Salaam City education officials as subjects. From the findings, Madeje concluded that the unavailability of physical education equipment and facilities, lack of training by the physical education teachers and the negative attitude of some teachers, education and city council administrators towards physical education contributed a lot towards the poor implementation of the physical education programmes.

The studies of Kane (1974), Singer (1975) and Muniu (1986) have documented the problems which time factor poses to the 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 per week or a combination of both. Muniu used questionnaires and interviews to evaluate the effectiveness of the physical education curriculum in diploma colleges. Muniu established that in comparison to other subjects offered in the
diploma colleges, physical education received the least amount of time. This affected the completion of the syllabus in the particular colleges. Other problems identified by Muniu as constraining the teaching of physical education included lack of indoor facilities and lack of textbooks. On the length of the physical education period, Singer (1975) observed that:

The traditional scheduling of physical education lessons does not cater for such important activities like undressing or dressing which takes 10 minutes of each period, and another 10-15 minutes with undressing, showering and dressing at the conclusion of the activity (p.19).

Other critical instructional problems confronting physical education teachers and programmes cited by Singer included large classes, wide range of age and ability level of students.

In a study carried out in secondary schools in England and Wales, Kane (1974) found out that those departments that used offsite facilities spent up to 30% of physical education time journeying to and from the site. The study also found out that an average of 20% of physical education time was devoted to ancillary functions such as showering and changing before and after physical education lessons. This left only 50% of the lesson to be used in conducting activities. This adversely affected the instruction.

Hall (1973) analyzed the development of physical education programmes in Kenya. In his analysis, Hall
reported that facilities at all levels of school and outside school were inadequate. In conclusion, Hall said that lack of facilities had an adverse effect on the teaching of physical education. This problem has been echoed by a number of scholars from Kenya. Kiganjo's 1987 study investigated the problems encountered by physical education tutors at Kenyan primary Teachers Training Colleges. Kiganjo observed that classes were large and were characterised by a lack of adequate supply of textbooks. In addition, he observed a serious lack of indoor facilities and limited supply of outdoor facilities. Kiganjo established that all the above factors coupled with a poor attitude by some college administrators constrained the scope of the teaching and learning potentials.

From the above general literature, the following have been identified as instructional problems constraining the teaching of physical education at various educational levels both within and outside Kenya:

(a) Inadequacy or lack of facilities like gymnasia, swimming pools and sports fields.
(b) Inadequacy or lack of pieces of equipment.
(c) Inadequacy or lack of textbooks.
(d) Large classes.
(e) Limited time.
(f) Negative attitude towards P.E. by
administrators.

(g) Lack of adequate or relevant training in P.E. by the physical education teachers.

(h) Working in adaptive physical education.

(i) Wide age range and ability level of students.

(j) Providing for the needs, interest and abilities of students.

(k) Providing for the students' individual differences.

(l) Motivation. Teachers found it hard to motivate the pupils.

Problems (a), (b) and (c) have been directly related to lack of funds.

2.2.2 Specific Literature

The literature reviewed under this sub-section was of empirical nature and backed by publications in the area of adapted physical education for the physically handicapped.

Price (1980) attempted to identify the way in which physical education was administered within special schools for physically handicapped children. The study which was done in all schools catering for the physically handicapped children in England and Wales used a questionnaire for collecting the data. Price found out that:

(a) the wide range of ages, abilities and disabilities influenced the decisions about
the size and composition of groups, whether in the classroom, gymnasium or swimming pool. This usually resulted in instructional problems.

(b) There was an almost universal lack of purpose-built gymnasium and sports halls - only 8 schools out of 90 had a proper gymnasium.

(c) Half of the schools had no changing rooms.

(d) The time allocated for physical education to the physically handicapped was often inadequate and decreased the instruction time.

Concerning time usage, Price stated that:

Even if a houseparent or a classroom assistant is available to help with dressing, it can be a time consuming process. A 35 minute lesson might be sufficient for normal children but for the severely physically handicapped, this is no time at all (p.17).

Price concluded that lack of facilities, limited time and the wide range of ages, abilities and disabilities had adverse effects on the teaching of physical education to the physically handicapped.

The problem of wide range of individual abilities has been highlighted by Hook and Hooley (1976). According to the two authors, instruction for individuals with physical handicaps is difficult for a number of reasons. Hook and Hooley conceded that a group which is similar in appearance may need very
different types of activities; even those who are programmed into same activities may vary in amount and degree of participation. Though the groups may look similar, the differences exceed the similarities. Hook and Hooley have reported that since nearly every limb, joint or muscle may be the site of a physical handicap, "each child's limitation must be handled individually." (p.327).

In their study on *Recreation and Special Populations* Stein and Sessoms (1983) observed that beginning teachers of the physically handicapped have initial feelings of discomfort when first beginning to work with the physically handicapped persons, especially in physical education lessons. According to Stein and Sessoms, the beginning physical educators' expectations are inclined to underestimate the potential of the physically handicapped person and perhaps act in an overcautious way. This observation was supported by Sewe (1984) in Auka (1984) when the former stated that:

> We have tended to take on physically handicapped students to be very fragile, that even kicking a football may result in one having a fracture (p.2).

The major problem here is the tendency to extend an observable disability to a point where it encompasses the total individual. This constrains the teaching of physical education to the physically handicapped.
The problem posed by unadapted facilities to the physically handicapped persons during physical education lessons was reported by the Disabled Living Foundation Enquiry in 1970. In a study funded by the foundation to inspect facilities in institutions of the handicapped, the enquiry team reported that:

Many of the disabled using wholly unadapted premises could not be as independent as they would have wished and consequently needed a great deal of practical help (p.15).

When this occurred, the teacher spent much time assisting the physically handicapped pupils at the expense of instruction. Although the extent of modification needed depends on the severity of the disabilities, "lack of adaptation may result in elimination of excellent program opportunities." (Stein and Sessoms, 1983, p.20). This hampers the effective teaching of physical education to the physically handicapped.

Another critical problem confronting adapted physical education teachers and adapted physical education programmes as established by Arnheim et. al. (1977) is that of scheduling the physical education lessons. In their publication Arnheim et. al. (1977) reported that the limited class size for the physically handicapped pupils resulted into scheduling problems. Sherrill (1981) suggested an optimum class size of 25-30 pupils to allow for considerable individual differences in an adapted
physical education lesson. The small class size results in more classes/streams, making it a problem to schedule physical education lessons in the normally few facilities. This means that a large number of classes are out for physical education at the same venue at the same time - leading to congestion which causes instructional problems. The scheduling problem has also been cited by Fait (1972). The problem of scheduling can also be seen in the sense that handicapped children mainly use the gymnasium for their physical education lessons on medical grounds (Price, 1980).

Fait (1972) has reported that a restricting factor to the effective teaching of physical education to the handicapped is the heavy teaching loads of the physical education teachers. She explained that teachers of physical education have a higher number of class hours than other teachers. This results from the fact that physical education is not considered as a 'teaching' subject when the workload is being distributed.

Results of the above studies indicate that the major instructional problems confronting physical education teachers of the physically handicapped pupils include:

(a) Wide range of age, abilities and
disabilities.
(b) Lack of facilities like gymnasia and changing rooms.
(c) Use of unadapted facilities,
(d) Scheduling problems resulting from limited class size.
(e) Discomfort for beginning teachers.
(f) Heavy teaching loads.
(g) Inadequate time allocated for physical education.
(h) Feelings of unpreparedness to teach physical education to the physically handicapped resulting from lack of relevant training.
CHAPTER THREE

METHODOLOGY

3.0 INTRODUCTION

This chapter deals with the research design and the description of strategies and procedures used in this study. Specifically the chapter focuses on the description of research design, target population, sampling procedures, instruments used for data collection, procedures for data collection and data analysis.

3.1 THE RESEARCH DESIGN

The research design used in this study was a simple survey. The researcher employed this method because it was felt the most appropriate for the study. According to Borg and Gall (1983) "a wide range of education problems can be investigated in survey research", (p.405).

3.2 TARGET POPULATION AND SAMPLING PROCEDURES

The target population was confined to the academic staff of the six special primary schools of the physically handicapped pupils. This excluded all Homes and schools with integration or ready to initiate integration. Since the total number of
special primary schools for the physically handicapped is small, it was not found necessary to draw a sample. All the six schools were therefore used for the study (see Appendix C). Dagoretti Special Primary School was only used for the pilot study.

a) Teachers

Teachers formed the larger part of the study population. The target sample size comprised all the teachers presently teaching physical education in the six special schools. Thus, all the 42 teachers who fitted in this category were used as subjects in this study.

Teachers were selected for the study on the strength that they were in daily contact with the physically handicapped pupils where they offered academic instruction to the pupils and conducted physical activity programmes. They also advised and supervised the pupils. It was therefore hoped that they were in a good position to identify the instructional problems they encountered as they taught physical education to the physically handicapped.

b) Administrators

The administrators' sample size consisted of all headteachers or their deputies, in case of the absence of the headteacher presently in charge of the six special primary schools of the physically
handicapped. The administrators sampled included five headteachers and one deputy who all formed the second sample of the study.

These administrators were selected as respondents in the study because they provided educational leadership for all programmes in the schools. They also initiated plans for specialized facilities, equipment and other supplies. In most cases, all headteachers and their deputies have been teachers and as such have a wealth of knowledge about the teaching and learning that went on in their schools.

3.3 RESEARCH INSTRUMENTS

Library reading and literature review in all areas related to this study were carried out initially at Kenyatta University, Kenya Institute of Education and Kenya Institute of Special Education. The objective was to determine the instructional problems constraining the teaching of physical education to the physically handicapped pupils in special primary schools both in Kenya and elsewhere.

Information obtained from the literature review provided a basis for discussion by a departmental panel. Subsequent data gathered from the literature review and discussions were used to develop the following tools.

(i) A questionnaire for physical education
teachers.

(ii) An interview schedule for administrators, and

(iii) An observation schedule for collecting observed data.

It was found necessary to use more than one method of inquiry so as to obtain a variety of perspectives relating to the teaching of physical education to the physically handicapped pupils in special primary schools.

3.3.1 The Teachers' Questionnaire

The teachers questionnaire was the major tool for data collection. All the teachers in the study completed a direct-contact questionnaire (see Part 1 of Appendix B). The direct contact questionnaire was selected for use because of its suitability for the study. As Clarke and Clarke (1984) observed, the direct contact questionnaire motivates the respondents to answer questions, clarifies points, explains purpose of the study and establishes rapport with the respondents among many other advantages.

3.3.2 The Interview Schedule

The interview schedule basically covered the same areas that the questionnaire covered (see Part 2 of Appendix B). The interview schedule was preferred to the questionnaire for the headteachers, due to the
headteachers' usual busy schedules. The interview schedule was selected due to its suitability in allowing for interpretation of the meaning of questions, developing rapport with respondents, allowing greater depth of answers and allowing face to face contact between the interviewer and the interviewee and therefore making the collection of data a thorough exercise. Both the questionnaire and the interview schedules were used because according to Borg and Gall (1983), the two are the most commonly used instruments for data collection in a survey research. All the questionnaires and interview schedules were accompanied by a letter of transmittal each describing the aim of the study and appealing to the respondent to co-operate (see part 2 and 3 of Appendix A). For the case of interviews, the letter was read to the interviewees at the beginning of the interview sessions.

3.3.3 The Observation Schedule

An observation schedule for entering observed data from physical education lessons in progress within a specific environment was designed (see Part 3 of Appendix B). The schedule was also used to collect data pertaining to the physical education programme, availability and condition of physical education facilities, equipment and textbooks in the study schools.
The observation schedule was used for the study due to its applicability for the purpose of the study. According to Gronlund (1985), observation supplements and verifies data obtained by the more objective methods of questionnaires and interviews. He conceded that observational research enables researchers to determine how a pupil typically performs or behaves in a variety of situations. Furthermore he has named such behaviour as use of time, use of equipment and use of other resources. He goes further to say that observational techniques are especially useful in evaluating performance skills and certain aspects of personal-social development. The observation schedule was in form of checklists. This was done to suit Borg and Gall's (1983) requirement that the recording of observations could be made more simple and accurate by using checklists. Also Gronlund (ebd.) has named checklists as tools of observational research.

3.4 PILOT STUDY

The questionnaire, the interview and observation schedules were administered to the would-be respondents during the pilot study. All the eight physical education teachers and their headteacher in the pilot school were used as subjects. The teachers were asked to fill in the questionnaire, check clarity of items and instructions, any repetition of
questions and to estimate the time to be allowed for completion of the questionnaire. During the interview, the headteacher was requested to report any question that seemed ambiguous. During the observation, the investigator checked the usability of the observation schedule. The pilot study provided the investigator with an opportunity for further practice of interviewing and filling in both the interview and observation schedule. The pilot was also done to assess the type of responses the investigator expected from the field.

On the basis of the findings of the pilot study, the necessary modifications and adjustments were made to make the instruments more relevant in order to generate more meaningful data. The modified instruments were presented to the university supervisors and then to a subject panel for scrutiny of the items and passing of judgement on their adequacy. Both the supervisors' and panel's views and comments were considered by the investigator and only the items with unanimity of agreement from both parties were included in the instruments.

3.5 PROCEDURES FOR DATA COLLECTION

Data from individuals were obtained through questionnaires and interview schedules. Checklists were used to collect data on the teaching resources, information concerning the time-tabling of physical
education in the study schools and information concerning on-going physical education lessons. Any other information considered useful for the study was recorded in the form of written notes either during interviews or observation sessions.

Under the Standing Research Clearance awarded to Kenyan Universities/public institutions, a research permit No. OP.13/001/19C/275/2 was obtained from the Office of The President to enable the investigator to visit the schools to carry out the research. A letter seeking permission to conduct a research in the particular schools was written to all the headteachers of the study schools (see Part 1 of Appendix A). After obtaining the permit, the researcher visited all the sources of data and collected them personally.

The collection of data was limited to special primary schools for the physically handicapped. A pre-contact at every school became a pre-requisite to collection of data. Once the initial contact with the headteacher had been established, normally at the headteacher's office, permission was sought and the collection of data commenced. Part of the orientation exercise involved a request for independent and honest opinion to the best judgement of every respondent. During the administration of the questionnaire, extra care and restraint were exercised to avoid any interpretation which would
prejudice the responses. In all cases the teachers were given about 40 minutes to complete the questionnaire and hand it in to the investigator.

For the observation, the scheduled physical education lesson periods on the timetable were used for the lesson observations. During the observation of on-going lessons, the investigator trailed the pupils from class at the beginning of the physical education lesson to the venue of the lesson and back recording the required information accordingly.

It is well documented that the presence of the observer can affect the behaviour of those being observed (Borg and Gall, 1983). According to the two authors, the students being observed may not reflect their usual behaviour while the teachers might change their behaviour to the desired one if they learn the purpose of the study in advance. To reduce the non-representative observational data from both pupils and teachers which might have resulted from the presence of the observer, the investigator took the following precautions suggested by Borg and Gall (1983).

a) The observer made several visits to the classroom before any lesson observations.
b) The teachers were advised to prepare the pupils for the observation before it occurred.
c) The teachers were asked to introduce the observer when the latter entered the class or
venue of the lesson to start the observation. The above procedures were meant to satisfy the pupils' curiosity and to restore the normal classroom situation within a short time.

d) The teachers were met before the observation and informed that they could not be told about the nature of the research project before the observation because this could affect their behaviour. (For this reason, the lesson observation were carried out before the questionnaires were administered).

e) The teachers were not allowed to see the observation schedule forms.

Non participant observation was used instead of participant observation to allow the investigator to record the observations easily. Borg and Gall (1983) are of the opinion that the observer who uses participant observation will have difficulty in recording the observation and must rely on memory or use hidden recording equipment. It is also Borg and Gall's contention that participant observation is not widely used in educational research.

Interviews with the administrators were conducted when the investigator was not doing any observation or administering questionnaires. Prior arrangements were made with the administrators to organize the venue, time and day of the interview. The interview was administered in a selected room to
avoid interference. Interview responses were consistently recorded in the interview schedule forms in all the interviews.

3.6 DATA ANALYSIS PROCEDURES

Results which emerged from the investigation were examined, compared and interrelated. Data obtained through administration of questionnaires, interviews and observations were analyzed using a hand calculator into frequencies and percentages for interpretations. Ranks and means were calculated whenever this made the analysis of the results clearer. The data which could not be quantified were qualitatively analyzed particularly in regard to questionnaires and interviews. Detailed analysis of the data has been presented in Chapter Four of the study.
CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 INTRODUCTION

In this chapter, data pertaining to the research questions have been presented, analyzed and discussed. The key issues analyzed include sampling distribution and percent returns, biographical information on the respondents, availability and suitability of physical education resources, suitability of the physical education syllabus, adequacy of the time allocated for physical education and the teachers' workload. Other instructional problems that were found to constrain the teaching of physical education in the study schools have also been presented and discussed in this chapter. Possible solutions have also been presented. In each case the analysis and discussion are done after the presentation of the data pertaining to a particular issue.

4.1 SAMPLING DISTRIBUTIONS AND PER CENT RETURNS

Forty two teachers, (16 male and 26 female) responded to the teacher questionnaire representing a 100% return. The administrators interview responses comprised 50% female and 50% male. This sample was composed of five headteachers and one deputy
headteacher representing a 100% response. Out of the 42 lessons expected to be observed, 32 (76%) were observed. All the eight physical education lessons in one school were not observed as practical physical education was prohibited by the sponsors of the school at the time of the study. Two teachers in two different schools refused to conduct physical education lessons due to fear of legal liability.

4.2 BIOGRAPHICAL INFORMATION ON RESPONDENTS

Biographical information on respondents included sex, professional level, training in physical education of the physically handicapped, seminar attendance and teaching experience as in Table IV.1.
Table IV.1: Biographical Information on Respondents

| Variables                                      | No. and % of:       |
|                                               | Administrators | Teachers |
|                                               |                |
| **Sex**                                       |                |
| M                                             | 3 (50%)        | 16 (38%) |
| F                                             | 3 (50%)        | 26 (62%) |
| **Total**                                     | 6 (100%)       | 42 (100%) |

| Professional Grades                           |                |
| Untrained Teacher (UT)                        | 0 (0%)         | 1 (2%)  |
| Primary Teacher 3 (P3)                       | 0 (0%)         | 1 (2%)  |
| Primary Teacher 2 (P2)                       | 0 (0%)         | 3 (7%)  |
| Primary Teacher 1 (P1)                       | 4 (67%)        | 24 (57%)|
| Secondary Teacher 1 (S1)                     | 1 (17%)        | 9 (21%) |
| Diploma in Education (Dip. Ed.)               | 1 (17%)        | 4 (10%) |
| **Total**                                     | 6 (101%)       | 42 (99%) |

| Training in P.E. of the physically handicapped: |                |
| Trained                                        | 3 (50%)        | 8 (19%) |
| Not trained                                    | 3 (50%)        | 34 (81%)|
| **Total**                                      | 6 (100%)       | 42 (100%)|

| Seminar/course attendance on P.E. of the physically handicapped: |                |
| Attended                                                      | 2 (33%)        | 16 (38%) |
| Not attended                                                  | 4 (67%)        | 26 (62%) |
| **Total**                                                     | 6 (100%)       | 42 (100%)|

| Duration of teaching P.E. to the physically handicapped at primary school level |                |
| Have never taught                                             |                |
| < 1 year                                                      | 1 (17%)        | 0 (0%) |
| 1 - 5 years                                                  | 0 (0%)         | 11 (26%) |
| 6 -10 years                                                  | 5 (83%)        | 21 (50%) |
| 11 -15 years                                                 | 0 (0%)         | 9 (21%) |
| <15 years                                                    | 0 (0%)         | 1 (2%) |
| **Total**                                                    | 6 (100%)       | 42 (99%) |

* Total does not add up to exactly 100% because of rounding off errors.

The professional level of respondents was considered an important background factor worth
investigating. Sifuna (1973) found out that teachers' professional levels greatly influenced their quality of teaching. Those with higher qualifications were found to be more flexible and resourceful in their teaching than those with lower grades. It is clear from Table IV.1 that 98% of the teachers were trained and that 78% had PI or better grade. It may therefore be deduced from Table IV.1 that 78% of the teachers were competent enough to handle their teaching roles while 98% had some basic training on how to teach physical education to the normal pupils.

Primary school administrators have been appointed to their positions from any of the professional grades that exist in the schools. According to Digolo (1986), the higher the grade the more efficient the administrators are likely to be in their duties. It is also hoped that such administrators would be innovative, democratic and adaptive in curriculum implementation. From Table IV.1 all the administrators had a PI or better grade. It may therefore be argued that all the administrators in the study were efficient enough to provide educational leadership for all programmes in the schools including the initiation of plans for specialized facilities, equipment and other supplies.

Whether the respondents were trained to teach physical education to the physically handicapped or
Training inculcates theoretical knowledge and practical skills relevant to the special needs of the handicapped. Training the administrators in physical education for the physically handicapped enlightens them on the type of resources that such a population would require during physical education lessons. Also administrators are expected to teach various subjects in different classes like any other teacher besides performing administrative duties. The administrators therefore need the specialized training if they are to teach physical education effectively. Results presented in Table IV.1 show that 81% of the teachers and 50% of the administrators were not trained to teach physical education to the physically handicapped.

The theoretical knowledge and practical skills relevant to the special needs of the handicapped children could also be obtained by attending inservice courses or seminars. Concerning inservice course or seminar attendance, Table IV.1 indicates that only 38% of the teachers and 33% of the administrators had attended either an inservice or seminar in which physical education of the physically handicapped was discussed. A close scrutiny of the questionnaires and interview schedules revealed that all the administrators and teachers who had been trained in physical education of the physically handicapped were considered an important aspect for the study.
handicapped were among the respondents who attended the inservice courses.

Through a discussion, those teachers who had been trained to teach physical education to the physically handicapped claimed that they got minimal practical experience. The teachers said that during the teaching practice session, teaching of physical education was optional and that most of them opted not to teach it. From the results in the third and fourth rows of Table IV.1, it can be concluded that 62% of the teachers and 50% of the administrators did not have the skill and knowledge needed in handling the physically handicapped during physical education lessons. These findings on lack of specialized training are in agreement with Sewe's (1986) observation that there is lack of expertise in physical education teachers of the physically handicapped. According to Sewe, the lack of expertise resulted from lack of special training in the particular area.

Another background factor that was deemed necessary for the study was the duration of teaching physical education to the physically handicapped pupils at primary school level. Duration of teaching in any given primary school provides the vital opportunity for acquiring the knowledge about the type of disabilities the pupils in the school have and the resources that would be used during teaching
to enrich the learning experiences. The duration gives the teacher or administrator an opportunity to identify the common instructional problems during physical education lessons. A duration of one year was considered to be relatively long enough to allow the teacher/administrator to acquire the above.

As shown in the last row of Table IV.1, 83% of the administrators and 73% of the teachers had a duration of one year and above in which they taught physical education to the physically handicapped. It may therefore be inferred from the results that majority of the teachers had spent adequate time teaching physical education to the physically handicapped and were therefore in a good position to suggest the problems that they encountered as they taught physical education to the physically handicapped. It may also be argued that the administrators had enough experience in physical education of the physically handicapped to allow them to suggest the constraints limiting the teaching of physical education in the special schools as well as suggesting solutions to those problems.

4.3 LEARNING RESOURCES

This section focussed on the availability, adequacy and condition of the physical education resources such as facilities, equipment and textbooks. The section was divided into two parts.
The first part covers facilities while the other one covers equipment and textbooks.

4.3.1 Facilities

The facilities considered in this section were those that were needed for conducting activities in the primary school physical education syllabus. Such facilities included athletics track, soccer pitches, netball courts, volleyball courts, rounders courts, hockey pitches, basketball courts, handball courts, teniquoit courts, swimming pools, gymnasium and others. Results of the data analysis pertaining to this area are presented in Table IV.2
Table IV.2: Availability, Adequacy and Condition of Physical Education Facilities.

<table>
<thead>
<tr>
<th>Variables</th>
<th>No. and % of:</th>
<th>Administrators</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level of adequacy of maintenance of permanent playing facilities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequate</td>
<td>1 (17%)</td>
<td>10 (24%)</td>
<td></td>
</tr>
<tr>
<td>Inadequate</td>
<td>5 (83%)</td>
<td>19 (45%)</td>
<td></td>
</tr>
<tr>
<td>Very inadequate</td>
<td>0 (0%)</td>
<td>12 (29%)</td>
<td></td>
</tr>
<tr>
<td>No response</td>
<td>0 (0%)</td>
<td>1 (2%)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6 (100%)</td>
<td>42 (100%)</td>
<td></td>
</tr>
<tr>
<td><strong>Are present facilities adequate?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2 (33%)</td>
<td>5 (12%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>4 (67%)</td>
<td>37 (88%)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6 (100%)</td>
<td>42 (100%)</td>
<td></td>
</tr>
<tr>
<td><strong>Does inadequacy of facilities constrain the teaching of P.E?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>6 (100%)</td>
<td>36 (86%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0 (0%)</td>
<td>6 (14%)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6 (100%)</td>
<td>42 (100%)</td>
<td></td>
</tr>
<tr>
<td><strong>Are facilities for use during wet weather available?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>3 (50%)</td>
<td>20 (48%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>3 (50%)</td>
<td>22 (52%)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6 (100%)</td>
<td>42 (100%)</td>
<td></td>
</tr>
<tr>
<td><strong>Does lack of facilities for use during wet weather constrain the teaching?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>3 (50%)</td>
<td>22 (52%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>3 (50%)</td>
<td>20 (48%)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6 (100%)</td>
<td>42 (100%)</td>
<td></td>
</tr>
<tr>
<td><strong>Are present facilities adapted?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>3 (50%)</td>
<td>20 (48%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>3 (50%)</td>
<td>22 (52%)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6 (100%)</td>
<td>42 (100%)</td>
<td></td>
</tr>
<tr>
<td><strong>Does the use on unadapted facilities constrain teaching?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4 (67%)</td>
<td>34 (81%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>2 (33%)</td>
<td>8 (19%)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6 (100%)</td>
<td>42 (100%)</td>
<td></td>
</tr>
</tbody>
</table>
It is clear from Table IV.2 that 74% of the teachers and 83% of the administrators indicated that the maintenance of permanent playing facilities was either inadequate or of poor standard. It was observed that the grass fields in two different schools were overgrown while one of the only two swimming pools in all the six schools was not functional. Demarcations of most of the available courts were not clear as the markings had faded.

On the adequacy of facilities, 67% of the administrators and 88% of the teachers noted that the facilities were inadequate. As to whether the inadequacy of the facilities constrained the teaching of physical education all six administrators and 86% of the teachers answered in the affirmative. Observation of facilities in one school revealed that the so called grass field did not meet the definition of a play field due to its poor standard. The 'field' was very small and had only patches of grass. In the neighbourhood of this school was a standard field which contained both a soccer field and netball court. Surprisingly the headteacher of the primary school could not see the need to use facilities within the neighbourhood. In another school overcrowding was observed as four classes struggled to fit into a small grass field for a physical education lesson. Half of the administrators claimed that some sections of the syllabus were frequently
left out due to lack of facilities. These findings on inadequacy of facilities correspond with those from a study by Price (1980) which concluded that lack of facilities had an adverse effect on the teaching and learning of physical education.

Results in Table IV.2 concerning availability of facilities for use during wet weather show that the responses were evenly distributed. Fifty percent of the administrators and 48% of the teachers reported in the affirmative while the rest answered in the negative. A systematic observation revealed that two schools had one gymnasium each and another two schools had sports halls (one school with two such halls and the other with one). Ten of the 32 lessons observed were conducted in classrooms. It is also clear from Table IV.2 that 50% of the administrators and 52% of the teachers pointed out that lack of facilities for use during wet weather constrained the teaching of physical education. When probed, 52% of the teachers disclosed that due to lack of indoor facilities for physical education, time allocated for physical education lessons was used to teach other subjects. These results suggest that the administrators and teachers who indicated that lack of wet weather facilities limited the teaching of physical education, did not consider the possibility of using the classrooms during unfavourable weather. This is a clear indication that those teachers were
not making use of their improvisation knowledge. They could have improvised classrooms for a gymnasium like ten of their counterparts did.

Concerning the adaptability of facilities, Table IV.2 indicates that 50% of the administrators and 48% of the teachers noted that facilities in their schools were adapted. Observation revealed that out of the five netball pitches available in the schools observed, three were adapted. Similarly two out of the four volleyball courts available were adapted. Further observation revealed that only two out of the five soccer pitches available in the schools observed were adapted. All the venues of physical education lessons were accessible by wheelchair.

As to whether use of unadapted facilities constrained the teaching of physical education, 67% of the administrators and 81% of the teachers replied in the affirmative. When asked to explain, 50% of the administrators and 60% of the teachers explained that some pupils could not use unadapted facilities at all. Seventy five percent of the administrators and 50% of the teachers contended that physically handicapped pupils strained a lot when they used unadapted facilities. The findings of this section of the study are in agreement with other previous investigations by George and Hart (1983), Disabled Living Foundation Enquiry (1970) and Stein and Sessoms (1983) which contended that without adapted facilities the physically handicapped would have to forgo some physical education programmes.

4.3.2 Equipment and Textbooks

On pieces of equipment and textbooks needed for the smooth coverage of the physical education syllabus in the primary schools, it was found that these were inadequate as presented in Table IV.3
Table IV.3: Availability, Adequacy and Condition of Physical Education Equipment and Textbooks

<table>
<thead>
<tr>
<th>Variables</th>
<th>Administrators</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are pieces of equipment adequate?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2 (33%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>No</td>
<td>4 (67%)</td>
<td>41 (98%)</td>
</tr>
<tr>
<td>Total</td>
<td>6 (100%)</td>
<td>42 (100%)</td>
</tr>
<tr>
<td>Does the inadequacy constrain teaching?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4 (67%)</td>
<td>40 (95%)</td>
</tr>
<tr>
<td>No</td>
<td>2 (33%)</td>
<td>2 (5%)</td>
</tr>
<tr>
<td>Total</td>
<td>6 (100%)</td>
<td>42 (100%)</td>
</tr>
<tr>
<td>Are the pieces of equipment adapted?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1 (17%)</td>
<td>3 (7%)</td>
</tr>
<tr>
<td>No</td>
<td>5 (83%)</td>
<td>39 (93%)</td>
</tr>
<tr>
<td>Total</td>
<td>6 (100%)</td>
<td>42 (100%)</td>
</tr>
<tr>
<td>Does the unadaptability constrain the teaching?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4 (67%)</td>
<td>40 (95%)</td>
</tr>
<tr>
<td>No</td>
<td>2 (33%)</td>
<td>2 (5%)</td>
</tr>
<tr>
<td>Total</td>
<td>6 (100%)</td>
<td>42 (100%)</td>
</tr>
<tr>
<td>Are physical education textbooks for teachers available?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4 (67%)</td>
<td>37 (88%)</td>
</tr>
<tr>
<td>No</td>
<td>2 (33%)</td>
<td>5 (12%)</td>
</tr>
<tr>
<td>Total</td>
<td>6 (100%)</td>
<td>42 (100%)</td>
</tr>
<tr>
<td>Does the lack of textbooks constrain the teaching of physical education?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4 (67%)</td>
<td>36 (86%)</td>
</tr>
<tr>
<td>No</td>
<td>2 (33%)</td>
<td>6 (14%)</td>
</tr>
<tr>
<td>Total</td>
<td>6 (100%)</td>
<td>42 (100%)</td>
</tr>
</tbody>
</table>
Table IV.3 clearly reveals that 67% of administrators and 98% of the teachers considered the equipment available in their institutions inadequate for use during physical education lessons. Through lesson observations, it was found that out of the 75% of the lessons in which equipment were used, the pieces of equipment were used individually in only 4% of the lessons and in pairs in 8% of the lessons. The pupils used the equipment in small groups in 42% of the lessons and as a class in 46% of the lessons.

An observation of equipment in the respective schools revealed that equipment for swimming (floats and costumes) were available in only one school. The only school with hockey equipment had only one stick. Teniquoit, table tennis and darts equipment were available in 50% of the schools. However, one of the schools had only two functional rings. The other two schools had old and defective rings. A single table-tennis bat was found in one of the schools. Equipment for netball and gymnastics were available in 67% of the schools. One of the schools had only one ball which was both defective and non-adaptable while two schools had one functional normal size ball each. While all the six schools had normal size footballs, volleyballs were available in only two schools.

It was interesting to note that one school had two sport wheelchairs: One for throws and the other for
track events. However, the chairs were used only for annual games and sports for the physically handicapped. It was surprising to note that none of the schools had equipment for badminton, bowling, cricket, lawn tennis, basketball and handball despite the inclusion of the last two sporting activities in the primary school syllabus.

From these results it is evident that most of the equipment available in the study schools were not useful for teaching purposes. This resulted from lack of accessories. An example is where a school had only bats for table-tennis with no balls or a table. This situation can be explained by the over-enrolment and scheduling problems discussed later in the chapter. A class with many pupils will require more equipment as opposed to the one with fewer pupils. Also when many classes are out for physical education at the same time, they will require more equipment than when only one class is out for physical education.

As shown in Table IV.3, 95% of the teachers and 67% of the administrators both agreed that inadequacy of equipment constrained the teaching of physical education. When asked to explain, 86% of the teachers and 67% of the administrators said that due to lack of some equipment some skills were left out. The administrators and teachers also explained that physical education lessons without equipment were not enjoyed by the pupils. From the lesson observations,
30 pupils were found using only two balls. This made the pupils wait for a long time before they could practise the skill introduced by the teacher. In another lesson, pupils waited in turns to skip in pairs since there was only one rope in a group of six pupils. The waiting in turns kept two pupils in every group idle. This took a lot of pupils' valuable time leaving only a short time for useful activity by the pupils.

Another important factor concerning the equipment that was considered was their adaptability. Results presented in Table IV.3 show that 83% of the administrators and 93% of the teachers reported that the equipment used in their schools were not adapted to suit the physically handicapped. Findings from lesson observations supported the respondents' report. Out of the 32 lessons observed, adapted equipment were used in only 37% of the lessons. Such pieces of equipment included bean bags, improvised balls and small size factory made balls. Observation of the available pieces of equipment in the study schools disclosed that all the darts, table-tennis, netball, volleyball, teniquoit and soccer equipment were not adapted. In a discussion, the teachers claimed that they adapted the balls by increasing or reducing pressure.

The impact of unadapted equipment on the teaching of physical education was assessed in this
section of the study. From Table IV.3 it can be observed that 67% of the administrators and 95% of the teachers considered unadapted equipment as constraints to the teaching of physical education. Observation data revealed that the size of the unadapted footballs was a major problem to the pupils with weak hands or legs. Such pupils could neither hold nor throw the balls used in some lessons. In one of the lessons, a standard two pupil ducked to avoid the contact of a normal size football that was being used for the skill of heading in soccer.

Availability of textbooks were assessed in this section of the study. The results presented in Table IV.3. show that 67% of the administrators and 88% of the teachers noted that their schools had textbooks for teachers. Through observation, it was noted that out of the six schools in the study, one of them had nine different textbooks; two of the schools had two different sets of textbooks each; one of the schools had one textbook only while the remaining two schools did not have any physical education textbook. Further observation revealed that all the textbooks available were not meant for the physically handicapped. The common syllabi prepared by K.I.E and used in all the study schools were general and did not address the needs of the physically handicapped.
Concerning the effects that lack of textbooks had on the teaching of physical education, 67% and 86% of administrators and teachers respectively reported that teaching was constrained. When asked to explain how the teaching was constrained, 28% of the teachers reported that they found it difficult to choose suitable activities or to adapt the activities. Twenty five per cent explained that there was no other source of activities for the physically handicapped while 19% said that the activities in the syllabi were not adapted and could therefore be harmful to the physically handicapped pupils.

All the six teachers who indicated that lack of textbooks did not constrain their teaching explained that they used the available textbooks and syllabus to modify activities for the physically handicapped pupils accordingly. A further scrutiny of the responses in the questionnaires revealed that the six respondents were among the eight teachers that had some training in physical education of the physically handicapped.

The findings obtained from the research question related to this section confirm the fact that knowledge and skill of handling the handicapped is attained through preservice or inservice courses on the specific handicaps. This is supported by the fact that those teachers who had been trained to
teach physical education to the physically handicapped were able to modify activities meant for the normal pupils to suit the physically handicapped.

4.4 THE PHYSICAL EDUCATION PROGRAMME

The data which were analyzed and presented in this section concerned the interpretation of the physical education syllabus, relevance of activities, clarity of the objectives and their achievement by the physically handicapped. A summary of results concerning this information is tabulated in Table IV.4.
Table IV.4: Suitability of the Physical Education Programme

<table>
<thead>
<tr>
<th>Variables</th>
<th>No. and % of:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Administrators</td>
<td>Teachers</td>
</tr>
<tr>
<td>level of interpretation:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- very easy to interpret</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>- easy to interpret</td>
<td>0 (0%)</td>
<td>3 (7%)</td>
</tr>
<tr>
<td>- undecided</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>- difficult to interpret</td>
<td>6 (100%)</td>
<td>39 (93%)</td>
</tr>
<tr>
<td>Total</td>
<td>6 (100%)</td>
<td>42 (100%)</td>
</tr>
</tbody>
</table>

Does the problem of interpretation constrain the teaching?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 (83%)</td>
<td>1 (17%)</td>
</tr>
<tr>
<td></td>
<td>34 (81%)</td>
<td>8 (19%)</td>
</tr>
<tr>
<td>Total</td>
<td>6 (100%)</td>
<td>42 (100%)</td>
</tr>
</tbody>
</table>

Level of relevance of activities:

<table>
<thead>
<tr>
<th></th>
<th>Administrators</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>- very irrelevant</td>
<td>0 (0%)</td>
<td>2 (5%)</td>
</tr>
<tr>
<td>- irrelevant</td>
<td>4 (67%)</td>
<td>34 (81%)</td>
</tr>
<tr>
<td>- not sure</td>
<td>0 (0%)</td>
<td>2 (5%)</td>
</tr>
<tr>
<td>- relevant</td>
<td>2 (33%)</td>
<td>3 (7%)</td>
</tr>
<tr>
<td>- very relevant</td>
<td>0 (0%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>Total</td>
<td>6 (100%)</td>
<td>42 (100%)</td>
</tr>
</tbody>
</table>

Level of clarity of objectives:

<table>
<thead>
<tr>
<th></th>
<th>Administrators</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>- very vaguely stated</td>
<td>1 (17%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>- vaguely stated</td>
<td>4 (67%)</td>
<td>37 (83%)</td>
</tr>
<tr>
<td>- not sure</td>
<td>1 (17%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>- clearly stated</td>
<td>0 (0%)</td>
<td>2 (5%)</td>
</tr>
<tr>
<td>- very clearly stated</td>
<td>0 (0%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>Total</td>
<td>6 (101%)*</td>
<td>42 (99%)*</td>
</tr>
</tbody>
</table>

Level of achievement of objectives:

<table>
<thead>
<tr>
<th></th>
<th>Administrators</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>- very easily achievable</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>- easily achievable</td>
<td>0 (0%)</td>
<td>2 (5%)</td>
</tr>
<tr>
<td>- not sure</td>
<td>0 (0%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>- difficult to achieve</td>
<td>6 (100%)</td>
<td>37 (88%)</td>
</tr>
<tr>
<td>- impossible to achieve</td>
<td>0 (0%)</td>
<td>2 (5%)</td>
</tr>
<tr>
<td>Total</td>
<td>6 (100%)</td>
<td>42 (100%)</td>
</tr>
</tbody>
</table>

Continued
<table>
<thead>
<tr>
<th>Variables</th>
<th>No. and % of:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Administrators</td>
<td>Teachers</td>
<td></td>
</tr>
<tr>
<td>Are guidelines for selection of activities clear?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1 (17%)</td>
<td>6 (14%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>5 (83%)</td>
<td>36 (86%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6 (100%)</td>
<td>42 (100%)</td>
<td></td>
</tr>
<tr>
<td>Does the lack of clarity of guidelines constrain the teaching?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>6 (100%)</td>
<td>37 (88%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0 (0%)</td>
<td>5 (12%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6 (100%)</td>
<td>42 (100%)</td>
<td></td>
</tr>
<tr>
<td>Can all the activities in the syllabus be performed by the physically handicapped?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>6 (100%)</td>
<td>42 (100%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6 (100%)</td>
<td>42 (100%)</td>
<td></td>
</tr>
<tr>
<td>Comment about the suitability of the P.E. syllabus to the physically handicapped.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Suitable</td>
<td>1 (17%)</td>
<td>8 (19%)</td>
<td></td>
</tr>
<tr>
<td>- Not Sure</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td></td>
</tr>
<tr>
<td>- Unsuitable</td>
<td>5 (83%)</td>
<td>34 (81%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6 (100%)</td>
<td>42 (100%)</td>
<td></td>
</tr>
</tbody>
</table>

* Total does not add up to exactly 100 because of rounding off errors.*
Table IV.4 shows that all the six administrators and 93% of the teachers indicated that the physical education curriculum in special primary schools was difficult to interpret. The seven per cent of the teachers who found curriculum interpretation easy were among the 19% of the teachers who were trained to teach physical education to the physically handicapped. On further investigation, 83% of the administrators and 81% of the teachers indicated that the problem of interpretation hindered the teaching of physical education. As to how the interpretation hindered the teaching, 50% and 70% of administrators and teachers respectively explained that the teachers were left to guess what activities were good for the pupils. Thirty three per cent of administrators and 20% of the teachers concurred that the teachers were afraid of conducting physical education lessons to avoid injuring the physically 'weak' pupils.

Observation results supported the second problem advanced by the respondents. Two teachers refused to conduct physical education lessons claiming that they had not been trained to teach physical education to the physically handicapped. The two teachers expressed concern over the 'weak' state of the pupils and feared legal liability suits.

Results on level of relevance of activities in Table IV.4 show that 81% of the teachers and 67 of the administrators found the activities in the
physical education syllabus irrelevant as far as the physically handicapped pupils were concerned. Five per cent of the teachers found the activities very irrelevant. Only 7% of the teachers and 33% of the administrators found the activities relevant.

Concerning the level of clarity of objectives, Table IV.4 shows that 88% of the teachers and 67% of the administrators reported that the objectives were vaguely stated. Only 7% of the teachers found the objectives either clearly or very clearly stated. Successful utilization of equipment and selection of activities is determined to a large extent by the objectives and interpretation of such objectives by the physical education teachers. From the responses about the level of clarity of objectives, it could be concluded that the objectives were vaguely stated. This vagueness would therefore influence the selection of activities and the utilization of learning resources in physical education.

When the respondents were asked to classify the objectives in terms of achievement by the physically handicapped, 88% of the teachers and all the six administrators noted that the objectives were difficult to achieve. Five per cent of the teachers found the objectives impossible to achieve and a similar percentage of the teachers found the objectives easily achievable. A review of objectives stated for physical education in the primary school
syllabus revealed a lack of articulation of the objectives with regard to the physically handicapped.

In the primary school physical education syllabus produced in 1986, some guidelines are provided for the selection of activities for the physically handicapped. The success of selecting activities by the physical education teachers largely depends on the understanding of the guidelines by the teachers. On being asked whether the guidelines were clear to them, 86% of the teachers and 83% of the administrators answered in the negative. (see Table IV.4, row 6).

On further investigation, it was found that due to the lack of clarity, the guidelines were not useful to the teachers. Eighty eight per cent of the teachers and all the six administrators reported that lack of clarity in the guidelines constrained the teaching of physical education, (Table IV.4, row 7). Under this condition, the teachers concerned found themselves limited in the selection of teaching skills. Certainly, this negatively affected the teaching of physical education. Since most physical education teachers rely on the syllabi for guidance, the lack of clarity in this document and the lack of spelt out guidelines are among the major problems that face the physical education teachers of the physically handicapped.

The physical education syllabus is composed of a
list of activities meant for the pupils to engage in. When the respondents were asked whether the activities could be performed by the physically handicapped, all the 42 teachers and 6 administrators answered in the negative. Lesson observations revealed that out of the 32 lessons observed, it was in only 19% of them that all the pupils managed to do the activities demonstrated or explained by the teacher. Those pupils on wheelchair could not manage to do bending or pairing up activities.

Commenting about the suitability of the physical education syllabus to the physically handicapped, 80% of the teachers and 83% of the administrators noted that the syllabus was not suitable at all. This observation from the respondents concur with that of Mwinga (1988) in K.I.S.E. Bulletin of 1988. After analysing the upper primary syllabi, Mwinga, concluded that the physically handicapped children were less catered for especially in subjects involving practical skill approaches such as home science, art or craft. Although not included in Mwinga's list, physical education is among the subjects involving practical skill approaches.

4.5 TIME FACTOR AND THE PHYSICAL EDUCATION PROGRAMME

This section mainly centred on the use of time allocated for physical education in the special primary schools. Specifically, the section reported,
analyzed and discussed information concerning use of offsite facilities, time taken by pupils to move from class to venue of the physical education lesson and back, whether pupils removed mobility aids and whether they changed into physical education kits. The respondents' views on the length of the physical education lesson with respect to the physically handicapped pupils were also considered. Whether the length of the lesson was a constraint to the teaching of physical education or not was also a concern for this section. Results of data analysis pertaining to this section are tabulated in Table IV.5.
Table IV.5: Views on Time Factor and the Physical Education Programme

<table>
<thead>
<tr>
<th>Variables</th>
<th>No. and % of Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do pupils change into P.E. kits during P.E. lessons? Yes</td>
<td>16  38%</td>
</tr>
<tr>
<td>Do pupils change into P.E. kits during P.E. lessons? No</td>
<td>26  62%</td>
</tr>
<tr>
<td>Total</td>
<td>42  100%</td>
</tr>
<tr>
<td>Do pupils remove mobility aids before P.E. lessons? Yes</td>
<td>36  86%</td>
</tr>
<tr>
<td>Do pupils remove mobility aids before P.E. lessons? No</td>
<td>6   14%</td>
</tr>
<tr>
<td>Total</td>
<td>42  100%</td>
</tr>
<tr>
<td>I find the P.E. lesson:</td>
<td></td>
</tr>
<tr>
<td>- too long</td>
<td>0   0%</td>
</tr>
<tr>
<td>- long</td>
<td>0   0%</td>
</tr>
<tr>
<td>- Enough</td>
<td>2   5%</td>
</tr>
<tr>
<td>- Short</td>
<td>20  48%</td>
</tr>
<tr>
<td>- Too short</td>
<td>20  48%</td>
</tr>
<tr>
<td>Total</td>
<td>42  101% *</td>
</tr>
<tr>
<td>Does the length of the P.E. lesson constrain the teaching of P.E.?</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>37  88%</td>
</tr>
<tr>
<td>No</td>
<td>5   12%</td>
</tr>
<tr>
<td>Total</td>
<td>42  100%</td>
</tr>
</tbody>
</table>

Mean time taken by pupils to change and remove mobility aids as:--
(i) estimated by P.E. teachers = 7 minutes
(ii) revealed through lesson observation = 4 minutes

Mean time taken by pupils to travel from class to venue of lesson as:--
(i) estimated by P.E. teachers = 6 minutes
(ii) revealed through lesson observation = 5 minutes

*Total does not add up to exactly 100% because of rounding off errors.

Considering the teachers' responses concerning changing of pupils presented in Table IV.5, only 38%
of the teachers who reported that pupils changed into physical education kits. However, 86% of the teachers reported that the pupils removed the mobility aids such as braces and calipers before the physical education lessons. The investigator found that pupils removed mobility aids in 97% of the lessons observed. Any other type of changing involved removal of cardigans or coats as either the pupils did not have physical education kits or did not want to change into them. The removal of coats or cardigans was however minimal.

When asked to estimate the time taken by the pupils to change and remove mobility aids, the teachers gave various timings as presented in Table IV.5. The mean of 4 minutes got through lesson observation would seem to vindicate the teachers' estimation of 7 minutes. This difference may be attributed to the presence of the observer during the physical education lessons. Although the investigator had taken all the necessary precautions to avoid the observer effect (see Chapter Three, section 3.5), the investigator's presence might have motivated the pupils to change faster than they usually did.

As far as showering and use of offsite facilities were concerned, both the teachers' responses and observation results revealed that the pupils did not shower after a physical education
lesson or use offsite facilities. Concerning the time taken by the pupils to travel from class to the venue of the lesson, the mean calculated from the teachers' responses and the one got through observation were almost in agreement - that is, 6 minutes against 5 minutes respectively. (see last row of Table IV.5). Further observation revealed that in some two incidents, the lessons were started with only a handful of pupils. Other pupils joined as the lesson progressed. Teachers who conducted their lessons indoors spent an average of 6 minutes organizing the classroom.

On the length of the lesson, 96% of the teachers noted that the lessons were either short or too short for physical education purposes of the physically handicapped. Only five per cent of the teachers found the length of the lesson enough. As to whether the length of the lesson constrained the teaching of physical education, 88% of the teachers responded in the affirmative. (see Table IV.5 row 4). When asked how adversely the short physical education duration affected the teaching, 86% of the teachers argued that a considerable amount of time was spent either travelling to and from the venue of the physical education lesson, changing into physical education kit or removing and putting on the mobility aids.

A systematic observation in the study schools established that lower primary pupils spent 15
minutes in ancillary functions like changing before and after the lesson, travelling to and from the venue of the physical education lesson or organizing the room for lessons conducted indoors. Upper primary pupils spent an average of 18 minutes per class for similar functions. The implication here is that lower primary pupils spent $\frac{15}{30} \times 100$ or 50% of the lesson in ancillary functions while their counterparts in upper primary spent $\frac{18}{30} \times 100$ or 51.4% of the lesson time for similar functions. It can therefore be argued that at least half of the lesson is used by the physically handicapped for ancillary functions in preparation for the physical education lesson. This leaves only a few minutes for physical education activities which is normally not enough.

These findings are in support of others from a previous study by Price (1980) on the situation in special schools for physically handicapped children in England and Wales. In that study Price found that the time allocated for physical education was not adequate for the physical education purposes of the physically handicapped.

4.6 TEACHERS’ WORKLOAD

The number of lessons that a teacher taught per week was considered an important factor that could adversely affect the teaching of physical education.
This is especially so if the teacher is assigned teaching duties beyond the recommended workload. It is a common occurrence in our educational institutions for physical education teachers to be given more workload than other teachers with the conviction that physical education is not a 'teaching' subject. This section sought to present, analyze and discuss findings pertaining to the teachers' workload and the effects it had on the teaching of physical education. Table IV.6 summarizes the findings on this issue.

Table IV.6: Teachers' Workload and Its Effects on the Teaching of Physical Education

<table>
<thead>
<tr>
<th>Variables</th>
<th>No. and % of: Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of lessons taught per week</td>
<td></td>
</tr>
<tr>
<td>11 - 20</td>
<td>7</td>
</tr>
<tr>
<td>21 - 30</td>
<td>23</td>
</tr>
<tr>
<td>31 - 40</td>
<td>8</td>
</tr>
<tr>
<td>&gt; 40</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
</tr>
<tr>
<td>Effects of Workload . I feel:-</td>
<td></td>
</tr>
<tr>
<td>(i) overworked</td>
<td>5</td>
</tr>
<tr>
<td>(ii) underworked</td>
<td>0</td>
</tr>
<tr>
<td>(iii) adequately loaded</td>
<td>37</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
</tr>
</tbody>
</table>

* Total does not add up to exactly 100% because of rounding off errors.
Results presented in Table IV.6 show that 88% of the teachers felt adequately loaded. The workload did not deter them from teaching physical education effectively. Only 12% of the respondents considered themselves overloaded. On the basis of these findings it can be concluded that the teachers' workload was not a major constraint to the teaching of physical education. These findings conflict with Faits' (1972) assertion that heavy teaching loads of physical education teachers restricted them to teach physical education effectively. A possible explanation of the low teaching load of teachers in the study schools is the fact that all these schools had single streams and they were located in urban areas where facilities like transport, hospitals, schools and other social amenities were within reach.

4.7 PROBLEMS CONSTRAINING THE TEACHING OF PHYSICAL EDUCATION

Teaching of physical education in special primary schools is affected by several factors some of which were investigated by this study (see Table IV.7.). Respondents were required to rank suggested constraining factors. In addition, they were requested to suggest any other problems and to offer suggestions to the identified problems.
Table IV.7: Problems Constraining the Teaching of Physical Education to the Physically Handicapped as Ranked by Physical Education Teachers

<table>
<thead>
<tr>
<th>Problems</th>
<th>Rank by Schools</th>
<th>OVERALL RANK ORDER</th>
</tr>
</thead>
<tbody>
<tr>
<td>-Unsuitable P.E. Syllabus</td>
<td>S1 S2 S3 S4 S5 S6 TOTAL</td>
<td>1 1 2 3 1 1 9 1</td>
</tr>
<tr>
<td>-Degree and diversity of handicapping conditions</td>
<td></td>
<td>2 2 3 2 2 2 13 2</td>
</tr>
<tr>
<td>-Limited time (length of lessons)</td>
<td></td>
<td>2 2 3 2 2 4 15 3</td>
</tr>
<tr>
<td>-Inadequacy of facilities</td>
<td></td>
<td>5 4 4 7 2 3 25 4</td>
</tr>
<tr>
<td>-Legal liability for accidents</td>
<td></td>
<td>6 3 4 3 3 7 26 5</td>
</tr>
<tr>
<td>-Range of individual abilities within classes</td>
<td></td>
<td>4 5 6 4 5 6 30 6</td>
</tr>
<tr>
<td>-Time-Tabled teaching load involved</td>
<td></td>
<td>7 9 7 5 6 5 39 7</td>
</tr>
<tr>
<td>-Too many pupils in class</td>
<td></td>
<td>4 8 5 9 7 9 42 8</td>
</tr>
<tr>
<td>-Negative attitude of administrators towards P.E.</td>
<td></td>
<td>9 7 8 1 9 8 42 8</td>
</tr>
<tr>
<td>-Negative attitude of pupils towards P.E.</td>
<td></td>
<td>8 10 9 8 8 9 52 9</td>
</tr>
</tbody>
</table>

N = 42, S1* stands for schools 1, S2 for school 2 etc.

According to Table IV.7, the unsuitable physical education syllabus was top ranked as a major constraint. The degree and diversity of handicapping conditions of the pupils was ranked second. Insufficient lesson time was rated the number three constraining factor. The negative attitude of
administrators and the pupils towards physical education were relegated to eighth and ninth positions respectively. This relegation was supported by all the administrators interviewed. They reported that the pupils' attitude towards the subject was very positive.

The ranking of degree and diversity of handicapping conditions in second position was supported by observation findings. In the course of lesson observation the researcher identified 11 general categories of physically handicapped pupils. These included pupils who walked upright without any walking devices, crawled with no devices, used calipers only, used crutches only, used boots only, used artificial limbs, used calipers and crutches, used calipers and boots, used crutches and boots, used calipers crutches and boots and those who used wheelchairs. The administrators interviewed revealed that the major causes of the physical handicaps most prevalent in the schools were polio, spastics, cerebral palsy, spina bifida, muscular dystrophy, congenital cases, epilepsy and amputees. If all the above diversified conditions were to be found in one class, it would mean giving as many different exercises as the conditions. This would definitely pose problems especially in the absence of teacher aides.

An interesting feature in Table IV.7 is that school 4 ranked the negative attitude of administrators towards
physical education first while all the other schools ranked the problems either 7th, 8th or 9th (see row 9 of Table IV.7). On the questionnaires, the teachers of that school had crossed out the word administrators and inserted the word sponsors. A brief discussion with the physical education teachers and administrators of that school revealed that the sponsors of that school had stopped the teaching of physical education in favour of physiotherapy. All physical education lessons in the school were therefore used for physiotherapy. The reason advanced by the sponsors was that physical education activities adversely affected the healing process of the pupils especially after surgery. This argument is contrary to a study by Calhoun and Hawisher (1979) which stressed that the physical education programme is intended to supplement the therapy supplied to the child. According to the two authors neither physical education nor physiotherapy should replace the other. However, Calhoun and Hawisher noted that the physical education activities should not detract in any way from the therapeutic exercises.

The respondents were asked to suggest other problems that constrained the teaching of physical education other than the ones suggested in the study (see Table IV.8).
### Table IV.8: Problems Constraining the Teaching of Physical Education as Suggested by Respondents

<table>
<thead>
<tr>
<th>Suggested Problems</th>
<th>No. and % of:</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Administrators</td>
<td>Teachers</td>
</tr>
<tr>
<td>-lack of specialization in adapted physical education</td>
<td>6(100%)</td>
<td>21(50%)</td>
</tr>
<tr>
<td>-lack of suitable references in physical education of the physically handicapped</td>
<td>3(50%)</td>
<td>20(46%)</td>
</tr>
<tr>
<td>-Scheduling problems</td>
<td>4(67%)</td>
<td>8(19%)</td>
</tr>
<tr>
<td>-Exam oriented curriculum</td>
<td>2(33%)</td>
<td>13(31%)</td>
</tr>
<tr>
<td>-lack of teacher aides</td>
<td>2(33%)</td>
<td>10(24%)</td>
</tr>
<tr>
<td>-lack of competition hence no motivation</td>
<td>2(33%)</td>
<td>8(19%)</td>
</tr>
<tr>
<td>-pupils get tired easily</td>
<td>2(33%)</td>
<td>7(17%)</td>
</tr>
<tr>
<td>-child's self concept and concern on his/her disability</td>
<td>2(33%)</td>
<td>4(10%)</td>
</tr>
<tr>
<td>-over-enrolment</td>
<td>2(33%)</td>
<td>4(10%)</td>
</tr>
<tr>
<td>-sympathy for the pupils by the teachers</td>
<td>1(17%)</td>
<td>4(10%)</td>
</tr>
<tr>
<td>-lack of teachers interest in the subject</td>
<td>1(17%)</td>
<td>2(5%)</td>
</tr>
<tr>
<td>-too few pupils in class</td>
<td>0(0%)</td>
<td>5(12%)</td>
</tr>
<tr>
<td>-absenteeism due to sickness or hospitalization</td>
<td>0(0%)</td>
<td>2(5%)</td>
</tr>
<tr>
<td>-Problems of perceptual motor co-ordination</td>
<td>0(0%)</td>
<td>2(5%)</td>
</tr>
<tr>
<td>-problem in selecting suitable activities</td>
<td>0(0%)</td>
<td>2(5%)</td>
</tr>
</tbody>
</table>

\[ N = 6+42 = 48 \]

* Total exceeds 100% because respondents suggested more than one problem.

Results presented in Table IV.8 indicate that 11
out of the 15 suggested problems were identified by both administrators and physical education teachers as constraining factors to the teaching of physical education to the physically handicapped pupils. Those problems are ranked from first to tenth in Table IV.8. This clearly indicates that those problems had an acute adverse effect on the teaching of the subject in special primary schools of the physically handicapped.

The findings of the study on the lack of specialized personnel would appear to contradict the policy of the International Charter of Physical Education and Sport of 1978 which required that the teaching, coaching and administration of physical education and sport should be performed by qualified personnel. These findings definitely conflict with the recommendations by other previous studies and reports namely; Arnheim et. al. (1977); Price., (1980); Auka., (1984); Kamunge., (1988) that handicapped pupils should be taught by specially trained teachers. Although discussed elsewhere, the high ranking problem of lack of relevant textbooks shows how the teachers were hard hit by the problem.

The respondents acknowledged that scheduling of the physical education lessons was a major problem by ranking it third on the list. When asked to explain how the scheduling constrained the teaching of physical education, the respondents reported that
overcrowding in the usually small and few playgrounds interfered with the teaching. The respondents further noted that with the often few or no facilities at all, some classes had no space for conducting physical education and hence stayed idle indoors. The findings of this section of the study are in support of a study by Arnheim et. al. (1977) which stipulated that scheduling problems can constrain the teaching of physical education to the physically handicapped. The problem of scheduling in the study schools can be understood by looking at Table IV.9.

**Table IV.9: Schedule for Physical Education**

<table>
<thead>
<tr>
<th>No. of lessons scheduled at the same time</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>17</td>
</tr>
</tbody>
</table>

As it can be seen from Table IV.9, five classes were scheduled to be out at the same time on two occasions while two lessons were scheduled at the same time on 17 occasions. Lesson observations throughout the study revealed that five classes were out for physical education at the same venue once, three classes were out at the same time and venue seven times. Considering the fact that some
playgrounds were small in size, overcrowding usually occurred. The investigator witnessed overcrowding at the venues of the physical education lesson (see section 4.3.1 of Chapter Four).

Lack of teacher aides as a constraining factor was ranked fifth. The scarcity of teacher aides was evident during the lesson observations. Out of the 32 lessons observed, teacher aides were used in only two of the lessons. In one of the schools, teacher aides were directly involved in assisting the physical education teacher to organize the pupils especially during the group activities.

Of particular interest, in Table IV.8 are two contrasting problems that were suggested as constraining the teaching of physical education to the physically handicapped. The problems were underenrollment or too few pupils in class and overenrollment or large classes. Although ranked lowly (eighth and eleventh respectively) the contrast drew the attention of the investigator. Although the problem of large classes have not been identified in adapted physical education, similar problems have been reported in the area of regular physical education by: Singer., (1975); Muniu., (1986); and Kiganjo., (1987). However, considering the wide range of abilities within a class of the physically handicapped, a smaller pupil - teacher ratio is called for as compared to a class of normal pupils.
In fact Sherrill (1981) suggested an optimum class of 25-30 pupils for effective teaching in an adapted physical education class.

Findings obtained through observation revealed that the class with the lowest enrollment had two pupils while the one with the highest enrollment had 48 pupils. A follow-up of the above observation showed that 38% of the lessons observed had above the maximum 30 pupils per class suggested by Sherrill (1981). When such overenrollment was combined with the scarcity of teacher aides discussed earlier, the instructional problems became overwhelming. While the problem of overenrollment has been documented and discussed in the preceding sentences, the investigator has not come across literature on the problems caused by underenrollment.

4.8 Suggested Solutions

In this section, the teachers were required to rank some suggested solutions to the identified problems. The ranking was to be done in the order the solutions should be implemented to improve the teaching of physical education in the special schools. Later in the text, both teachers and administrators were requested to list down other possible solutions different from the ones identified by the researcher. The summary of the findings concerning these issues are presented in Tables IV.10
and IV. 11 respectively.

Table IV.10: Ranking of Solutions According to Their Importance in Improving the Teaching of Physical Education to the Physically Handicapped

<table>
<thead>
<tr>
<th>Suggested Solutions</th>
<th>Ranking by Schools</th>
<th>OVER ALL RANK ORDER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S1</td>
<td>S2</td>
</tr>
<tr>
<td>-Provision of a clearly laid down P.E. programme for the physically handicapped</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>-Provision of adequate specialized equipment</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>-Longer P.E. lessons</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>-Provision of Relevant textbooks</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>-Making P.E. examinable in Standard 8</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

The importance of a clearly laid down physical education programme suitable for the physically handicapped was demonstrated by the first ranking of this suggestion. The provision of adequate specialized equipment was also ranked first by the teachers. The requirement for longer physical education lessons and the provision of relevant textbooks both tied in rank number two. This qualifies earlier discussions in the study findings which showed that lack of resource materials like books and the limited time in the physical education
lesson were major constraining factors. However, the suggestion concerning making physical education examinable in standard 8 was not a priority as revealed by the last ranking above. Elsewhere both the teachers and administrators had indicated that the exam-oriented curriculum was a major problem to the teaching of physical education in the study schools. The problem was ranked fourth from a total of 15 variables (see Table IV.8). It is probable that the teachers did not want to have more examinable subjects in the primary school curriculum.
Table IV.11: Suggestions for Improving the Teaching of Physical Education to the Physically Handicapped

<table>
<thead>
<tr>
<th>Suggestions</th>
<th>No and % of:</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Administrators</td>
<td>Teachers</td>
</tr>
<tr>
<td>-Curriculum adjustment for P.E. of the physically handicapped</td>
<td>5 (83%)</td>
<td>3 (7%)</td>
</tr>
<tr>
<td>-further specialized training for P.E. teachers of the physically handicapped</td>
<td>4 (67%)</td>
<td>9 (21%)</td>
</tr>
<tr>
<td>-Provision of textbooks on P.E. of the physically handicapped</td>
<td>2 (33%)</td>
<td>19 (46%)</td>
</tr>
<tr>
<td>-Provision of standard physical facilities</td>
<td>3 (50%)</td>
<td>5 (12%)</td>
</tr>
<tr>
<td>-Provision of standard and adequate equipment</td>
<td>3 (50%)</td>
<td>3 (7%)</td>
</tr>
<tr>
<td>-Provision of teacher aides</td>
<td>2 (33%)</td>
<td>10 (24%)</td>
</tr>
<tr>
<td>-Equal weighting for P.E. and physiotherapy</td>
<td>1 (17%)</td>
<td>13 (30%)</td>
</tr>
<tr>
<td>-Inservice courses for serving teachers</td>
<td>1 (17%)</td>
<td>10 (24%)</td>
</tr>
<tr>
<td>-Gymnastics competitions for the physically handicapped</td>
<td>2 (33%)</td>
<td>3 (7%)</td>
</tr>
<tr>
<td>-change of P.E. teachers' attitude towards P.E.</td>
<td>2 (33%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>-limited number of pupils per class</td>
<td>1 (17%)</td>
<td>3 (7%)</td>
</tr>
<tr>
<td>-clearer guidelines for selection of activities</td>
<td>1 (17%)</td>
<td>2 (5%)</td>
</tr>
<tr>
<td>-Effective incentives for P.E. teachers</td>
<td>1 (17%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>-Demonstration by experts</td>
<td>1 (17%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>-Suitable P.E. uniforms</td>
<td>1 (17%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>-Research in this field with good follow up</td>
<td>1 (17%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>-Better enrolment in classes</td>
<td>(0%)</td>
<td>3 (7%)</td>
</tr>
<tr>
<td>-Organising P.E. seminars &amp; workshops</td>
<td>0 (0%)</td>
<td>2 (5%)</td>
</tr>
<tr>
<td>-Proper medical report for pupils</td>
<td>0 (0%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>-Grouping pupils according to disability</td>
<td>0 (0%)</td>
<td>1 (2%)</td>
</tr>
</tbody>
</table>

* Total exceeds 100% because respondents suggested more than one solution.

Table IV.11 shows that 14 possible solutions received a consensus from the two samples in the study population though some had low percentage of
responses. The adjustment of the physical education curriculum to suit the physically handicapped received the highest number of proponents. This is indicative of the problems the physical education syllabus in use posed to the teaching of the subject. The need for resource materials for the selection of activities was demonstrated by the suggestion concerning provision of physical education textbooks which was ranked third.

Most of the suggestions provided tend to suggest possible solutions to problems highlighted in the previous sections of the study. Five of the suggestion are calling for the provision of trained personnel. These suggestions have been ranked second, fifth, eighth, thirteenth and eighteenth respectively. This demonstrates the importance of trained personnel in conducting physical education for the physically handicapped.

The high ranking of the suggestion concerning provision of standard physical facilities is an indication that the respondents were concerned about the scheduling problems that occurred in their respective institutions. Scheduling problems were ranked third amongst 15 other problems (see Table IV.8). Provision of standard facilities would minimize those scheduling problems and make the handicapped pupils more independent.

The suggestion concerning equal weighting for
physical education and physiotherapy drew the attention of the investigator. Teachers had disclosed to the investigator that physiotherapy was usually conducted during some of the physical education lessons. This happened in all the five schools where physiotherapists were available. The exercise was usually done with pupils who, according to the physiotherapist, needed the services. At times this left the physical education teacher with only a handful of pupils. According to the revelation of the teachers, those pupils who did not go for physiotherapy were advised to do some private studies in class. It will be recalled that in one of the schools, no physical education was conducted at all. Such practices do not only constrain the teaching of physical education, but also rob the pupils of the joy and physical growth that are inherent in physical education.
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 INTRODUCTION

This chapter examines the research questions formulated for this study in relation to the findings obtained. Subsequent to the analysis of the findings suggestive recommendations have been advanced.

5.1. SUITABILITY OF PROGRAMME

The research question on this area sought to find out whether the physical education syllabus being followed in the special primary schools was suitable for the physically handicapped. The findings pertaining to this question showed that:

(i) Teachers found it difficult to interpret the physical education syllabus.

(ii) Activities in the syllabus were found to be irrelevant for the physically handicapped pupils and hence could not be performed by them.

(iii) Objectives of the syllabus were vaguely stated and were found difficult to achieve by the physically handicapped.

(iv) The problem of interpretation, irrelevancy of the activities and vagueness of the objectives constrained the teaching of physical education in the special schools.
5.2 ADEQUACY AND SUITABILITY OF LEARNING RESOURCES

The research question on this area was aimed at finding out whether the resources available for teaching physical education were adequate and suitable for use by the physically handicapped pupils. Such resources included facilities, pieces of equipment and textbooks. The findings revealed that:

(i) Pieces of equipment, facilities and textbooks were inadequate in all the schools. The few available textbooks were on regular physical education for the normal pupils. The inadequacy of facilities often led to scheduling problems.

(ii) Most of the pieces of equipment and facilities used for physical education were not adapted or adaptable for use by the physically handicapped pupils.

(iii) The physical education syllabus that the teachers used was meant for the normal pupils. The above factors constrained the teaching of physical education in the study schools.

5.3 ADEQUACY AND SUITABILITY OF PERSONNEL

The purpose of the question pertaining to this area was to investigate whether the personnel available for conducting physical education in the study schools were adequate and suitably trained for the task. The study found out that:
(i) 86% of the teachers were untrained to teach physical education to the physically handicapped. However, each school had at least one trained teacher.

(ii) 62% of the teachers had not attended seminars or courses on physical education for the physically handicapped.

(iii) Those teachers who had been trained to teach physical education to the physically handicapped were not experienced.

(iv) There was an acute shortage of teacher aides. Only one school had two teacher aides.

(v) Lack of specialized training in physical education of the physically handicapped and teacher aides constrained the teaching of physical education in special primary schools.

5.4 ADEQUACY OF ALLOCATED TIME

The question on this area sought to find out whether adequate time was allocated for physical education purposes of the physically handicapped. Results of data analysis concerning the above revealed that:

(i) Half of the lesson was spent for ancillary functions such as travelling to and from the venue of the lesson, changing into physical education kit, removing and putting back mobility aids and/or organizing the classroom
for lessons conducted indoors.

(ii) The amount of time allocated for a physical education lesson (30 minutes for lower primary and 35 minutes for upper primary) was too short. This time factor was found to be a major problem constraining the teaching of physical education to the physically handicapped pupils.

5.5 **TEACHERS' WORKLOAD**

The question concerning this aspect was aimed at investigating whether the teachers' workload constrained their teaching of physical education. Results of data analysis pertaining to this question revealed that the workload was not a major constraint to the teaching of physical education to the physically handicapped. Only 12% of the teachers considered the workload as a constraining factor to the teaching of physical education.

5.6 **OTHER INSTRUCTIONAL PROBLEMS**

The purpose of the question pertaining to this area was to elicit from the respondents other instructional problems which adversely constrained the teaching of physical education to the physically handicapped. The following problems were identified from the results of the study.

(i) **Legal liability for accidents:**

Some teachers refused to conduct physical
education lessons claiming that the act would injure the pupils leading to the teachers being sued in a court of law.

(ii) **Degree and diversity of handicapping conditions:**
This study identified 11 general categories of handicapping conditions and nine types of physical handicaps. Consequently some classes had pupils ranging from almost normal to severely handicapped pupils. This factor led to a wide range of individual abilities which often led to instructional problems.

(iii) **Replacement of physical education by physiotherapy:**
The study revealed that in five of the schools, physiotherapy was conducted during the physical education lessons. The physical education teachers were usually left with only a handful of pupils while the rest went for physiotherapy. In one of the study schools, physiotherapy had totally replaced physical education. All these irregularities constrained the teaching of physical education to the physically handicapped.

(iv) **Exam oriented curriculum:**
Due to the pressure of passing exams, examination classes (usually standard 7 and 8) were retained in classes during physical education lessons to try and cover the syllabus
of the examinable subjects.

(v) Overenrollment:
Some classes had far too many pupils in a class to allow for any effective teaching of physical education.

(vi) Getting tired quickly by the pupils.

(vii) Sympathy for the pupils by the teachers.

(viii) Childrens' self - concept and psychological concern on their disabilities.

(ix) Problems of perceptual - motor co-ordination of the pupils.

(x) Lack of teachers' interest in the subject.

(xi) Too few pupils in class. Some classes were found to have as few as four pupils.

5.7 CONCLUSIONS

Based on the findings and the limitations of this study the following conclusions seem warranted:

(a) There seems to be a lack of physical education programmes, facilities and equipment suitable for use by the physically handicapped pupils in the special primary schools. An acute shortage has been reported in the area of relevant textbooks for physical education of the physically handicapped.

(b) Many of the instructional problems identified in the study, were due to large classes, inadequate allocation of time, legal liability for accidents, lack of teacher aides, poor scheduling of physical education lessons, replacement of physical education
by physiotherapy, exam-oriented curriculum and providing for individual differences, needs and abilities of the physically handicapped pupils.

(c) Physical education teachers in the study schools apparently felt that they were not adequately prepared to teach physical education to the physically handicapped. This led to their sympathizing with pupils which often led to instructional problems.

5.8 RECOMMENDATIONS

On the basis of the findings and limitations of this study, the following recommendations are made as guidelines for further action and research in the area of physical education for the physically handicapped in special primary schools in Kenya. The recommendations are presented in two subsections. In the first subsection recommendations are made for educational policy and practice in Kenya. Recommendations in the second subsection are meant for further research.

5.8.1 Recommendations for Policy and Practice

This study has attempted to identify the instructional problems related to physical education of the physically handicapped in special primary schools in Kenya. From the findings of the study and in the light of the conclusions the following
recommendations are made:

(a) The study revealed that the current physical education syllabus in the special primary schools was a major instructional problem constraining the teaching of physical education. It is recommended that K.I.E. should come up with a suitable physical education syllabus for the physically handicapped pupils in such schools. The syllabus should be geared to individual performance standards and should emphasize the individual ability. This syllabus should include activities suited to the interests, capacities and limitations of the physically handicapped pupils. It should also have goals that are attainable by the physically handicapped.

(b) Specialists in the field of adapted physical education for the physically handicapped should write a book or books on physical education for the physically handicapped just as specialists have done in secondary physical education for the normal pupils.

(c) A majority (86%) of the teachers in the study schools were found to be lacking knowledge, skill and confidence needed in teaching physical education to the physically handicapped pupils. The few (14%) of the teachers that had been trained lacked practical experience. There is a need therefore to re-examine and revise the teacher preparation programmes in the various teachers' training colleges in the country.
Along these lines, the following are recommended.

(i) Regular teacher training curriculum should include aspects of adapted physical education.

(ii) Until many teachers are trained, there is need to inservice regular teachers to teach adapted physical education in the area of the physically handicapped.

(iii) K.I.S.E. trainees and all other college trainees should have both academic and practical field experience in adapted physical education. Both experiences should be required for certification.

(d) Concerning the replacement of physical education with physiotherapy, it is recommended that the Ministry of Education should make it clear to all headteachers and school sponsors that physical education is a compulsory subject in all educational institutions apart from the universities. A dividing line should be drawn between physiotherapy and physical education. This study revealed that some school sponsors still feel that with physiotherapy, physically handicapped pupils do not need physical education.

(e) For inadequacy, lack of and unsuitability of physical education equipment and facilities the following are recommended:

(i) Teachers should refine their improvisation skills. This can be done in the Teachers Advisory Centres found in all the districts or at K.I.S.E.
(ii) Teachers should be informed that improvised equipment/apparatus are the best for use by the physically handicapped because they can be tailored to the needs of the particular individuals. The teachers should also be informed that it is often possible to make adaptations to an existing facility so that it can meet specific needs of the physically handicapped persons. It is far much better to adapt existing facilities than to forego programmes for lack of special facilities.

(iii) Where facilities cannot be improvised, then self-help programmes or 'harambees' can be held to raise funds to assist in putting up facilities or purchasing equipment.

(iv) For the adaptation of facilities, K.I.E. should set specifications to be used in the specific schools. Use of offsite but nearby facilities should be encouraged.

(f) To reduce the pupil-teacher ratio and therefore to curb the problem of large classes, teacher aides should be trained and posted to all special primary schools of the physically handicapped.

(g) Scheduling problems in most cases resulted from poor timetabling. Proper timetabling should be stressed in schools to avoid clustering all physical education lessons at the same time. Spreading out the physical education lessons should also be stressed.
(h) To curb the problem of legal liability for accidents the following suggestions are made:

(i) Teachers should prepare their physical education lessons in consultation with the physiotherapists or a medical doctor knowledgeable in the area of physical education for the physically handicapped. For this purpose, more physiotherapists should be trained and posted to particular institutions.

(ii) Pupils should have proper medical records from a medical doctor indicating whether they are allowed to take part in physical education or not.

(iii) Physical education teachers of the physically handicapped should be enlightened on the procedures of legal liability suits.

(i) The Physical Education lesson for the physically handicapped should be made longer. This will increase the time for physical activity.

5.8.2 Recommendations for Further Research

This study has raised a number of issues worthy of further research. Each issue has been considered individually and recommendations made as follows:

(a) Further research should be undertaken to identify the physical education activities suitable for the physically handicapped for the formulation of a physical education programme for this population.

(b) A study should be carried out to investigate how the problems of perceptual motor co-ordination
(mentioned by the respondents as a constraining factor) affects the performance of the child in physical education activities and suggest remedies to the problem.

(c) The child's self-concept and psychological concern on its disability was said to be a major factor constraining the teaching of physical education to the physically handicapped. To avoid speculation of this occurrence, a further investigation should be conducted to ascertain whether there is a cause and effect relationship between low self-concept and participation in physical education.

(d) A thorough study should be done to find out what attitude the teachers, administrators and pupils have towards physical education and whether this affects the pupils' participation towards physical education and the teaching of the subject by the teachers.

(e) A similar study should be done in special secondary schools for the physically handicapped to ascertain whether problems encountered are similar.

(f) A study should be done to investigate whether the introduction of competitions in physical education of the physically handicapped can improve the teaching of the subject to the physically handicapped.

(g) An investigation should be conducted to find out how the exam-oriented curriculum constrains the teaching of physical education to the physically handicapped and how the problem can be solved.


Special Populations. (2nd ed.). Boston: Allyn and Bacon, Inc.


Dear Professor,

APPENDICES

The last week of June I had the privilege of going back to Georgia Tech University for a few days. I was there to attend the pre-conference meeting of the American Psychological Association. It was a wonderful experience to be with so many of my former professors and to have the opportunity to discuss current topics in psychology.

Sincerely,
[Signature]
APPENDIX A

PART ONE

PRE-CONTACT LETTER TO THE SCHOOLS.

Kenyatta University
P.E. & Games Department
P.O. Box 43844,
NAIROBI.
Date ______________

The Headteacher,
______________________
P.O.Box __________
______________________

Dear Sir/Madam,

RE: PERMISSION FOR RESEARCH

I am a Postgraduate Student at Kenyatta University currently preparing to conduct a study on the problems which constrain the teaching of Physical Education in special primary schools for the physically handicapped in Kenya.

The intended study will cover headteachers (or their deputies) and Physical Education teachers in all special primary schools for the physically handicapped in the country. The findings will assist in making objective recommendations aimed at
improving the teaching of Physical Education to the physically handicapped pupils in primary schools.

I wish to be in your school for data collection from ________________ to ________________.

I look forward to receive your invaluable assistance to enable me to complete my studies on time.

Yours faithfully,

_____________________
Simon Muhoror Gathua
Dear Teacher,

I am a postgraduate student at Kenyatta University currently engaged in a study on the teaching of physical education (P.E.) in Primary Schools for the physically handicapped in Kenya. The purpose of this questionnaire is to seek information from you about the issues affecting the teaching of P.E. in your school.

1. Kindly complete all the questions in the questionnaire. Answer the questions freely, individually and to the best of your ability.

2. The findings will be useful in making objective recommendations on how the teaching of P.E. to the physically handicapped can be improved. The information you give therefore will be of utmost importance.

3. All your responses will remain confidential.
4. I would like to thank you for your time and cooperation in advance.

Yours Sincerely,

Simon Muhor Gathua
Date

Dear Sir/Madam,

In relation to the current study (as per the pre-contact letter dated 3rd of January 1990), you are one of the respondents of the study. In this connection, I will ask you some questions concerning the teaching of physical education in special primary schools for the physically handicapped.

The findings will assist in making objective recommendations aimed at improving the teaching of physical education to the physically handicapped pupils in primary schools. The information you give will therefore be of utmost
importance. May I assure you that the answers you give will be treated confidentially.

Yours Sincerely,

__________________________

Simon Muhoru Gathua
APPENDIX B

PART ONE

QUESTIONNAIRE FOR P.E. TEACHERS

Respond to all questions in Section 1 to Section 5 by putting a tick (✓) in the appropriate box or by filling in the information in the space provided.

1.0 Section 1: Biographical Information.

1.1 Indicate your gender.

Male [ ]

Female [ ]

1.2 Are you a professionally trained teacher?

Yes [ ]

No [ ]

1.3 Which is your highest professional qualification?

P1 [ ]

P2 [ ]

P3 [ ]

Diploma [ ]
1.4 Which class do you teach physical education?

- Standard _________________________

1.5 Are you trained to teach physical education to the physically handicapped?

- Yes
- No

1.6 Have you attended any seminar or inservice course on physical education for the physically handicapped?

- Yes
- No

1.7 How many years have you taught physical education to the physically handicapped at primary school level?

- Below 1 year
- 1 - 5 years
- 6 - 10 years
- 11 - 15 years
- More than 15 years
2.0 Section 2: Teachers’ Workload

2.1 What is the total number of periods that you teach per week?

- Less than 10
- 11 - 20 lessons
- 21 - 30 lessons
- 31 - 40 lessons
- More than 40

2.2 Indicate the number of physical education lessons that you teach per week in one class

- 3 lessons
- 5 lessons
- Others (specify)

2.3 What can you say concerning the number of lessons allocated to you in one week?

- I am overworked
- I am adequately loaded
- I am underworked
2.4 If you are overworked, does the overloading constrain your teaching of physical education?

Yes [ ]
No [ ]

3.0 Section 3: Availability, Adequacy, Condition and Utilization of Teaching/Learning Resources

3.1 How would you rate the maintenance of the permanent playing facilities in this school?

Very adequate [ ]
Adequate [ ]
Not sure [ ]
Inadequate [ ]
Very inadequate [ ]

3.2 Are the present physical education facilities adequate?

Yes [ ]
No [ ]
3.3 Does the inadequacy of facilities, if any, constrain the teaching of physical education?

Yes  
No  
N/A

3.4 Does the school have any facilities for use during wet weather?

Yes  
No

3.5 Does the lack of or inadequacy of facilities for use during wet weather, if any, constrain the teaching of physical education?

Yes  
No  
N/A  

3.6 Explain briefly how lack of or inadequacy of facilities during wet weather constrains the teaching of physical education

__________________________________________________________________________________
3.7 Are the facilities available for teaching physical education adapted?
Yes [ ]
No [ ]

3.8 If the facilities are unadapted, does their use constrain the teaching of physical education?
Yes [ ]
No [ ]
N/A [ ]

3.9 Explain briefly how use of unadapted facilities constrains the teaching.

3.10 Does the school have enough equipment to cater for all the pupils during physical education lessons?
Yes [ ]
No [ ]

3.11 Would you say that lack of equipment constrains the teaching of physical education?
Yes [ ]
No [ ]
3.12 Are all the pieces of equipment you use for physical education adapted?

Yes      No

3.13 If the pieces of equipment are not adapted, does their use constrain your teaching?

Yes      No

N/A

3.14 Does the school have any physical education textbooks for teachers?

Yes      No

3.15 If there are no physical education textbooks, then does this constrain your teaching?

Yes      No

N/A
3.16 Explain briefly how lack or inadequacy of textbooks constrain your teaching of physical education.

4.0 Section 4: The Physical Education Programme

4.1 Of the following what would you say about the interpretation of the Physical Education Syllabus?

- Very easy to interpret
- Easy to interpret
- Undecided
- Difficult to interpret
- Very difficult to interpret

4.2 Does the problem of interpretation constrain your teaching?

- Yes
- No

4.3 Explain briefly how the problem of interpretation constrains your teaching.
4.4 Classify the activities in the syllabus in terms of relevance to the physically handicapped

- Very relevant
- Relevant
- Not sure
- Irrelevant
- Very irrelevant

4.5 How would you rate the clarity of physical education objectives as far as the physically handicapped are concerned?

- Very clearly stated
- Clearly stated
- Not sure
- Vaguely stated
- Very vaguely stated

4.6 Classify the physical education objectives in terms
of achievement by the physically handicapped.

Very easily achievable

Easily achievable

Not sure

Difficult to achieve

Impossible to achieve

4.7 Do you clearly understand the guidelines for the selection of activities for the physically handicapped?

Yes

No

4.8 If you do not clearly understand the guidelines does this lack of understanding constrain your teaching of physical education?

Yes

No

N/A

4.9 Explain briefly how the lack of understanding of the
4.10 Can the activities in the syllabus be performed by the physically handicapped?

Yes  
No

4.11 On the whole, what would you say about the suitability of the P.E. syllabus for use by the physically handicapped?

Suitable  
Not sure  
Not suitable

5.0 Section 5: Time Factor and the P.E. Programme

5.1 What is the length of a single period of physical education for your class?

30 minutes  
35 minutes  
Others (specify)
P.E. lessons?
Yes.
No

5.3 Do pupils in your class remove braces, calipers, boots or any other mobility devices before the P.E. lesson?
Yes.
No

5.4 If the pupils in your class change and/or remove the mobility aids for P.E., estimate the time they take in minutes to change and/or remove the devices:
before a P.E. lesson
after a P.E. lesson

5.5 Do the pupils in your class shower after a P.E. lesson?
Yes.
No

5.6 If the pupils in your class shower after a P.E. lesson, estimate the time in minutes spent by the pupils while showering.
5.7 Do you use offsite facilities (facilities outside the school compound) for P.E. lessons?

Yes [ ]

No [ ]

5.8 If you use offsite facilities, estimate the time in minutes that the pupils spend to reach these facilities.

[ ]

5.9 Estimate the time in minutes taken by the pupils to travel from the classroom to the on-site facilities e.g. field or gymnasium that you use for P.E.

[ ]

5.10 What can you say about the length of the P.E. lesson as far as the physically handicapped pupils are concerned?

Too long [ ]

Long [ ]

Enough [ ]

Short [ ]

Too short [ ]

5.11 If you find the length of the P.E. lesson either short or too short, does this constrain your teaching?
5.12 Explain briefly how the length of the P.E. lesson constrains your teaching.

6.0 Section 6: Problems Constraining the Teaching of P.E.

Listed below are some problems which may constrain the teaching of physical education. Rank these problems according to the magnitude of their adverse effects to your teaching. Rank the problem that adversely affects your teaching greatly in position one and end with the one which has least or no effect at all in position 10. Write down the corresponding letter in the space provided on the right hand side.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Time tabled teaching load involved</td>
<td>1.</td>
</tr>
<tr>
<td>b) Degree and diversity of handicapping conditions</td>
<td>2.</td>
</tr>
<tr>
<td>c) Inadequacy of facilities e.g. fields</td>
<td>3.</td>
</tr>
<tr>
<td>d) Range of individual abilities within classes</td>
<td>4.</td>
</tr>
<tr>
<td>e) Legal liability for accidents</td>
<td>5.</td>
</tr>
<tr>
<td>f) Negative attitude of administrators (headteacher/deputy) towards P.E.</td>
<td>6.</td>
</tr>
<tr>
<td>g) Unsuitable P.E. syllabus for the physically handicapped</td>
<td>7.</td>
</tr>
<tr>
<td>h) Negative attitude of pupils towards P.E.</td>
<td>8.</td>
</tr>
<tr>
<td>i) Too many pupils in class</td>
<td>9.</td>
</tr>
<tr>
<td>j) Short P.E. lesson</td>
<td>10.</td>
</tr>
</tbody>
</table>
6.2 In the spaces provided below, list down any other problems that constrain your teaching that are not mentioned in section 6.1 above.

(a) 

(b) 

(c) 

(d) 

(e) 

(f) 

6.3 The following are possible solutions to the problems encountered by physical education teachers of the physically handicapped in special primary schools. Rank the solutions in the order that they can help you to improve your effectiveness in teaching physical education to the physically handicapped. Rank the solution that can assist you greatly in position one and end with the one that will give you least or no improvement at all in position 5.

<table>
<thead>
<tr>
<th>Solutions</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Provision of adequate specialized equipment</td>
<td>1.</td>
</tr>
<tr>
<td>b) Provision of relevant textbooks</td>
<td>2.</td>
</tr>
<tr>
<td>c) Longer physical education lessons</td>
<td>3.</td>
</tr>
<tr>
<td>e) Provision of a relevant P.E. programme</td>
<td>5.</td>
</tr>
</tbody>
</table>

6.4 In the space provided below, list down any other possible solutions not included in section 6.3 above that can improve your effectiveness of teaching P.E. to the physically handicapped pupils.

(a) 

(b) 

(c)
Thank you for your co-operation
PART TWO

INTERVIEW SCHEDULE FOR HEADTEACHERS

Name of school

1. Sex of the headteacher/deputy.
   Male
   Female

2. Are you
   (a) the Headteacher? or
   (b) the Deputy Headteacher?

3. Are you a professionally trained teacher?
   Yes
   No

4. Which is your highest professional qualification?

5. Have you been trained to teach P.E. to the physically handicapped?
   Yes
   No
6. Have you attended any course/seminar on physical education for the physically handicapped?
   Yes
   ☐
   No
   ☐

7. Have you ever taught P.E. to the physically handicapped?
   Yes
   ☐
   No
   ☐

8. For how long have you taught P.E. to the physically handicapped?


9. What categories of physical handicaps are most prevalent in the school?


10. How would you rate the level of maintenance of the permanent playing facilities in this school?
    Adequate
    ☐
    Inadequate
    ☐
    Very inadequate
    ☐
11. Would you say that the facilities available for teaching physical education in the institution are adequate?

Yes

No

12. If the facilities are inadequate does the inadequacy constrain the teaching of physical education?

Yes

No

Explain your answer briefly. ________________________________________________________________

13. Does the school have any facilities for use during wet weather?

Yes

No

14. Does the lack of or inadequacy of facilities for use during wet weather, if any, constrain the teaching of physical education?

Yes

No
Explain your answer briefly. ____________________________

15. Are the available facilities adapted for use by the physically handicapped?

Yes

No

16. If the facilities are unadapted, does the un-adaptability constrain the teaching?

Yes

No

17. Are the pieces of equipment available for use in teaching physical education adequate?

Yes

No

18. If the pieces of equipment are inadequate, does the inadequacy constrain the teaching of physical education?

Yes

No
19. Are the pieces of equipment used for physical education adapted for use by the physically handicapped?

   Yes
   No

20. If the pieces of equipment are not adapted, does their use constrain the teaching of P.E.?

   Yes
   No

21. Does the school have any physical education textbooks for teachers?

   Yes
   No

22. If there are no physical education textbooks, does this constrain the teaching of physical education?

   Yes
   No
23. What would you say of the physical education curriculum being used by the physically handicapped?

Very easy to interpret? □

Easy to interpret? □

Difficult to interpret? □

or

Are you undecided? □

24. If the curriculum is not easy to interpret, does the problem of interpretation hamper the effective teaching of the subject?

Yes □

No □

25. How would you rate the relevance of the activities in the syllabus with reference to the physically handicapped?

Very relevant □

Relevant □

Irrelevant □
26. What would you say of the clarity of physical education objectives with reference to the physically handicapped? - Are they:-

Very clearly stated?

Clearly stated?

Vaguely stated?

Very vaguely stated?

or you are not sure?

27. How would you rate the achievement of the physical education objectives by the physically handicapped pupils?

Are they:-

Very easily achievable?

Easily achievable?

Difficult to achieve?

Impossible to achieve?

or you are not sure?
28. Are the guidelines for selection of activities for the physically handicapped clear?
   Yes
   No

29. Does the lack of clarity of guidelines, if any, hamper the teaching of physical education?
   Yes
   No

   Explain your answer briefly. ____________________________

30. Can all the activities in the syllabus be performed by the physically handicapped pupils?
   Yes
   No

31. On the whole, is the physical education syllabus currently in use suitable for the physically handicapped pupils?
   Yes
   No
32. Considering the number of classes in the school in relation to the number and size of facilities available, do scheduling problems occur?

Yes ☐
No ☐

33. If such scheduling problems occur, do they constrain the teaching of physical education to the physically handicapped?

Yes ☐
No ☐

Explain your answer briefly. ________________________________

34. What other problems have negative effects on the teaching of physical education to the physically handicapped?

(a) __________________________________________
(b) __________________________________________
(c) __________________________________________
(d) __________________________________________
(e) __________________________________________
(f) __________________________________________
(g) __________________________________________
(h) __________________________________________
(i) __________________________________________
(j) __________________________________________
35. Suggest ways of improving the teaching of physical education to the physically handicapped pupils in special primary schools

(a) 

(b) 

(c) 

(d) 

(e) 

(f) 

(g) 

(h) 

(i) 

(j) 

Thank you for your co-operation
PART THREE

OBSERVATION SCHEDULE

Name of school

SECTION A: The School Physical Education Programme

1. Is Physical Education on the timetable?
   Yes
   No

2. How many periods are scheduled per week for:-
   Lower Primary? ______________
   Upper Primary? ______________

3. How many classes are scheduled per week for physical education during the same period?

4. What is the length of a single physical education lesson for:-
   Lower Primary? ______________
   Upper Primary? ______________
### SECTION B: Part 1: A Checklist for the Availability and Condition of Physical Education Facilities

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Available</th>
<th>Functional</th>
<th>Adapted</th>
<th>Accessible by wheelchair</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Athletics Track</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Badminton Court</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basketball Court</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Changing Rooms</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grass Field</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Handball Court</td>
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<tr>
<td>Hockey Pitch</td>
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</tr>
<tr>
<td>Netball Pitch</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Rounders Court</td>
<td></td>
<td></td>
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<tr>
<td>Showers</td>
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<td>Soccer Pitch</td>
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<tr>
<td>Sports Hall</td>
<td></td>
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<tr>
<td>Swimming Pool</td>
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<td></td>
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</tr>
<tr>
<td>Tennis Court</td>
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<tr>
<td>Tenniquoit Court</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Volleyball Court</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others (Specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Part 2: A Checklist for the Availability and Condition of Physical Education Equipment.

<table>
<thead>
<tr>
<th>Pieces of Equipment for:</th>
<th>Available</th>
<th>Functional</th>
<th>Adapted</th>
<th>Name of Equipment</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Athletics</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Badminton</td>
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<tr>
<td>Bowling</td>
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<tr>
<td>Climbing</td>
<td></td>
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<tr>
<td>Cricket</td>
<td></td>
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<tr>
<td>Dance</td>
<td></td>
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<tr>
<td>Darts</td>
<td></td>
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<td></td>
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<tr>
<td>Gymnastics</td>
<td></td>
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<td></td>
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<tr>
<td>Handball</td>
<td></td>
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<tr>
<td>Hockey</td>
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<td>Lawn Tennis</td>
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<td></td>
</tr>
<tr>
<td>Netball</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Rounders</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Soccer</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Swimming</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Table Tennis</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Volleyball</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others (Specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Part 3: A Checklist for the Availability of Physical Education Textbooks

Are there any physical education textbooks such as:

(a) Syllabi?

- Yes
- No

(b) Teachers' guides?

- Yes
- No

Others (specify)

(a) 

(b) 

(c) 

(d) 

(e) 

(f) 

(g) 

(h) 

SECTION C: Lesson Observation Schedule.

Class ________________________________

1. Do pupils use off-site facilities?
   
   Yes [ ]
   
   No [ ]

2. What time is spent travelling to off-site facilities?
   ____________________________ minutes

3. Do pupils use on-site facilities?
   
   Yes [ ]
   
   No [ ]

4. What time is spent travelling to on-site facilities?
   ____________________________ minutes

5. Do pupils change for the physical education lesson?
   
   Yes [ ]
   
   No [ ]

6. What time is spent changing before the lesson?
   ____________________________ minutes

7. Does the teacher have any assistants?
   
   Yes [ ]
   
   No [ ]
8. What is the pupil-teacher ratio?  

9. Are there any pieces of equipment in use?  
   Yes  
   No  

10. Have the pieces of equipment been adapted to suit the particular handicaps?  
    Yes  
    No  

11. Are the pieces of equipment sufficient in quantity?  
    Yes  
    No  

12. What pieces of equipment are used in the lesson?  
    (a) ________________________ (b) ________________________  
    (c) ________________________ (d) ________________________  
    (e) ________________________ (f) ________________________  

13. How do the pupils use the pieces of equipment?  
    Individually  
    In pairs
In small groups

As a class

14. How many pupils are able to walk/crawl without using any mobility aid(s)?

15. How many pupils are using sticks or other walking devices?

16. How many pupils are using artificial limbs?

17. How many pupils are using wheelchairs?

18. Do all the pupils manage to do the activities demonstrated/explained by the teacher?

Yes

No

19. Do the pupils shower after the physical education lesson?

Yes

No
20. How much time is spent showering?

________________________________________ minutes

21. How much time is spent changing after the physical education lesson?

________________________________________ minutes

22. How much time is spent travelling back to class from the venue of the physical education lesson?

________________________________________ minutes

23. What amount of time is spent preparing for the physical education lesson and preparing for the next lesson after physical education?

________________________________________ minutes

24. How much time is spent in the actual lesson? (i.e. for physical activity)

________________________________________ minutes

25. How many classes are out for physical education at the same venue at the same time?

________________________________________

26. Is there any congestion at the venue of the physical education lesson?

Yes ☐

No ☐
APPENDIX C

A LIST OF THE PRIMARY SCHOOLS USED FOR THE STUDY

O'l Kalou Special Primary School
Joyland Special Primary School
Machakos Special Primary School
Nile Road Special Primary School
Port Reitz Special Primary School
Joytown Special Primary School