ASSESSMENT OF THE PHYSICAL EDUCATION LEARNING RESOURCES IN SELECTED SECONDARY SCHOOLS IN UASIN GISHU DISTRICT.

BY

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Assessment of the physical education

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KENYATTA UNIVERSITY.
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, brothers and sisters and specifically to my deceased brother Nalyang'a.

Further gratitude is extended to the spouses of my university supervisors for acting as intermediaries to the supervisors when circumstances dictated.

Finally, my special heartfelt gratitude to my loving wife, family, and friends for their support and understanding during the time of study and writing the thesis. Their patience and understanding touched me thus making it possible.
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ABSTRACT

The purpose of this study was to assess the relationship between the provision of physical education learning resources and each of the following variables, namely school location, sponsorship, gender, nature, school age, enrollment, financial allocation to physical education activities and the level of emphasis on physical education in the school.

Forty secondary schools were randomly selected on a stratified basis from all the secondary school in Uasin Gishu District of the Rift Valley province of Kenya. There were representative samples of the school categories in terms of location, gender, sponsorship and school nature. A Questionnaire was used in the data collection for the sample schools selected. In each school, the Head of physical education department, or in his absence the Games Master filled the first part of the Questionnaire. The Head Teacher or the deputy filled the second part.

The data collected was analysed using computer following the Statistical Package for Social Sciences (SPSS) programme. The type of computer used was International Computer Limited (ICL) 75402 system. Three stages were followed in the analysis. A descriptive analysis of the raw data was carried out. A Chi-square test
was then used to test the formulated hypotheses. A contigence coefficient was calculated to test the magnitude of the relationships. The over-all research design was expost facto.

The findings revealed that the factors of location, financial allocation, school enrollment, and level of emphasis on physical education in the school had significant relationship with the availability of a wider variety of outdoor facilities, equipment and maintenance of the outdoor facilities. School sponsorship, gender, and nature of the school revealed no significant relationships with resource provision. The school age factor revealed only one significant relationship with equipment availability otherwise, it had no significant relationship with other resources namely reading materials and facilities. Indoor facilities and the reading materials were significantly inadequate in the majority of the sample schools. The level of significance at which the stated hypotheses were rejected or not rejected was $P<.05$.

The recommendations based on the findings of this study were that:— the Ministry of Education should inspect
and confirm that physical education is actually taught; assist in providing facilities, equipment and reading materials; school management boards to raise funds for acquisition of the resources and that the Kenya Institute of Education should distribute the reading materials they have developed for physical education to the schools at affordable prices.
CHAPTER ONE

INTRODUCTION

1.1. BACKGROUND

Physical education is one of the subjects in Kenya's national educational curriculum. The implementation of the physical education programme however is dependent on the provision of certain essential facilities and equipment. Several authors (Hagen et al, 1951; Arnold, 1972; Scriven, 1973; Bronzan, 1974; Fordam and Leaf, 1978) have emphasized the importance of adequate facilities for effective teaching in physical education classes and in particular the practical lessons. The absence or inadequacy of facilities, equipment and reference books for learning purposes have an adverse effect on the development of physical education programmes.

According to Arnold (1972) the use of play materials in the development of motor skills in physical education is the most important extrinsic factor in learning. Use of the right equipment and other supplies contributes to maximum improvement in the child's maturation and motor development. A child's all round physical development is
also enhanced in an enriched environment. Inadequate facilities have adverse effects on the physical education programmes as it has been pointed out by Updyke and Johnson (1970); Muniu, (1986); and Kiganjo (1987). Secondary education requires an environment that maximizes the educational experience and promotes socialization process both of which are very important at adolescent age. The life-long experiences through physical movements are best inculcated through proper provision and use of the necessary learning resources.

In Kenya, physical education at secondary school level is entirely practical. The activities of physical education programmes require the use of various types of facilities, and apparatus. Tools such as books which outline the technical skills of various games, rules and regulations are very essential for effective teaching at high school. It is assumed that the availability of facilities and equipment, quantity and variety wise, would affect the learning process in physical education just as would be the case in science subjects where laboratories and
chemicals are essential.

Materials useful in instruction include equipment such as shoes, uniforms, balls, sticks, bats, racquets, batons, athletics and gymnastic apparatus. Facilities include outdoor playgrounds for various ball games, the track, and indoor courts such as those normally provided in a multi-purpose gymnasium (Ajíṣáfẹ, 1980). The provision of such facilities and equipment creates a desirable teaching and learning environment for physical education. Individual learners can interact favourably with the teacher in an enriched environment to maximize the learning experience. It is through the provision of an enriched learning environment that the physical education programme can achieve its objectives (Bilbrough & Jones, 1973).

As a non-examination subject, physical education tends to be neglected. It is true that construction of facilities such as gymnasium and swimming pools is too expensive for most secondary schools to afford. However, most physical education facilities and equipment are within the budgetary limits of most secondary schools. It can be argued that expensive facilities would not automatically raise the standards
but no one would dispute the fact that facilities and equipment of moderate standards and availability, are essential if a physical education programme is to achieve its objectives effectively. The importance of physical education in Kenya's educational curriculum is reflected in the new system of education.

The new system of education popularly referred to as 8:4:4 is geared towards practical education. Emphasis is placed on provision of facilities such as workshops, laboratories, libraries and home science rooms (Kenya, 1984). The new education system has physical education as a compulsory subject at primary and secondary school levels (Kenya, 1984). Even before the implementation of the 8:4:4 curriculum, the teaching of physical education at primary school; secondary school; certificate and diploma teacher education institutions was already in practice. To implement the 8:4:4 system of education, establishment of extensive learning facilities was required (Kenya, 1984).
The Ministry of Education emphasized that construction of the necessary physical facilities like workshops, laboratories, libraries and Home Science rooms was to be handled through Harambee efforts (Kenya, 1984). Observations on the impact of cost-sharing on the provision of secondary education acknowledge the role played by the public in providing the facilities (Odada & Odhiambo, 1989). However, no observations have been made as to the provision of playgrounds, swimming pools, athletics tracks, courts and gymnasium in schools. The lack of emphasis on the provision of physical education facilities and equipment reflects the low priority given to the teaching of the subject at our secondary schools.

Hall (1973) observed that facilities for physical education and sports at all levels in Kenya were inadequate. The success of physical education programmes in pre and post independence Kenya has been mainly dependent on the ability of teachers to improvize the limited resources at hand. According to Hall (1973) "it was not uncommon for students and staff to make equipment for physical education classes" (p.184).
On the question of provision of facilities, Hall (1973) interviewed Mr. Ndonye, an inspector of Physical Education in the Ministry of Education, who indicated that efforts by the government to create more facilities were underway. The physical facilities on the priority list included swimming pools, tennis courts, squash courts, and the track and field. However, it was argued that the Kenyan geographical conditions do not require establishment of gymnasiums as absolute necessities for class instruction as compared with countries with winter climate (Hall, 1973). This contention does not mean that the gymnasium should not be provided. Studies on the different levels of physical education curriculum implementation in Kenya (Muniu, 1986; Kiganjo, 1987) cited facilities; equipment and reading materials as being inadequate. Other studies (Hall, 1973; Madeje, 1981; Nteere, 1982) have also discussed the inadequate facilities, equipment and reading materials in the physical education programmes.

The above studies, however, have not addressed the provision of physical education learning resources in secondary schools. Muniu's (1986) and Kiganjo's (1987) studies focused on diploma and primary teachers' colleges respectively. The crux of this study was to provide a detailed analysis of
the provision and adequacy of facilities and other learning resources at secondary school level. The learning resources play a very important part in the process of teaching and learning. In order to have a good physical education programme at secondary school as well as any level, it is imperative that a school has fairly adequate learning resources. Physical education lessons in Kenya are mainly practical at school level. The learning of technical skills requires the use of learning materials. The availability of learning resources enhances the acquisition of the relevant skills. The main objective of this study was to assess the provision and availability of learning resources in terms of facilities, equipment and reading materials for physical education classes at secondary school level.

1.2 THE THEORETICAL BASE OF THE STUDY

The quality of the learning environment as it affects the learners' experience has been comprehensively discussed by Arnold (1972) and Singer and Dick (1974). The process of learning and the usefulness of the learning environment revolves around the philosophical theory of experiential continuum advocated by Dewey and discussed in detail by Arnold (1972). According to Arnold (1972), Dewey emphasized on the quality of experience for the learners because past experiences shape the eventual experiences. The quality of experience means that a child's education should be on-going and integrative in the sense that there is a synthesis of the physical,
intellectual, emotional and social aspects of development (Arnold, 1972).

Two principles explain Dewey's theory namely, the principle of continuity and that of interaction. The former principle calls for on-going experiences if the learners are to mature and grow. The latter principle emphasizes objective and subjective factors of experience. The objective experience is concerned with the environmental conditions of learning and the external stimuli, while the subjective factor is the personal reaction of the pupil.

The availability of learning resources caters for the objective experience. The environmental conditions of learning are manipulated by the teacher to maximize the learning outcomes. According to Singer and Dick (1974) prior to the actual process of learning, students should be familiarized with the immediate situation where the student is presented with the learning environment and the desired stimulation in order to promote learning.
Singer and Dick (1974) observe that:

pertinent facilities, equipment, objects, other people, are possible sources of stimuli. The familiarization process allows the students to view the stimuli and to begin to make generalizations and discriminations (p. 186).

The teaching and learning of motor skills require the student to be acquainted with the relevant stimuli. A student learning soccer, is expected to play within the markings of the field and the selected skills to be learned require appropriate responses like ball control, kicking, shooting, passing and heading. Appropriate responses to the operation of the rules and regulations are essential in order to maintain control and order.

As Singer and Dick (1974) observe:

The student learns behaviours when he can generalize from the conditions and sources of stimuli with relationships understood, the student must be able to detect stimuli and discriminate easily among them in order to respond appropriately (p. 186).

For efficient physical and mental functioning of the students, a favourable sensory environment is desirable (Arnold, 1972). The need for a variety and adequate physical
education facilities and equipment is best understood in the light of the learning environment. The facilities and equipment in physical education are key to the presence of adequate sensory stimuli in learners.

Prominent educational pioneers such as Pestalozzi, Froebel and Montessori recognised the need for adequate sensory stimuli through play materials (Arnold, 1972) in the process of learning. It is argued that a child's intellectual development should arise naturally out of the quality of the environment. Such an environment should be rich in sensory stimulation (Arnold, 1972). In a physical education environment, the presence and use of the relevant playgrounds and apparatus tends to contribute a significant role in the process of sensory stimulation and the consequent learning process.

Arnold (1972) cites Pestalozzi (1826) who observed that "education of the intellect results from the experience of objects which act as stimuli upon our senses" (p. 54).
Mental and physical development of students is linked to their maturation and to their interaction with the environment (Arnold, 1972). The learning environment should therefore have the real facilities, the real game specific apparatus if it has to be effective as a sensory stimulation. *Mere simulation* of a skill as pretending to kick a soccer ball, is not to be equated to the real experience and feeling of kicking the ball (Arnold, 1972). The muscular effort and consequent sensation of the real experience of kicking a ball is different from the experience of pretending to kick a ball.

The objective experience of the learner advocated by Dewey in the theory of experiential continuum (Arnold, 1972) is required in the learning process. The school should have facilities, equipment and reading materials that can serve to stimulate the physical and mental potential of the learners. Rich learning experiences at secondary school level are useful in the future career of the students.
This study attempted to establish the kind of environment that various schools offer for the teaching and learning of physical education. The key features in the physical education learning environment are the various playgrounds, both out-door and indoors; the various sports/games apparatus, and some reading materials. Such a learning environment, when provided, fits in the general 8:4:4 requirement of practical education for all round development of the learners.

1.3 THE PROBLEM

The provision of learning resources is of major concern in the teaching of physical education. The purpose of this study was to establish the provision and availability of the facilities, equipment and reading materials for the teaching and learning of physical education. The study used secondary schools drawn from Uasin Gishu District of the Rift Valley Province of Kenya. The study sought to establish the provision of the physical education learning resources in relation to the following independent
variables:-

(a) the location of the school, whether rural or municipal
(b) the gender in the school, whether a girls' only, boys' only, or mixed school
(c) the sponsorship of the school, whether private or public
(d) the nature of the school, whether day, boarding or both day and boarding school
(e) the school age
(f) the financial allocation to physical education activities
(g) the student enrolment
(h) level of emphasis on physical education.

It was hypothesized that the provision of the various learning resources had a relationship with the variables of location, gender, sponsorship, school nature, school age, financial allocation to physical education and school enrollment. The level of emphasis on physical education in the school in relation with the resource provision was also analysed.
1.4 RESEARCH HYPOTHESES

The study was designed with the following hypotheses, all in the null form, for testing purposes:

H01: There is no relationship between the variety (type) of facilities provided and the:
   (a) location of the school
   (b) sponsorship of the school
   (c) gender in the school
   (d) nature of the school.

H02: There is no relationship between the provision of indoor facilities and the:
   (a) location of the school
   (b) sponsorship of the school
   (c) gender in the school
   (d) nature of the school.

H03: There is no relationship between the provision of outdoor facilities and the:
(a) location of the school.
(b) sponsorship of the school.
(c) sex gender in the school.
(d) nature of the school.

H04: There is no relationship between the provision of a variety of equipment and:
(a) location of the school.
(b) sponsorship of the school.
(c) sex gender in the school.
(d) nature of the school.

H05: There is no relationship between the level of availability of equipment and the:
(a) location of the school,
(b) sponsorship of the school,
(c) sex gender in the school.
(d) nature of the school.

H06: There is no relationship between the number of years the school has been in existence and:
(a) level of provision of outdoor facilities.
(b) availability of equipment.
(c) provision of pupils' reference books.
(d) provision of the teachers' P.E. reference books.

H07: There is no relationship between the financial allocation to physical education and sports activities and the:
(a) provision of equipment.
(b) maintenance of outdoor facilities.

H08: There is no relationship between the student roll in the school and:
(a) provision of outdoor facilities.
(b) variety of equipment provided.
(c) number of sports' facilities provided.

H09: There is no relationship between the level of emphasis on physical education and:
(a) level of provision of outdoor facilities.
(b) provision of teachers' reference books.
(c) provision of pupils' reference books
(d) percentage total school expenditure spent on P.E. activities
(e) annual purchase of P.E. equipment
(f) school age

HO 10: There is no relationship between the percentage of the total school expenditure spent on physical education and sports activities and:
(a) provision of outdoor facilities
(b) annual purchase of equipment
(c) maintenance of outdoor facilities.

1.5 SIGNIFICANCE OF THE STUDY

There has never been any systematic scientific study carried out specifically on physical education facilities and learning resources in Kenya. The findings of this study are expected to create an awareness of what is available in terms of the learning resources with specific reference to Uasin Gishu District. The findings are expected to particularly benefit:
(a) the policy makers in the Ministry of Education who will get first hand information on the current state of physical education learning resources in secondary schools.

(b) the physical educators in evolving strategies to promote the physical education subject in the country through provision of the required and essential learning resources.

(c) the Kenya Institute of Education in its endeavour to develop curriculum materials for physical education. The findings will help in determining the priority areas in the allocation and distribution of the learning resources.
(d) the students of physical education in terms of availability of empirical studies and findings. The study will, not only be a useful addition to the scant empirical studies in Kenya but also, be a stimulant to further studies in the realm of the physical education learning environment.

1.6 ASSUMPTIONS OF THE STUDY

The following assumptions guided the research study:

(a) That the respondents would provide genuine responses reflecting the state of facilities and learning resources in the respective schools.

(b) That the feedback from the respondents would not be unduly biased.

(c) That all secondary schools in the sample studied would have provision for either the teaching of
physical education or involvement in some sports or both.

(d) That the respondents would not be unduly influenced by personal delivery of the questionnaires.

1.7 LIMITATIONS OF THE STUDY

The study was conducted bearing in mind the following limitations:

(a) There was inadequate related local literature in this area of study. Availability of such literature would have offered more support and insight into the study.

(b) The study was confined to only secondary schools drawn from one district. Hence the findings can not be generalized beyond the secondary schools in Uasin Gishu district, Kenya.

(c) The study only considered the provision and availability of the specified learning resources, but not their (resources) utility.
OPERATIONAL DEFINITIONS AND ABBREVIATIONS

Adequacy: The relative level of rating on a three point scale by physical education teachers as to the availability of learning resources for purposes of instruction and learning. The scale includes adequate, satisfactory and inadequate.

A non-parametric test: Is a test whose model does not specify conditions about the parameters of the population from which the sample was drawn (Kerlinger, 1973 p.286).

Equipment: The movable apparatus in physical education such as hockey sticks, balls, footwear, gymnastic apparatus, table tennis tables, racquets, bats, athletics apparatus (see appendix D).
Expost facto research: It is a systematic empirical inquiry in which the scientist does not have direct control of independent variables because their manifestations have already occurred or because they are inherently not manipulable (Kerlinger, 1973 p. 379).

Facilities: Refers to indoor and outdoor teaching areas of physical education and playing courts for various ball games and gymnasium.

Learning Resources: In its more general sense appears to be generally inclusive of all things and people that can be brought to bear on the act of learning (Walton and Ruck, 1975 p. 15). In this study, the things considered include those falling under physical education facilities, equipment and reading materials.

Municipal School: A school located within the jurisdiction of Eldoret Municipal Council.

Rural School: A school located outside the jurisdiction of Eldoret Municipal Council, but within Uasin Gishu district.
**Physical Education:** Means all the educational experiences acquired through guided physical movements in the school.

**School type:** Refers to sex composition of the school, the school sponsors and whether the school is a day or boarding institution or both.

**8:4:4 Education System:** Refers to the new Kenyan Education structure of eight years of primary education; four years of secondary education, and four years of basic university education.

- **C:** Contingency coefficient values
- **C max:** Maximum value of contingency coefficient
- **Cv:** Critical value
- **DF:** Degree of freedom
- **Fre:** Frequency
- **X²:** Chi-square values
- **0:** Nil
CHAPTER TWO

REVIEW OF LITERATURE

2.1 INTRODUCTION

This chapter is divided into two related sections. The first section involves a review of literature that pertains to studies done in other countries. The second section deals with empirical studies carried out in Kenya.

2.2 STUDIES DONE IN OTHER COUNTRIES

Bennett, Howell and Simri (1983) carried out an assessment of physical education on a world-wide scale. They argued that almost any international group of physical educators can find a common ground for discussion in their need for better facilities and equipment in their schools. Some of the typically deficient facilities include the gymnasium and other indoor areas.

Some countries recognized the inadequacy of physical education facilities and equipment and launched efforts to improve the situation (Bennett et al., 1983). Countries
that have had success with the systematic efforts to improve facilities include Austria, Japan and the Federal Republic of Germany. Other countries laid down specific requirements for provision of new facilities. In England, local authorities are by law required to provide facilities for physical education and recreation (Bennett et al., 1983). Other countries with specific requirements include Sweden, Finland, Israel and Denmark.

Some schools sort out the problem of inadequate facilities by using off the school compound facilities. For example, in Mexico City, students travel as far as ten miles across the city to use modern facilities. The use of swimming pools located away from the school is common practice in some countries (Bennett et al., 1983).

The countries that do not have students commuting to the facilities are those that have adequate school site facilities like Japan or cannot afford that kind of arrangement.

On equipment, Bennett et al., (1983) contend that students and teachers from the developed countries can
scarcely appreciate the great hardships faced by those in developing nations. The authors cite examples of such hardships:

A class of Bedouin youngsters doing calisthenics under a hot sun next to one room school shack in the Sinai illustrates a minimal program with only a barren field for use. In the rural Philippines, children use plastic bags for volley ball and tree branches for jumping bars. Nigerian pupils make bean bags from cane, weave mats from savannah grass, and use boxes and logs for vaulting and jumping (p.49).

Yet in a world of contrasting fortunes virtually all Finnish schools are said to have balls and equipment for track and field. Also ninety (90) per cent have bandy equipment, and over one-third of the schools own skis, ice-skates, and equipment for ice hockey (Bennett et al, 1983). The authors further observe that the developing countries face problems in acquiring equipment. The equipment has to be purchased from abroad which makes it very expensive, time consuming and complicated by money exchange problems.

Facility and equipment availability for physical education and sports has attracted the attention of the

UNESCO (1979) recommended that it is important that "schools should have at their disposal ample and well equipped gymnasia, playing fields and sports grounds which satisfy the most modern requirements of hygiene" (p. 59). UNESCO in the Journal of Physical Education and Recreation (UNESCO, September, 1980) emphasized the need for adequate facilities and equipment for physical education in its international charter of physical education and sport.

It is stated in the charter that:

Adequate and sufficient facilities and equipment should be provided and installed to meet the needs of intensive and safe participation in both in-school and out-of-school programs concerning physical education and sport (UNESCO, September, 1980 p. 23).

The charter called upon governments, public authorities, schools and other private agencies to join forces in planning for the provision and optimum utilization of installations, facilities and equipment for physical
education and sports (UNESCO, September, 1980).
The charter urged various countries to provide for the long term needs in the matter of installations, facilities and equipment for physical education and sport. The provision of such facilities and equipment should consider the opportunities offered by the environment (UNESCO, September, 1980).

Earlier, UNESCO (1973) had commissioned Scriven to undertake a survey on the existing knowledge of planning and design of sports facilities for primary and secondary schools in the developing countries. Scriven identified the lack of money to build facilities and buy equipment as the top ranked problem facing physical education and sports programmes.

Scriven (1973) contended that the main difference in physical education and sport in schools between developing and developed countries was lack of money. Despite the fact that developing countries devoted a high proportion of their national income to education, little went to physical education and sports' facilities, equipment and
reading materials. The expansion of the educational systems was so great and rapid that there was no money to be spent on gymasia, swimming pools, tennis courts and the necessary equipment. Scriven (1973) observed that:

The provision of facilities for physical education and sport is low on the list of priorities and is sometimes not considered at all (p. 19).

Yet in the United States of America, it has been estimated that fifteen per cent of every dollar spent on schools is spent on facilities for physical education and sport (Scriven, 1973). Given the enormous problems facing developing countries such as the mounting foreign debt, diseases, poverty and illiteracy, money spent on elaborate physical education facilities and learning resources may not be perceived as a viable use of the national resources.

Shortage of qualified physical education teachers complicates the provision of facilities and learning resources. Scriven (1973) posed the question:
Is it worth building the facilities if there are not enough teachers or alternatively is it worth increasing the number of teachers if there are no facilities? (p. 20 - 21).

The question is pertinent given that it requires trained physical education teachers to properly utilize the available facilities or recommend what is required. The absence of trained physical education teachers renders the facilities, if available, under-utilized or misused. The revealing aspect of Scriven's (1973) survey was that the major problems to be overcome if physical education programmes were to be improved included lack of facilities such as gymnasiums, sports fields, playgrounds, swimming pools and the lack of qualified teachers.

In the same survey, Scriven (1973) extensively cited a Mr. Arro of the Zambian Ministry of Education who argued that western trained physical education instructors were not necessarily the best for the East and Central African countries. The point of contention was the fact that such teachers were not well trained for African conditions where
Apparatus are a luxury. Stating that such teachers devoted the major part of their training to apparatus work and indoor work, the Zambian representative stated that:

Apparatus work consists of such things as wall bars, beams, vaulting boxes and horses, trampolines, ropes, bucks, aerowheels, agility mattresses, spring boards...most if not all of these things would never be used or even seen during a lifetime of teaching under East African conditions (Scriven, 1973 p. 21).

What is clear in the above submissions is the fact that physical education teachers for tropical African countries require training tailored to the local conditions. The greatest characteristic of the local conditions is the scarce resources and relative absence of standard facilities and equipment. Such convictions however required an empirical investigation to establish the presence or absence and the general provision of facilities and learning resources in the Kenyan physical education programmes.

In a study carried out in secondary schools in England and Wales, Kane (1974) established that "facilities avail-
able may affect, or may be thought to affect the pursuit of objectives" (p.37) of physical education.

On the adequacy of on-site facilities, head of physical education departments on average regarded their facilities as just satisfactory. On off-site facilities only a very small percentage used them for dance and gymnastics, whereas two thirds of them used off-site swimming pools. The off-site facilities were however thought to be either not up to standard like the swimming pools or poor like out-door games and off-site athletics facilities. Of the departments that had to travel to use off-site facilities, ninety (90) per cent estimated that up to thirty (30) per cent of physical education time was spent in journeying to and from the site. It was also found that on average twenty (20) per cent of physical education time was devoted to ancillary functions such as showering and changing for and after physical education lessons.

The findings of the cited studies on facilities and equipment may not apply to the needs of physical education departments in Kenya. All the cited studies
were not conducted in a Kenyan context. A specific study on facilities, equipment and reading materials was therefore desirable. This study attempted to satisfy that need.

2.3 STUDIES IN KENYA

Hall (1973) undertook a study on The Role of Physical Education and Sport in the Nation: Building Process in Kenya. While analysing the development of physical education programmes in Kenya, Hall contended that the facilities at all levels of school and outside school were inadequate. The author therefore concluded that the lack of facilities had an adverse effect on the physical education programmes. The study however only mentioned physical education facilities, equipment and reading materials in passing.

Nteere (1982) pointed out a discrepancy in the facility availability in secondary schools that were previously exclusively for Africans and those for the white community during colonial days. The latter schools had better and elaborate facilities and therefore equipment and supplies. Such schools had a higher financial grant from the colonial government.
Nteere (1982) concurs with Scriven (1973) and Bennett et al, (1983) on the economic difficulties which act as a stumbling block to the development of basic sports facilities in schools. Nteere's study, like that of Hall (1973) lacks an in-depth assessment of the status of physical education facilities and learning resources in Kenyan secondary schools.

Muniu (1986) concluded that though equipment may have been regularly replaced, it was never enough at any one time. On the type of games played which reflected the facilities provided, the following games were consistently mentioned: soccer, netball, volleyball and hockey. Games such as rugby, lawn tennis and badminton were offered by few colleges. This reflects the relative absence of diverse and necessary facilities and equipment. Thirty five point seven (35.7) per cent of the respondents also cited lack of books as a handicap to effective curriculum implementation of physical education at Diploma college level.
Kiganjo (1987) identified facilities, equipment and reference books as some of the sources of problems for physical education tutors in their endeavour to implement the physical education curriculum in primary teachers' colleges in Kenya. The findings indicated that the textbooks available to the physical education department were inadequate, both for members of staff and students. The majority of the respondents stated that the supply of equipment was insufficient. All the respondents indicated that indoor facilities for physical education were lacking, while sixty seven (67) per cent stated that outdoor facilities were inadequate. Eighty (80) per cent of the respondents stated that the financial allocation to the physical education departments in primary teachers' colleges was inadequate.

Muniu's (1986) and Kiganjo's (1987) findings reveal contrasting states of outdoor facilities and their maintenance. In Diploma colleges, the outdoor facilities and the maintenance are deemed to be adequate (Muniu, 1986) while at primary teachers' colleges' level, the
outdoor facilities and the maintenance are inadequate (Kiganjo, 1987). Both studies however were not conducted at secondary school level. There was therefore a need to carry out an empirical assessment of the physical education facilities and learning resources in secondary schools in Kenya.
CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

This chapter focuses on the description of the methodology and research design used in this study. The chapter covers location of the study, research design, sampling of subjects, instruments of data collection, data collection procedure and data analysis techniques.

3.2 LOCATION OF THE STUDY

The study was carried out using secondary schools drawn from the Uasin Gishu district of the Rift Valley province of Kenya. Uasin Gishu district is located in the Western Highlands of the Rift Valley Province approximately 310 kilometers to the Northwest of Nairobi, the capital city of Kenya. The district depends on agriculture as the main source of economy. Majority of the farmers practice mixed farming on both small scale and
large scale farms. The predominant crops are wheat and maize. The majority of the farmers are essentially dairy farmers.

Eldoret town is the only major urban centre in the entire district. The town is one of the most rapidly growing industrial and commercial towns in Kenya. The districts' agricultural produce are stored, marketed and distributed from the district's capital which is linked to Nairobi, Mombasa and Uganda by both rail and road. By 1988 the town's population was projected to be 78,942 people (Kenya, 1984). The town caters for industrial, commercial and educational interests of national significance. The major educational institutions within the proximity of Eldoret town are Moi University, Chepkoilel, the recently established University campus previously Moi Teachers College, and Eldoret Moi Polytechnic, Kenya's third national polytechnic. The town has fifteen secondary schools within its municipal boundaries.

The district has relatively vast agricultural and commercial resources. On the basis of these resources the
municipality of Eldoret and the District of Uasin Gishu have adequately reasonable resources. This study sought to establish whether secondary schools, especially the physical education and sports programmes had benefitted from the wealth in the district acquired through the vast agricultural produce, commercial and industrial development.

3.3 THE RESEARCH DESIGN

The ex post facto research was used in this study. This research design was deemed appropriate because it attempts to establish the existing conditions and relationships. In this study the design sought to establish the general availability or provision of facilities, equipment and reading materials for the teaching and learning of physical education in secondary schools in the Uasin Gishu District. According to Kerlinger (1973), ex post facto research designs should be done in areas like psychology, sociology and education because "many research problems in the social sciences and education do not lend
themselves to experimental inquiry" (pp.391-2).
This study did not involve control over the variables.
The variables were studied the way they were without any manipulation as required in experimental studies.

3.4 SAMPLING OF SUBJECTS

The target population consisted of forty (40) secondary schools selected by stratified random sampling, from fifty-seven schools. The stratified sample was deemed appropriate as it facilitated selection of representative samples of municipal and rural schools; all girls; all boys' and mixed schools. There were fifteen (15) schools in the municipality and forty-two (42) in the rural district. Two of the schools were for boys' only; eight for girls' only and forty-seven were mixed schools.

The respondents for the study included the heads of physical education departments. In the absence of such a head of department, the games teacher was used. The head
of the department or games teacher were deemed to be in a position to provide realistic and objective responses with regard to the provision and availability of the facilities and learning resources for the teaching and learning of physical education in the school. Their selection was pre-determined by the selection of the school.

Forty head teachers of the forty (40) schools participated in the study. The head teachers were considered better prepared to give authoritative views on the financial allocation to physical education activities; the student enrollment; the school age; plans to build any additional facilities; and to state the major constraints that the schools faced in an attempt to provide facilities and learning resources for physical education. The selection of the head teachers was pre-determined by the selection of the school into the sample.

3.5 RESEARCH INSTRUMENT

The research instrument used in this study was the questionnaire. The questionnaire was administered directly
to the respondents. The direct contact approach was found suitable as it made it possible to get the consent of the respondents.

The questionnaire was split into two sections. Section one of the questionnaire was filled by the head of the physical education department and section two was completed by the head of the school. The items in both the sections of the questionnaire pertained to the learning resources provided in the school. The head teachers' section dealt with areas that a head of department could not be fully conversant with such as the financial allocation to physical education activities.

For purposes of statistical tabulation and analysis the questions used in this study were the restricted and the open ended ones. The latter type however required short answers and mainly in terms of listing. The questionnaire was mainly on a three point scale. The three point scale was a modified Likert type due to the sample size of the study.
The scale was representative of the relative rating by the respondents on the degree of adequacy of the resources. The rating was on the basis of whether the specified resource was adequate, satisfactory or inadequate. On a point scale, adequate was allocated three (3) points; satisfactory, two (2) points and inadequate was given one (1) point. The use of the three point scale was in agreement with Sax (1979) who stated that although Likert used a five (5) point scale, it is possible to use fewer or more than five categories.

(a) **HEAD OF PHYSICAL EDUCATION SECTION OF THE QUESTIONNAIRE**

The head of physical education departments' section of the questionnaire had three parts. The first part sought general information about the school including the position of the respondent, school gender, location of the school, nature of the school (boarding, day or day and boarding), whether physical education was provided for in the school or not.
The second part sought the responses of the head of physical education department about the degree of adequacy of the facilities and learning resources for the teaching of the subject in the school. The third part sought information on the facilities and learning resources available for the specific sports/games offered in the school.

(b) HEAD TEACHERS' SECTION OF THE QUESTIONNAIRE

The head teachers' section of the questionnaire sought to establish general information about the school in the first part. Specifically the items in the first part sought information pertaining to the student roll in the school and the number of years the school had been in existence. In the second part the information asked included the annual financial allocation to physical education and the percentage of the total school expenditure that was allocated to physical education activities. Also information was sought on whether the school had
constructed facilities recently, and if there were plans to construct any in the near future.

3.6 PILOTING

Piloting of the questionnaire was done using schools drawn from Nairobi city and the Kiambu District rural area. The piloting was done in order to assess the suitability of the questionnaire items; the wording of the questions; to assess the consistency in the responses and the type of responses expected. The responses from the respondents in the pilot stage made it possible for structural improvements to be made on the questionnaire. More significantly the piloting assisted in establishing the consistency of the responses. The consistency observed in the pilot study provided the necessary confidence in the responses to the questionnaire items.
3.7 DATA COLLECTION PROCEDURE

Before proceeding for data collection a clearance permit number Op.13/001/20C22 was obtained from the Office of the President. The researcher further reported to the Uasin Gishu district Education Officer before embarking on the actual visit to the schools.

The researcher visited all the forty (40) selected schools to administer the questionnaires. The questionnaires were administered with the consent of the school administration and the respective teachers that were involved in the study. All the questionnaires were filled.

3.8 DATA ANALYSIS TECHNIQUES

The data obtained from the field were coded for analysis by computer using the statistical package for social sciences (SPSS) programme (Nie N.H. et al, 1975). The type of computer used was International Computers Limited (ICL) 75402 system. The analysis was done in order to test the hypotheses formulated
for this study in chapter one, section four (4) above.

Given the nominal nature of the data in this study, the statistical technique used to test the hypotheses was the Chi-square test of independence.

3.8.1 THE CHI-SQUARE TEST

The Chi-square test was used because the data involved was of nominal nature. The Chi-square test involves testing for the differences between the frequencies obtained (Oppenheim, 1982). According to Babbie (1975) Chi square is a frequently used test of significance in a social science. The test was therefore used to establish the relationship between the provision of the learning resources for the teaching and learning of physical education and the location, sponsorship, gender, nature of the school, school age, school roll and the financial allocation to the subjects (P.E.) activities.
The Chi-square test was used to establish that the relationship between the specified variables was not just due to chance. Basically, a Chi-square test only shows whether the variables were independent or related. The Chi square findings were further converted to the contingency coefficient to reflect the strength of the relationships between specified variables.

The Chi square formulae is:

\[ \chi^2 = \sum \frac{(f_{oi} - f_{ei})^2}{f_{ei}} \]

where: \( f_{oi} \) equals the observed frequency in each cell

\( f_{ei} \) equals the expected frequency calculated as:

\[ f_{ei} = \frac{(Ci \cdot ri)}{N} \]

where \( Ci \) is the frequency in a respective marginal column

\( ri \) is the frequency in a respective raw marginal

\( N \) is the total number of valid cases (Nie N.H. et al 1975 p. 223).
The interpretation of Chi-square is dependent on the discrepancy between the expected and the actual frequencies. The greater the discrepancy between the actual and the expected frequencies the larger the Chi-square (Nie N.H et al, 1975). The level of significance at which the stated hypotheses were rejected or not rejected was $P < .05$.

3.8.2 THE CONTINGENCY COEFFICIENT

A contingency coefficient ($c$) is computed directly from the Chi-square ($X^2$) value. The maximum value of the contingency coefficient is not one. The determination of the maximum value of a specific contingency table is obtained with the formula:

$$C_{max} = \frac{K - I}{K}$$

where $K$ = number of categories in the variable that has fewer categories.

The computed contingency coefficient figure is therefore compared to the findings of formular one above. The
contingency coefficient tests for the magnitude of a relationship between variables. Hinkle, Wiersma and Jurs (1979) state that "in order to determine the strength of the relationship, it is necessary to compute a correlation coefficient" (p. 349).

According to Hinkle et al (1979) the contingency coefficient does not have a maximum value of one (1.0). For each given contingency table an estimate of the maximum value of the contingency coefficient can be obtained by using a formula which is based on the number of categories of each of the variables (formulae two above). In this study the contingency tables are 3 + 2 and 3 x 3, thereby having contingency coefficient of 0.707 and 0.816 respectively.
4.1.0 INTRODUCTION

This chapter is divided into three main sections. The first section deals with description of raw data obtained from the respondents to the questionnaire. The second section concerns itself with the analysis of the raw data in line with the hypotheses formulated for this study. Section three is the discussion.

4.1.1 DETAILS ABOUT THE RESPONDENTS

A total of forty (40) secondary schools were selected and all took part in the study. The schools were represented through the responses of the teachers who were either heads of the physical education department or games teachers of both. Table 4.1 below shows the position of the respondents.
TABLE 4.1 POSITION OF THE RESPONDENTS (EXCLUDING HEADTEACHERS)

<table>
<thead>
<tr>
<th>Position</th>
<th>Absolute Frequency</th>
<th>Percent</th>
<th>Cumulative Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head of P.E. department - n =</td>
<td>11</td>
<td>27.5</td>
<td>27.5</td>
</tr>
<tr>
<td>Games Teacher - n =</td>
<td>24</td>
<td>60.0</td>
<td>87.5</td>
</tr>
<tr>
<td>Both head and Games Teacher -  n =</td>
<td>5</td>
<td>12.5</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>TOTAL N =</strong></td>
<td><strong>40</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

The high number of games teachers as opposed to heads of physical education departments reflects the lack of distinct identity of the subject in the school. The Headteachers filled the second part of each questionnaire.

From table 4.2, it can be observed that the schools used in the study are either located within the Eldoret Municipal Council jurisdiction area or outside the municipality but within Uasin Gishu district.

TABLE 4.2 THE LOCATION OF THE SCHOOLS

<table>
<thead>
<tr>
<th>Location</th>
<th>Absolute Frequency</th>
<th>Relative Frequency (%)</th>
<th>Cumulative Frequency %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal</td>
<td>n = 15</td>
<td>37.5</td>
<td>37.5</td>
</tr>
<tr>
<td>Rural</td>
<td>n = 25</td>
<td>62.5</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>N = 40</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Table 4.3 below shows the gender in the schools. The finding shows that most of the schools in Uasin Gishu district are mixed schools. Boys' only schools are quite insignificant in number. (2).

**TABLE 4.3 SCHOOLS BY GENDER**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Absolute Frequency</th>
<th>Relative Frequency (Percent)</th>
<th>Cumulative Frequency (Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixed schools n=30</td>
<td>30</td>
<td>75.0</td>
<td>75.0</td>
</tr>
<tr>
<td>Girls' only n=8</td>
<td>8</td>
<td>20.0</td>
<td>95.0</td>
</tr>
<tr>
<td>Boys' only n=2</td>
<td>2</td>
<td>5.0</td>
<td>100.0</td>
</tr>
<tr>
<td>TOTAL N=40</td>
<td>40</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The schools are either sponsored by public (Government aided) or are sponsored by private individuals and religious groups (Private schools). 27 (67.5 per cent) schools were public sponsored, while 13 (32.5 per cent) are privately sponsored.

From Table 4.4. below, it can be observed that the majority of schools operate as day with few schools operating
strictly as boarding institutions. The majority of students commute to school from home on a daily basis during school days.

**TABLE 4.4. NATURE OF THE SCHOOL**

<table>
<thead>
<tr>
<th></th>
<th>Absolute Frequency</th>
<th>Relative Frequency</th>
<th>Cumulative Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day</td>
<td>n = 18</td>
<td>45.0</td>
<td>45.0</td>
</tr>
<tr>
<td>Boarding</td>
<td>n = 9</td>
<td>22.5</td>
<td>67.0</td>
</tr>
<tr>
<td>Boarding and Day</td>
<td>n = 13</td>
<td>32.5</td>
<td>100.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>N = 40</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Thirty-nine (97.5 per cent) schools in the study offered physical education, while only 1 (2.5 per cent) did not offer it. The high number of schools offering physical education reflects a possible acceptance of physical education as one of the subjects in the school curriculum. But as to the emphasis that is laid on the teaching of the subject in the school, only 7 (17.5 per cent) indicated adequate emphasis,
with 19 (47.5 per cent) and 14 (35.0 per cent) indicating satisfactory and inadequate emphasis respectively.

Table 4.5 below shows that most schools are relatively small with a student population of less than 300.

<table>
<thead>
<tr>
<th>TABLE 4.5 CURRENT PUPIL ENROLMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ABSOLUTE FREQUENCY</strong></td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>less than 299</td>
</tr>
<tr>
<td>300 - 599</td>
</tr>
<tr>
<td>600 - above</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>

As to the number of years the schools have been in existence, 18 (45.0 per cent) are less than nine years old; 14 (35.0 per cent) range between 10 and 19 years old and only 8 (20.0 per cent) had been in existence for more than 20 years.

It appears that most schools came into existence in the period just preceding the launching of the 8:4:4 system of education at secondary school level. The system was launched at
secondary school level in 1986.

4.1.2 **PROVISION OF RESOURCES**

On the availability of reading materials in the schools, the average mean on the responses to all the items on this aspect was 1.35, which falls under inadequate (see Table 4.6 below). On a three point scale of 1 to 3, reflecting whether the stated resource was provided inadequately, satisfactorily or adequately. The responses on reading materials provision averaged 1.35 out of the possible maximum of 3, showing that the availability of physical education reading materials for teachers and pupils; the annual purchase; rate of acquisition; and availability of P,E. reading materials was inadequate.
### Table 4.6 Responses on Adequacy of Reading Materials

<table>
<thead>
<tr>
<th>ITEM</th>
<th>RESPONSE</th>
<th>INADEQUATE</th>
<th>SATISFACTORY</th>
<th>ADEQUATE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Textbooks for P.E. teachers</td>
<td></td>
<td>25</td>
<td>62.5</td>
<td>13</td>
<td>22.5</td>
</tr>
<tr>
<td>P.E. books for pupils reference</td>
<td></td>
<td>35</td>
<td>87.5</td>
<td>3</td>
<td>7.5</td>
</tr>
<tr>
<td>Annual purchase of P.E. books</td>
<td></td>
<td>33</td>
<td>82.5</td>
<td>5</td>
<td>12.5</td>
</tr>
<tr>
<td>Rate of acquisition of reference material</td>
<td></td>
<td>33</td>
<td>82.5</td>
<td>5</td>
<td>12.5</td>
</tr>
<tr>
<td>Availability of P.E. related information</td>
<td></td>
<td>14</td>
<td>35.0</td>
<td>24</td>
<td>60.0</td>
</tr>
</tbody>
</table>

The inadequate provision of reading materials in the schools suggests that teachers of physical education are possibly the sole sources of information, knowledge and skills to be acquired in school. In the absence of books, very little knowledge of the subject is propagated through library sources.

Regarding reading materials or books on specific games/sports that are contained in the physical education syllabus for secondary schools, Table 4.7 shows the raw data on the affairs in the sampled schools.
<table>
<thead>
<tr>
<th>Game</th>
<th>Inadequate F.</th>
<th>Inadequate %</th>
<th>Satisfactory F.</th>
<th>Satisfactory %</th>
<th>Adequate F.</th>
<th>Adequate %</th>
<th>No. Res.</th>
<th>No. Res. %</th>
<th>Total F.</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volleyball</td>
<td>27</td>
<td>67.5</td>
<td>8</td>
<td>20.0</td>
<td>4</td>
<td>10.0</td>
<td>1</td>
<td>2.5</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Soccer</td>
<td>26</td>
<td>65.0</td>
<td>6</td>
<td>15.0</td>
<td>2</td>
<td>5.0</td>
<td>6</td>
<td>15.0</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Netball</td>
<td>25</td>
<td>62.5</td>
<td>7</td>
<td>17.0</td>
<td>2</td>
<td>5.0</td>
<td>6</td>
<td>15.0</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Athletics</td>
<td>21</td>
<td>52.5</td>
<td>7</td>
<td>17.5</td>
<td>2</td>
<td>5.0</td>
<td>10</td>
<td>25.0</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Hockey</td>
<td>10</td>
<td>25.0</td>
<td>2</td>
<td>5.0</td>
<td>2</td>
<td>5.0</td>
<td>21</td>
<td>65.0</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Basketball</td>
<td>5</td>
<td>12.5</td>
<td>1</td>
<td>2.5</td>
<td>1</td>
<td>2.5</td>
<td>33</td>
<td>82.5</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Tae-Kwondo</td>
<td>2</td>
<td>5.0</td>
<td>Nil</td>
<td>Nil</td>
<td>2</td>
<td>5.0</td>
<td>36</td>
<td>90.0</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Rugby</td>
<td>2</td>
<td>5.0</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>38</td>
<td>95.0</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Lawn Tennis</td>
<td>2</td>
<td>5.0</td>
<td>1</td>
<td>2.5</td>
<td>1</td>
<td>2.5</td>
<td>36</td>
<td>90.0</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Swimming</td>
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<td>5.0</td>
<td>1</td>
<td>2.5</td>
<td>1</td>
<td>2.5</td>
<td>36</td>
<td>90.0</td>
<td>40</td>
<td>100</td>
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<tr>
<td>Dance</td>
<td>2</td>
<td>5.0</td>
<td>1</td>
<td>2.5</td>
<td>Nil</td>
<td>Nil</td>
<td>37</td>
<td>92.5</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Handball</td>
<td>1</td>
<td>2.5</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>39</td>
<td>97.5</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Judo</td>
<td>1</td>
<td>2.5</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>39</td>
<td>97.5</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Rounders</td>
<td>1</td>
<td>2.5</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>39</td>
<td>97.5</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Karate</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>40</td>
<td>100</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Martial arts</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>40</td>
<td>100</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Boxing</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
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<td>Nil</td>
<td>40</td>
<td>100</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Wrestling</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>40</td>
<td>100</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>
The findings shown in Table 4.7 also reveal the games/sports that are offered in the various schools. The games/sports of soccer, netball, hockey, volleyball and athletics are the ones that have some reading materials. The materials are still largely inadequate in the majority of schools.

When asked what the main constraint in the acquisition of P.E. books was, the responses indicated the shortage of finance. The financial problems represented 24 (60 per cent) of the responses; 10 (25.0 per cent) cited non-availability of the books to purchase; 4 (10.0 per cent) cited the lack of initiative on the part of physical education teachers, and 2 (5.0 per cent) cited jointly the lack of finance and the non-availability of the physical education books to be bought.

On the physical education equipment available in the schools, the responses revealed that 9 (22.5 per cent) had inadequate; 23 (57.5 per cent) had satisfactory and 8 (20.0 per cent) had adequate equipment for the games/sports offered in the school. The annual purchase of the equipment was cited as inadequate by 11 (25.5 per cent); 22 (55.0 per cent)
satisfactory and 7 (17.5 per cent) adequate respectively.

On the variety of the equipment 13 (32.5 per cent) stated that it was inadequate, 24 (60.0 per cent) indicated it was satisfactory and 3 (7.5 per cent) indicated the variety of equipment offered was adequate.

On the level of quality of equipment in terms of utility, 9 (22.5 per cent) stated it was inadequate; 28 (70.0 per cent) satisfactory and only 3 (7.5 per cent) adequate. The equipment provided for effective usage should be of reasonable standard if the learners are to be properly exposed. It appears that the physical education and sports departments are relatively satisfied with the quality of the equipment provided.

On whether the department is consulted before purchasing of equipment is made 9 (22.5 per cent) declared the level of consultation as inadequate; 25 (62.5 per cent) satisfactory and 6 (15.0 per cent) indicated it was adequate. There is relatively a satisfactory level of consultation before
the necessary and relevant equipment is bought.

The involvement of the physical education and
sports teachers in the acquisition of equipment is
vital as the right equipment that meets the require-
ments of the learners is acquired.

Table 4.8 below shows the level of availability
of the equipment vis-a-vis the various specific
physical education and sports activities that compri-
se the secondary school syllabus.
TABLE 4.8: AVAILABILITY OF EQUIPMENT ON SPECIFIC GAMES

<table>
<thead>
<tr>
<th></th>
<th>INADEQUATE</th>
<th></th>
<th>SATISFACTORY</th>
<th></th>
<th>ADEQUATE</th>
<th></th>
<th>NO RESPONSE</th>
<th></th>
<th>TOTAL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FRE.</td>
<td>%</td>
<td>FRE.</td>
<td>%</td>
<td>FRE.</td>
<td>%</td>
<td>FRE.</td>
<td>%</td>
<td>FRE.</td>
<td>%</td>
</tr>
<tr>
<td>Soccer</td>
<td>6</td>
<td>15.0</td>
<td>15</td>
<td>37.5</td>
<td>11</td>
<td>27.5</td>
<td>8</td>
<td>20.0</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Netball</td>
<td>5</td>
<td>12.5</td>
<td>19</td>
<td>47.5</td>
<td>8</td>
<td>20.0</td>
<td>8</td>
<td>20.0</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Volleyball</td>
<td>6</td>
<td>15.0</td>
<td>19</td>
<td>47.5</td>
<td>13</td>
<td>32.5</td>
<td>2</td>
<td>5.0</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Athletics</td>
<td>8</td>
<td>20.0</td>
<td>12</td>
<td>30.0</td>
<td>8</td>
<td>20.0</td>
<td>12</td>
<td>30.0</td>
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<td>100</td>
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<tr>
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<td>Nil</td>
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<td>17.5</td>
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<td>15.0</td>
<td>27</td>
<td>67.5</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Basketball</td>
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<td>Nil</td>
<td>5</td>
<td>12.5</td>
<td>2</td>
<td>5.0</td>
<td>33</td>
<td>82.5</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Wrestling</td>
<td>2</td>
<td>5.0</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>38</td>
<td>95.0</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Taekwondo</td>
<td>2</td>
<td>5.0</td>
<td>1</td>
<td>2.5</td>
<td>Nil</td>
<td>Nil</td>
<td>37</td>
<td>92.5</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Rounders</td>
<td>1</td>
<td>2.5</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>39</td>
<td>97.5</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Judo</td>
<td>1</td>
<td>2.5</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>39</td>
<td>97.5</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Lawn Tennis</td>
<td>1</td>
<td>2.5</td>
<td>1</td>
<td>2.5</td>
<td>2</td>
<td>5.0</td>
<td>36</td>
<td>90.0</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Dance</td>
<td>1</td>
<td>2.5</td>
<td>4</td>
<td>10.0</td>
<td>Nil</td>
<td>Nil</td>
<td>35</td>
<td>87.5</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Martial art</td>
<td>Nil</td>
<td>Nil</td>
<td>2</td>
<td>5.0</td>
<td>Nil</td>
<td>Nil</td>
<td>38</td>
<td>95.0</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Boxing</td>
<td>Nil</td>
<td>Nil</td>
<td>2</td>
<td>5.0</td>
<td>Nil</td>
<td>Nil</td>
<td>38</td>
<td>95.0</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Karate</td>
<td>Nil</td>
<td>Nil</td>
<td>1</td>
<td>2.5</td>
<td>Nil</td>
<td>Nil</td>
<td>39</td>
<td>97.5</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Handball</td>
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<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
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<td>Nil</td>
<td>40</td>
<td>100</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Rugby</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>2</td>
<td>5.0</td>
<td>38</td>
<td>95.0</td>
<td>40</td>
<td>100</td>
</tr>
<tr>
<td>Swimming</td>
<td>Nil</td>
<td>Nil</td>
<td>1</td>
<td>2.5</td>
<td>2</td>
<td>5.0</td>
<td>37</td>
<td>92.5</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>
As asked to indicate what the major constraint to the acquisition of physical education and sports apparatus was, 38 (95.0 per cent) and 2 (5.0 per cent) cited financial constraints and non-availability of equipment respectively. The provision of adequate and appropriate apparatus for physical education and sports learning is heavily dependent on the financial provision. Yet proper and adequate equipment is vital in the process of teaching and learning. The absence of such apparatus as balls, hockey sticks, bats, hoops, and batons makes it difficult for the learners to grasp the real experience which is vital for skill learning.

The equipment provided (Table 4.8) reveals the nature of sports that receive emphasis in the schools. The sports that are given consideration in equipment provision include soccer, netball, hockey, volleyball and athletics. Other sports namely rugby, lawn tennis, swimming, table tennis, handball, karate, boxing and wrestling are scantly provided for. The findings reveal a heavy reliance on only few sports.
The provision of equipment is tied to the availability of facilities. On the level of provision of indoor facilities, 31 (77.5 per cent); 5 (12.5 per cent) and 4 (10.0 per cent) indicated inadequate, satisfactory and adequate respectively. Few schools have provision for the indoor facilities. The findings show that indoor facilities are not absolutely necessary given the tropical nature of the climate.

Fifteen (37.5 per cent), 18 (45.0 per cent) and 7 (17.5 per cent) schools showed inadequate, satisfactory and adequate levels of provision for physical education outdoor facilities. On maintenance of the outdoor facilities, 11 (27.5 per cent), 22 (55.0 per cent) and 7 (17.5 per cent) indicated inadequate, satisfactory and adequate respectively. Physical education being performance oriented in Kenya much of the teaching and learning takes place in the outdoor fields. The provision of the outdoor fields and the maintenance is shown to be relatively satisfactory.
The provision for alternative physical education facilities in case of adverse weather was shown by 34 (85.0 per cent), 1 (2.5 per cent) and 5 (12.5 per cent) to be inadequate, satisfactory and adequate respectively. The absence of alternative physical education facilities in case of adverse weather leaves the subject at the mercy of the weather.

On the number of sports offered, 16 (40.0 per cent), 19 (47.7 per cent) and 5 (12.5 per cent) indicated the number was inadequate, satisfactory and adequate respectively. Very few schools offered more than four sports. Schools mostly provided facilities for soccer, netball, volleyball and athletics.

Table 4.9 shows the provision of facilities with regard to the level of adequacy of the facilities for the sports that are recommended in the syllabus.
### TABLE 4.9: PROVISION OF FACILITIES FOR SPECIFIC SPORTS

<table>
<thead>
<tr>
<th></th>
<th>INADEQUATE</th>
<th>SATISFACTORY</th>
<th>ADEQUATE</th>
<th>NO RESPONSE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FRE.</td>
<td>%</td>
<td>FRE.</td>
<td>%</td>
<td>FREQ</td>
</tr>
<tr>
<td>Soccer</td>
<td>8</td>
<td>20.0</td>
<td>12</td>
<td>30.0</td>
<td>14</td>
</tr>
<tr>
<td>Netball</td>
<td>4</td>
<td>10.0</td>
<td>23</td>
<td>57.5</td>
<td>8</td>
</tr>
<tr>
<td>Volleyball</td>
<td>5</td>
<td>12.5</td>
<td>20</td>
<td>50.0</td>
<td>15</td>
</tr>
<tr>
<td>Athletics</td>
<td>5</td>
<td>12.5</td>
<td>13</td>
<td>32.5</td>
<td>7</td>
</tr>
<tr>
<td>Hockey</td>
<td>3</td>
<td>7.5</td>
<td>4</td>
<td>10.0</td>
<td>7</td>
</tr>
<tr>
<td>Lawn Tennis</td>
<td>1</td>
<td>2.5</td>
<td>1</td>
<td>2.5</td>
<td>2</td>
</tr>
<tr>
<td>Dance</td>
<td>2</td>
<td>5.0</td>
<td>1</td>
<td>2.5</td>
<td>Ni1</td>
</tr>
<tr>
<td>Basketball</td>
<td>1</td>
<td>2.5</td>
<td>3</td>
<td>7.5</td>
<td>2</td>
</tr>
<tr>
<td>Swimming</td>
<td>1</td>
<td>2.5</td>
<td>Ni1</td>
<td>Ni1</td>
<td>2</td>
</tr>
<tr>
<td>Rugby</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
<td>2.5</td>
</tr>
<tr>
<td>Tae-kwondo</td>
<td>1</td>
<td>2.5</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
</tr>
<tr>
<td>Rounders</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
</tr>
<tr>
<td>Judo</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
</tr>
<tr>
<td>Karate</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
</tr>
<tr>
<td>Handball</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
</tr>
<tr>
<td>Boxing</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
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<td>Wrestling</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
</tr>
<tr>
<td>Martial arts</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
<td>Ni1</td>
</tr>
</tbody>
</table>
The raw data in Table 4.9 shows that schools had facilities for soccer, volleyball, netball, and athletics. These four sports dominate the Kenyan scene country-wide. The findings in Table 4.11 show that soccer is provided for facility wise in 33 (82.5 per cent) schools; volleyball in all the 40 (100 per cent) schools; netball in 34 (85.0 per cent) schools; Athletics 27 (67.5 per cent) and Hockey in 14 (35.0 per cent) schools. Basketball follows at a distance with only 7 (17.5 per cent) offering it. The above named sports are the ones that appear to have taken a hold in the various schools.

Schools that have problems with facilities may choose to utilize any such facilities found in the neighbourhood. Asked whether the schools used facilities out of the school compound, 12 (30.0 per cent) replied positively while 28 (70.0 per cent) replied negatively. The majority of the schools (28) utilized facilities within the school compound.
The games affected with the use of off the compound facilities include Athletics, soccer, swimming, table tennis, badminton, hockey and basketball. The school that used such off the compound facilities numbered five (5) for Athletics; four (4) for soccer; two (2) for swimming and one (1) each for table tennis, badminton, hockey and basketball. The off-compound facilities were found to be inadequate for the needs of the various schools. For Athletics, four (4) stated that the facility was inadequate and only one (1) stated that it was adequate. For soccer, three (3) stated that off-compound facilities were satisfactory and one (1) stated the facility was inadequate. The general dissatisfaction with the general adequacy of the external facilities calls for the need for the schools to construct facilities of their own. Apart from being used more effectively if the facility is school owned, the general inconveniences that arise when
using off-compound facilities are also eliminated.

Physical education is a subject that is entirely practical oriented in secondary schools in Kenya. The movement involved while executing various skills demands an attire that allows for free movement. Hence there is a need for pupils to change their normal school uniform into appropriate physical education attire. In 32 (80.0 per cent) schools students changed into physical education attire, while 8 (20.0 per cent) did not. 21 (52.5 per cent), 13 (32.5 per cent) and 6 (15.0 per cent) stated that the changing facilities were inadequate, satisfactory and adequate respectively.

Though the majority of students changed into physical education attire, it appears that they have problems with changing facilities. The absence of changing facilities may have a direct effect on the time allocated to physical education. Without appropriate changing facilities, students take longer to put on the appropriate attire. For those who
fail to change, their free movement is hampered by their normal school attire.

The constant high increase in the enrollment of pupils in school calls for a need to expand the facilities to cater effectively for the learning needs of the pupils. When asked whether the schools had built any facilities in the past four years 21 (52.5 per cent) replied in the positive, while 19 (47.5 per cent) replied in the negative. However, those that built the new facilities could not be said to have done it in response to the increased enrollment. The new facilities could have been built in schools that were only recently established. It was established that out of the 40 schools in the study, 18 schools were less than nine years old.

Out of the total physical facilities for P.E, only Table tennis and Badminton were cited as part of the indoor facilities, while the outdoor facilities built included: three basketball courts, three badminton courts; 13 volleyball pitches; 12 netball courts; 10 soccer pitches; three Athletics’ tracks; four hockey pitches; one rugby
field and one lawn tennis court.

The provision for outdoor facilities reflected the sports that receive heavy emphasis. In Kenya the physical education and sports programmes are heavily centred on outdoor activities. The emphasis on outdoor physical activities has been due to the nature of the climate or prevailing weather. Most of the year round, the weather is generally hot or warm, thus allowing for outdoor physical activity. Indoor activities are therefore not given priority. In addition construction of an indoor facility and its furnishings is bound to be quite expensive, yet Kenyan schools complain of financial constraints.

Asked whether the schools intended to build new facilities, 26 (65.0 per cent) responded in the affirmative while 14 (35.0 per cent) replied in the negative. The 14 (35.0 per cent) schools did not give new facilities a priority. The facilities that the schools consistently mentioned they would construct if finances were made available
are shown in Table 4.10.

### Table 4.10: Facilities to Be Built If Finances Were Available

<table>
<thead>
<tr>
<th>Facility</th>
<th>Frequency</th>
<th>Percent of Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketball</td>
<td>29</td>
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</tr>
<tr>
<td>Hockey</td>
<td>25</td>
<td>16.8</td>
</tr>
<tr>
<td>Table Tennis</td>
<td>22</td>
<td>14.8</td>
</tr>
<tr>
<td>Lawn Tennis</td>
<td>19</td>
<td>12.8</td>
</tr>
<tr>
<td>Athletics’ track</td>
<td>9</td>
<td>6.0</td>
</tr>
<tr>
<td>Badminton</td>
<td>9</td>
<td>6.0</td>
</tr>
<tr>
<td>Soccer</td>
<td>8</td>
<td>5.4</td>
</tr>
<tr>
<td>Volleyball</td>
<td>7</td>
<td>5.4</td>
</tr>
<tr>
<td>Swimming</td>
<td>7</td>
<td>4.7</td>
</tr>
<tr>
<td>Netball</td>
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<td>3.4</td>
</tr>
<tr>
<td>Gymnasium</td>
<td>5</td>
<td>3.4</td>
</tr>
<tr>
<td>Rugby</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>Handball</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>Squash</td>
<td>1</td>
<td>0.7</td>
</tr>
</tbody>
</table>

**TOTAL** 149 100

Table 4.10 shows that there is a need to construct more basketball courts (19.5%) hockey (16.8 per cent); table
tennis (14.8 per cent) and lawn tennis (12.8 per cent) out of the total percentage of the facilities that the schools would construct if finances were made available. The four sports lag behind soccer, volleyball, netball and athletics in terms of facility and equipment provision in schools.

Failure to construct adequate facilities both in variety and quality may be attributed to financial constraints. The respondents stated that the greatest constraints to the provision of new facilities included the financial problem and the shortage of land. The financial problem was cited by 33 (82.5 per cent) schools while 7 (17.5 per cent) mentioned the land problem. Some school, even if they had the finance, cannot construct any facilities because the land on which they are located is all build up.

On the annual financial allocation to physical education activities, including sports, the respondents felt
it was generally inadequate. 27 (67.5 per cent) schools indicated it was inadequate, 11 (27.5 per cent) indicated it was satisfactory and only 2 (5.0 per cent) indicated it was adequate. Asked to estimate the percentage of the total school expenditure that went to physical education activities, 25 (62.5 per cent) indicated it was less than 4 (four) percent; 14 (35.0 per cent) indicated it ranged between five (5) to nine (9) per cent and only 1 (one) indicated it was over ten (10) per cent.

The availability of facilities in schools influences the kind of sports offered in the school. A variety of facilities create the necessary atmosphere for learners to be exposed to a variety of sports. However, the construction of such facilities demands financial commitment. Yet the schools allocate inadequate finance to physical education and sports activities.

4.2.0 **STATISTICAL DATA ANALYSIS OF FINDINGS**

4.2.1 **INTRODUCTION**

The purpose of this section is to present the findings from the schools sample data in relation to the hypotheses
formulated for the study. The statistical technique used to test the hypotheses was the Chi-square test of significance. Where the null hypothesis was rejected, a further test, the contingency coefficient, was computed to confirm the finding.

The presentation below involved the stating of the null hypothesis first, followed by presentation of the findings from the analysis and lastly, the interpretation arising from the findings.

4.2.2 HYPOTHESES AND THE FINDINGS

These hypotheses were tested by the Chi square test of significance. The level of significance at which the stated hypotheses were rejected or not rejected was $P \leq 0.05$. Where a rejection of a hypothesis was done, a contingency coefficient was done to confirm the finding.
H01: There is no relationship between the variety (types) of facilities provided and the:
(a) location of the school
(b) sponsorship of the school
(c) gender in the school
(d) nature of the school.

The findings are shown in Table 4.11 below:

<table>
<thead>
<tr>
<th>HYPOTHESES</th>
<th>D.F.</th>
<th>C.V.</th>
<th>(\chi^2)</th>
<th>Comment</th>
<th>Cmax</th>
<th>C</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>H01a</td>
<td>2</td>
<td>5.99</td>
<td>9.684</td>
<td>Rejected</td>
<td>0.707</td>
<td>0.44</td>
<td>Strong</td>
</tr>
<tr>
<td>H01b</td>
<td>2</td>
<td>5.99</td>
<td>0.147</td>
<td>Not Rejected</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H01c</td>
<td>4</td>
<td>9.49</td>
<td>3.192</td>
<td>Not Rejected</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H01d</td>
<td>4</td>
<td>9.49</td>
<td>2.035</td>
<td>Not Rejected</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: D.F. = degrees of freedom

C.V. = critical value

\(\chi^2\) = Chi square values

C\(_{max}\) = maximum value of contingency coefficient

C = contingency coefficient values.
The findings in Table 4.1 reveal that provision of different types of variety of facilities in schools had a significant relationship with the schools' location. The location of the school, either in the municipal or rural, had a bearing on the variety of facilities in the schools. However, a relationship between the variety of facilities provided and the variables of school sponsorship, gender, and nature was not established.

H02: There is no relationship between the provision of indoor facilities and the:
(a) location of the school
(b) sponsorship
(c) gender in the school
(d) nature of the school.

The findings are shown in Table 4.12 below:
Table 4.12 reveals that no relationship was established between the provision of indoor facilities and each of the factors of school location, sponsorship, gender and nature.

**H03:** There is no relationship between the provision of outdoor facilities and the schools:

(a) location

(b) sponsorship

(c) gender

(d) nature.

Table 4.13 below shows the findings of the Chi square test.
Table 4.13 reveals that no significant relationship was established between the provision of outdoor facilities and each of the factors of the schools' location, sponsorship, gender and nature.

**H04:** There is no relationship between the provision of a variety of equipment and the schools:

(a) location
(b) sponsorship
(c) gender
(d) nature.

Table 4.14 reveals the findings of the Chi square analysis and for H04a, the contingency coefficient.
Table 4.14 reveals that there was a significant relationship between the provision of different types of equipment and the location of the school. However, the availability of the variety of equipment did not have a relationship with the factors of schools sponsorship, gender and nature.

H05: There is no relationship between the availability of equipment and the schools:

(a) location
(b) sponsorship
(c) gender
(d) nature.
Table 4.15 reveals the findings of the Chi square analysis and for H05a, the contingency coefficient.

<table>
<thead>
<tr>
<th>HYPOTHESES</th>
<th>D.F.</th>
<th>C.V.</th>
<th>(X^2)</th>
<th>COMMENT</th>
<th>(C_{\text{Max}})</th>
<th>(C)</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>H05a</td>
<td>2</td>
<td>5.99</td>
<td>6.186</td>
<td>Rejected</td>
<td>0.707</td>
<td>0.366</td>
<td>moderately strong</td>
</tr>
<tr>
<td>H05b</td>
<td>2</td>
<td>5.99</td>
<td>1.108</td>
<td>Not rejected</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H05c</td>
<td>4</td>
<td>9.49</td>
<td>1.779</td>
<td>Not rejected</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H05d</td>
<td>4</td>
<td>9.49</td>
<td>2.03</td>
<td>Not rejected</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.15 reveals that there was a moderately significant relationship between provision of equipment and the location of the school. However, a relationship between the equipment provision and each of the factors of school sponsorship, gender and nature, was not established.

H06: There is no relationship between the number of years the school has been in existence and the:
(a) provision of outdoor facilities
(b) availability of equipment
(c) provision of pupils' P.E. reference books
(d) provision of teachers' reference books.

Table 4.16 shows the findings of the Chi square analysis and for H06d the contingency coefficient.

<table>
<thead>
<tr>
<th>HYPOTHESES</th>
<th>D.F.</th>
<th>C.V.</th>
<th>X²</th>
<th>Comment</th>
<th>C max</th>
<th>C</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>H06a</td>
<td>4</td>
<td>9.49</td>
<td>9.119</td>
<td>Not rejected</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H06b</td>
<td>4</td>
<td>9.49</td>
<td>12.403</td>
<td>Rejected</td>
<td>0.816</td>
<td>0.487</td>
<td>Strong</td>
</tr>
<tr>
<td>H06c</td>
<td>4</td>
<td>9.49</td>
<td>3.368</td>
<td>Not rejected</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H06d</td>
<td>4</td>
<td>9.49</td>
<td>6.696</td>
<td>Not rejected</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.16 reveals that there was a significant relationship between the age of the school and the availability of equipment for physical education and sports. The relationship between the school age and the provision of outdoor facilities, pupils' reference books and teachers' reference materials was not established.
H07: There is no relationship between the financial allocation to physical education and sports activities and the:
(a) provision of equipment
(b) maintenance of outdoor facilities

Table 4.17 shows the findings of the Chi square analysis and the contingency coefficient.

<table>
<thead>
<tr>
<th>HYPOTHESES</th>
<th>D.F.</th>
<th>C.V.</th>
<th>$X^2$</th>
<th>Comment</th>
<th>$C_{max}$</th>
<th>$C$</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>H07a</td>
<td>4</td>
<td>9.49</td>
<td>11.739</td>
<td>Reject</td>
<td>0.816</td>
<td>0.476</td>
<td>Strong</td>
</tr>
<tr>
<td>H07b</td>
<td>4</td>
<td>9.49</td>
<td>21.801</td>
<td>Reject</td>
<td>0.816</td>
<td>0.594</td>
<td>Very strong</td>
</tr>
</tbody>
</table>

Table 4.17 reveals that there was a significant relationship between the financial allocation to physical education and sports activities and the provision of equipment. The financial allocation was also significantly related to the maintenance of the outdoor facilities in the school.

H08: There is no relationship between the student roll in school and:
(a) provision of outdoor facilities
(b) variety of equipment provided
(c) number of sports facilities provided.

Table 4.18 below shows the findings of the Chi square analysis and the contingency coefficient.

<table>
<thead>
<tr>
<th>HYPOTHESES</th>
<th>D.F.</th>
<th>C.V.</th>
<th>χ²</th>
<th>Comment</th>
<th>C_max</th>
<th>C</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>H08a</td>
<td>4</td>
<td>9.49</td>
<td>11.868</td>
<td>Rejected</td>
<td>0.816</td>
<td>0.478</td>
<td>Strong</td>
</tr>
<tr>
<td>H08b</td>
<td>4</td>
<td>9.49</td>
<td>10.745</td>
<td>Rejected</td>
<td>0.816</td>
<td>0.460</td>
<td>Strong</td>
</tr>
<tr>
<td>H08c</td>
<td>4</td>
<td>9.49</td>
<td>4.032</td>
<td>Not rejected</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.18 reveals that there was a significant relationship between the student roll in a school and the provision of both the outdoor facilities and the variety of equipment. The relationship between the student roll and the number of sports facilities offered in the school was not established.
H09: There is no relationship between the emphasis on physical education and:
(a) provision of outdoor facilities
(b) provision of teachers' reference books
(c) provision of pupils' reference books
(d) percentage of total school expenditure spent on P.E. activities
(e) annual purchase of P.E. equipment
(f) age of the school.

Table 4.19 below shows the findings of the Chi square and the contingency coefficient.

<table>
<thead>
<tr>
<th>HYPOTHESES</th>
<th>D.F.</th>
<th>C.V.</th>
<th>X²</th>
<th>Comment</th>
<th>C max</th>
<th>C</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>H09a</td>
<td>4</td>
<td>9.49</td>
<td>14.030</td>
<td>Rejected</td>
<td>0.816</td>
<td>0.51</td>
<td>Very strong</td>
</tr>
<tr>
<td>H09b</td>
<td>4</td>
<td>9.49</td>
<td>3.588</td>
<td>Not rejected</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H09c</td>
<td>4</td>
<td>9.49</td>
<td>2.841</td>
<td>Not rejected</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H09d</td>
<td>4</td>
<td>9.49</td>
<td>17.327</td>
<td>Rejected</td>
<td>0.816</td>
<td>0.55</td>
<td>Very strong</td>
</tr>
<tr>
<td>H09e</td>
<td>4</td>
<td>9.49</td>
<td>11.289</td>
<td>Rejected</td>
<td>0.816</td>
<td>0.47</td>
<td>Strong</td>
</tr>
<tr>
<td>H09f</td>
<td>4</td>
<td>9.49</td>
<td>8.207</td>
<td>Not rejected</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4.19 reveals that there is a significant relationship between the emphasis on physical education in the school and the provision of the outdoor facilities; the percentage of the total school expenditure spent on physical education and sports activities; and the annual purchase of the physical education equipment. The relationship between the emphasis on physical education, and the provision of the physical education reference books for teachers and for pupils; and the age of the school were not established.

H010: There is no relationship between the percentage of the total school expenditure spent on physical education and sports activities and:

(a) provision of outdoor facilities
(b) annual purchase of equipment
(c) maintenance of outdoor facilities.

Table 4.20 shows the findings of the Chi square analysis and the contingency coefficient.
Table 4.20: FINDINGS OF HO10a, HO10b AND HO10c

<table>
<thead>
<tr>
<th>HYPOTHESES</th>
<th>D.F.</th>
<th>C.V.</th>
<th>$X^2$</th>
<th>Comment</th>
<th>$C_{max}$</th>
<th>C</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>HO10a</td>
<td>4</td>
<td>9.49</td>
<td>13.469</td>
<td>Rejected</td>
<td>0.816</td>
<td>0.502</td>
<td>Very strong</td>
</tr>
<tr>
<td>HO10b</td>
<td>4</td>
<td>9.49</td>
<td>11.529</td>
<td>Rejected</td>
<td>0.816</td>
<td>0.473</td>
<td>Strong</td>
</tr>
<tr>
<td>HO10c</td>
<td>4</td>
<td>9.49</td>
<td>11.087</td>
<td>Rejected</td>
<td>0.816</td>
<td>0.466</td>
<td>Strong</td>
</tr>
</tbody>
</table>

Table 4.20 reveals that there was a significant relationship between the percentage of the total school expenditure allocated to physical education and the provision of the outdoor facilities; the annual purchase of physical education equipment; and the maintenance of the physical education outdoor facilities.

4.3.1 DISCUSSION

The study set out to assess the relationship between the provision and availability of physical education learning resources and each of the following variables: namely school location, school sponsorship, gender, nature of school, school age, enrollment, financial allocation to physical education activities and the level of emphasis on physical education in the schools.

The location of the school was found to have a significant relationship with the provision of the
variety of facilities, variety of equipment and availability of equipment. The location of the school, either in the municipal or in the rural area had a bearing on the provision of equipment and the availability of a variety of equipment and facilities.

The variables of sponsorship of the school, the sex gender and the nature of the school did not reveal any significant relationships with the provision of facilities, both indoor and outdoor; provision of equipment and the reading materials. The public and the private schools did not reveal any significant relationships with the dependent variables of facilities, equipment and reading material provision. The gender in the school could possibly not reveal significant relationships given the very few boys' only schools (2) and only eight (8) girls' only schools. The majority of the schools being co-educational institutions (75 per cent), the facilities provided tended to cater for both boys and girls. That explains the high number of schools that offer
soccer (34) and netball (35), despite either game being currently exclusively for boys and girls respectively. The day, boarding and day-boarding schools did not also reveal any significant relationships with the resource provision.

The school age factor revealed only one significant relationship with the availability of physical education equipment. The relationships shows that old schools have had more time to accumulate the apparatus or equipment that are essential. The equipment is durable. Young schools have had a shorter time to acquire the necessary equipment. Otherwise the young and the old schools showed no significant relationships with the provision of the outdoor facilities and the provision of the reading materials for both teachers and pupils. The lack of the significant relationships with out-door facility provision could be explained by the fact that establishment of new schools usually involves the provision of basic playing facilities like soccer, netball, volleyball
and athletics. Such facilities tend to remain the same in number without attempts being made to increase them (facilities) to tally with the increasing enrollment as a school grows. With regard to reading material, the largely inadequate levels of their (reading material) provision could be explained more by the lack of emphasis on the physical education subject. Consequently the available finance is spent on subjects and items that are deemed to be of greater significance. The absence of reading materials in schools was attributed to the lack of finance, non-availability of the P.E. books to purchase and lack of initiative by the relevant teachers.

The school roll showed a significant relationship with the provision of the outdoor facilities and the variety of equipment. The provision of the outdoor facilities and the variety of the equipment illustrates the fact that schools with a big population happen to be content with what is available. The irony is that the big schools have a limited number of sports facilities provided just like the young schools. The finding shows that the number of
pupils in schools is not used as a yardstick to expand the number of facilities for each sport, number of sports, and the general broadening of the scope of physical education and sport to encompass new sporting activities.

With regard to the financial allocation to physical education activities, significant relationships with provision of equipment and the maintenance of outdoor facilities were found. Both the purchase and maintenance of equipment and facilities respectively require recurrent expenditure. Efforts have to be made to avail the necessary funds for the constant addition and replacement of the worn-out equipment and the proper maintenance of the existing facilities. Schools with a higher allocation of finance to physical education activities apparently replace and purchase equipment more often and maintain the facilities relatively well. In addition schools that had a higher percentage of the total school expenditure allocated to physical education and sports activities had more adequate provision of the outdoor facilities.
Physical education is a subject that is only slowly being accepted in secondary schools in Kenya.
The inclusion of the subject as a compulsory one in the 8:4:4 system of education gives the physical education future a glimpse of hope. The subject has not yet been given the due emphasis in all schools. The level of emphasis on physical education was found to be significantly related to the provision of the outdoor facilities; the money allocated to P.E. and sports activities and the annual purchase of the equipment. However the relationship between the emphasis on P.E. and the provision of P.E. teachers and pupils' reference books and the age of the school were not established.

The findings generally reveal an alarming picture of inadequacy in terms of provision of the learning and teaching resources for physical education in secondary schools. The only resources that show a relatively satisfactory level of availability are the equipment and the outdoor facilities. Unfortunately the facilities, both
outdoor and indoor reveal the narrow scope of emphasis that is placed on the traditional sports' areas of soccer, netball, volleyball and athletics.

The availability of outdoor facilities to cater for the sports of soccer, netball, volleyball and athletics is commendable. However, the availability of such facilities gives a misleading impression as the syllabus clearly gives a much longer list of sports which, if exposed to the learners, could be quite beneficial to the growth and development of the learners. A need to break away from the stronghold of the traditional sports to a more wider scope to encompass upcoming sports like hockey, basketball, lawn tennis and badminton could be commendable. In addition sports like rugby, swimming, dance, handball, judo, karate, boxing, wrestling and rounders could broaden the scope of the current emphasis on only four sports of soccer, netball, volleyball and athletics.

The deficiency in both the scope of emphasis and
the nature of the facilities require a bold step if things are to change for the better. Other countries internationally countered deficiencies in the physical education resource provision with positive results. England, for example enacted an Education Act in 1944, which required that local authorities provide facilities for school Physical Education and Recreation. The Act also established standards for playing fields in proportion to the number of pupils and the type of school (Bennett et al, 1983). Finland insisted on primary schools' having a playground area for ball games and athletics while in Norway, a school cannot be built without a gymnasium (Bennett et al, 1983). For the physical education learning environment to be made conducive for the learning of the subject, deliberate steps must hence be undertaken to widen the so far limited range of the outdoor facility provision.

The finding that 30 per cent of the sample schools utilized outside of the school compound facilities concurs with the practices of other countries. The use of fields, gymnasium halls and swimming pools in the surrounding community
belonging to sports clubs, government agencies, companies, welfare organizations or local government, clearly reinforces what the schools have. A country like Holland which has schools with limited space, utilizes sports clubs' facilities in the neighbourhood of the schools. In Mexico City commuting to the facilities out of the schools covers a distance as long as 10 miles (Bennett et al., 1983).

Where schools lack facilities arrangements to utilize the neighbouring facilities can help in widening the scope of the physical education learning experience. Bilbrough and Jones, (1973) stated that:

Inadequate facilities within the school need not of necessity, limit the scope or range of activities to be offered. Suitable facilities may often be found within the immediate vicinity of the school - for example, swimming baths, tennis courts, an athletics track, a large sports hall, playing fields, local water areas. (p. 149).

Apart from mere availability, the facilities should also be well maintained if the learning process is to go on smoothly. Schools that maintained their facilities well are those that had a higher financial allocation to physical education activities. The facilities should be kept in a
condition that allows for quality performances. As Bilbrough and Jones (1973) stated

sub-standard facilities are not conducive to sustained interest and enthusiasm and detract from the possibility of pupils improving their performance (p. 149).

The sampled schools however showed a satisfactory level of maintenance of the facilities.

The availability of a sufficient number of playing areas enables the participants to be fully involved in the learning process. The number of individual sports facilities like volleyball, netball, lawn tennis among others provided should be more than one in a school that has a high student population. Availability of facilities in sufficient numbers allows learners to be involved in the learning simultaneously, rather than in turns. The lack of a duplication of facilities to match with the users population in Kenyan schools is reflected in the lack of a significant relationships between student roll in a school and the number of sports facilities provided.
The provision of indoor facilities was lamentably inadequate. The finding concurs with that of Muniu (1986) and Kiganjo (1987) who found that all the Diploma Teachers' Colleges and Primary Teachers' Colleges lacked indoor facilities respectively. As much as one can justify the lack of such indoor facilities on the relatively warm climate which invalidates the need for such facilities, one is also bound to disagree with the justification. It is true that many students miss physical education classes on a day when it rains. Precedents show that physical education in South Africa, Australia and Israel was held back because of the assumption that everything could be done outdoors (Bennett et al, 1983). The schools syllabus for physical education in Kenya includes indoor activities like table tennis, badminton, judo, boxing and wrestling. Availability of an indoor facility can effectively counter the occasional harsh and adverse weather to the benefit of the learners. In addition activities like dance, gymnastics and fitness conditioning can effectively be undertaken if the indoor facility was made available. A spacious hall with basic equipment can act as a multi-purpose physical education facility.
The problem encountered by schools in the provision of the facilities were identified as financial constraints and the shortage of land. Bennett et al (1983) summarised the dilemma as follows:

Older schools within the confines of large cities are on valuable property and acquiring additional land may be prohibitive in cost... On the other hand the smaller schools in rural areas may have insufficient budgets to develop a suitable area for school use even though land is cheap (p. 51)

Facilities without necessary apparatus are useless to learners. Proper and adequate equipment is vital in the process of teaching and learning. Absence of equipment like balls, hockey sticks, nets, goal posts, bats, hoops, and batons make it difficult for learners to grasp the real experience which is vital for skill learning.

The satisfactorily provided for sports, equipment wise include soccer, netball, volleyball and athletics.

There is a limited exposure of the learners to other relevant sports. The wider range of sports in the physical education curriculum requires a wider range of equipment.

At the same time, the improved class methods of instruction
and modern teaching methods which lay emphasis on maximum pupil involvement and participation in learning activities demand greater amount of equipment for the relevant sports (Bilbrough and Jones (1973)).

Annual replacement purchase and maintenance of the equipment is also vital given the expense of the new equipment bought in large quantities. The sampled schools showed satisfaction with the annual purchase, repair and quality of equipment. The sampled schools showed a satisfactory state of affairs in terms of equipment provision for the sports offered. The sports offered however tended to be few hence a lot more is required to be done to widen the range of sports offered and the subsequent relevant equipment. That way the learners experience will be enriched by the rich learning environment.

The reading materials in the schools on physical education were conspicuously inadequate in the majority of the schools. The lack of the reading materials on the physical education subject paints a poor picture of the physical education learning environment.
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter involves a summary of the findings, conclusions and recommendations. The recommendations include those for further research as well as for educational policy.

5.2 SUMMARY OF THE FINDINGS

The findings revealed that the factors of location, financial allocation, school enrollment and the level of emphasis on physical education had some significant relationship with the availability of a wider variety of outdoor facilities, equipment and the maintenance of the outdoor facilities. While the factors of school sponsorship, the gender in the school, and the nature of the school revealed no significant relationship with provision of learning resources.

The assessment based on how long the school had been in existence revealed only one significant relationship with equipment availability, otherwise it had no significant relationship with other resources namely reading materials and facilities. Indoor facilities and the reading materials were significantly inadequate in the majority of the sampled schools that formed the sample of this study.
Thus apart from the relatively satisfactory level of availability of P.E. outdoor facilities and equipment, the indoor facilities and P.E. library resources were inadequate in the Uasin Gishu Secondary Schools.

5.3 CONCLUSIONS

Based on the findings of this study the following conclusions were derived:

1. The location of a school, pupil enrolment, financial allocation and emphasis on physical education had a significant relationship with provision of a variety of physical education facilities and the availability of and variety of equipment.

2. The factors of school sponsorship, gender in the school, and the nature of the school (boarding, day or day-boarding) had no significant relationship with resource provision.
3. The school age had a significant relationship with availability of physical education equipment, but revealed no significant relationship with the provision of large numbers of facilities and provision of reading materials for both teachers and pupils.

4. The indoor facilities were found to be inadequate in the majority of the schools.

5. Provision and availability of the learning resources was greatly hampered by the financial constraints.

6. The availability of physical education outdoor facilities and equipment was relatively satisfactory, especially with regard to soccer, netball, volleyball and athletics. The findings revealed a high emphasis on sports of soccer, netball, volleyball, and athletics, with a moderate emphasis on basketball and hockey. However, dance, handball, judo, rounders, karate, boxing, cricket and wrestling
were hardly provided for resource-wise.

7. The majority of students changed into physical education attire before the lesson time, despite the inadequate provision of changing facilities.

8. It was found that schools utilized off the school compound facilities in cases where such facilities were not owned by the school.

5.4 RECOMMENDATIONS

From the findings of this study, recommendations were made that have implications for education policy and practice, and for further research.

5.4.1 POLICY AND PRACTICE

From the findings of this study, it is recommended that:

1. The Ministry of Education, through the school inspectors, should take steps to strengthen the teaching of the subject by, among others,
establishing P.E. departments.

2. The Ministry of Education should ensure that each new school has a certain physical education and sports facilities before opening its doors to students.

3. Schools' Boards of Governors and Parents' Teachers' Associations (P.T.A.) should take the initiative to raise money for physical education and sports facilities through fund raising or sponsorship.

4. The Kenya Institute of Education (K.I.E.) should liaise with the Ministry of Education, to avail to the schools some of the reading materials they (K.I.E.) have developed at an affordable price.

5.4.2 FURTHER RESEARCH

Further research is recommended to establish:
1. If the existing basic learning resource base is effectively utilized for teaching and learning physical education activities.

2. The level of emphasis on physical education and resource availability on a national scale.

3. Those who teach physical education in schools and their qualification to handle physical education.

4. The attitude of the pupils, teachers, the school administrators and that of the physical education teachers themselves towards physical education.
REFERENCES


APPENDIX A

LETTER OF TRANSMITTAL OF THE QUESTIONNAIRE

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

Dear Sir/Madam,

I am a postgraduate student at Kenyatta University. I am conducting a study on learning resources for Physical Education classes at secondary school level in Uasin Gishu District. The study is a partial requirement for the degree of Master of Education in Physical Education at Kenyatta University.

The purpose of this letter is to seek your assistance in completing the attached Questionnaire. The findings would greatly assist the Physical educators and other policy making bodies such as Kenya Institute of Education in their attempt to promote the subject in the country.

The Questionnaire is in two parts. One is to be answered by either the Head teacher or in his absence the Deputy Head teacher. The other part is to be answered by the Head of Physical Education Department or the Games Master. Answering all the Questions would be greatly appreciated. The answers will be treated with strict confidence.

Thanks in advance for your cooperation.

Yours faithfully,

NJORORAI W.W. SIMIYU.
APPENDIX B

HEAD OF P.E. DEPARTMENTS' SECTION OF THE QUESTIONNAIRE

SECTION I: GENERAL INFORMATION

Please tick (✓) where it is appropriate.

(Do not write in this margin)

1. Your position (a) Head of Department 
   (b) Games Master (c) Both
   
2. Location of the school (a) Municipal (b) Rural
   
3. Is the school (a) Mixed (b) Boys' only 
   (c) Girls' only
   
4. Is the school (a) Private school (b) Public school
   
5. Is the school (a) Day (b) Boarding (c) Both
   
6. Is P.E. taught in the school (a) Yes (b) No

SECTION II: ADEQUACY OF LEARNING RESOURCES

You are asked to judge the degree of adequacy of your physical education facilities and learning resources in relation to the P.E. programme by ticking (✓) the appropriate column. Use the following key. If non-existence write inadequate. If the school has enough write adequate, while if the resources are available, but not enough write satisfactory.

Adequate (A-3) Satisfactory (S-2) and Inadequate (I-1)
7. Textbooks available to the P.E. department for teachers' reference.


9. Annual purchase of P.E. textbooks


11. Availability of P.E. related information in the school
12. Equipment (apparatus) available in the school e.g. balls, hockey sticks, bats (Quantity).

13. The annual purchase/replacement/repair of the P.E. equipment

14. The variety of the P.E. equipment

15. The Quality of the equipment.

16. Consultation on equipment to be bought
17. The schools' indoor facilities e.g. Gymnasia, Table Tennis tables, Multi-purpose hall etc.

| 1-1 | S-2 | A-3 | 19 |

18. The schools' outdoor fields e.g. football, hockey, basketball, athletics volleyball, netball, handball, tennis, rugby.

| 1-1 | S-2 | A-3 | 20 |

19. The maintenance of the permanent outdoor playing fields.

| 1-1 | S-2 | A-3 | 21 |


| 1-1 | S-2 | A-3 | 22 |

21. The number of facilities for each sport offered in the school.

| 1-1 | S-2 | A-3 | 23 |
SECTION III: TYPE OF FACILITIES AND LEARNING RESOURCES

23. The following is a list of sports/games contained in the secondary P.E. syllabus. Tick against the activity/sport that is offered in your school.

- Soccer
- Netball
- Hockey
- Volleyball
- Rounders/Soft ball
- Judo
- Tae-Kwo-ndo
- Karate
- Handball
- Rugby
- Lawn Tennis
- Athletics
- Swimming
23. Indicate the Games/Sports ticked in (22) above and indicate the degree of adequacy of the facilities for each.

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24. Indicate the Games/Sports ticked in (22) or those in (23) above and indicate by ticking in the appropriate column the degree of adequacy of the equipment for each.

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25. Indicate by ticking in the appropriate box the state of books on the listed activities/sports.

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26. Do you use off-compound facilities (outside the school) for part of the physical education programme?

Yes  No

27. If 'yes' please indicate the games/activities affected.

a) 

b) 

c) 

d) 

e) 

28. Indicate the degree of adequacy of the facilities in 26 above, per each sport named in 27 above.

a) 

b) 

c) 

29. Physical education programmes involve pupils changing their clothes to a certain extent. Do students in your school change?
1. Yes  2. No

30. Indicate the adequacy of the changing facilities.

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<th>A-3</th>
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31. The emphasis on P.E. in your schools

| 1-1 | S-2 | A-3 | 70 |

Thanks for your cooperation.
APPENDIX C

HEAD TEACHERS' SECTION OF THE QUESTIONNAIRE

SECTION I: GENERAL SCHOOL INFORMATION

1. Current roll:
   a. Less than 299
   b. 300 – 599
   c. 600 – 899
   d. 900 – above

2. How long in years has the school been in existence
   a) Less than 9 years
   b) 10 – 19 years
   c) 20 and above

SECTION II: FACILITIES AND LEARNING RESOURCES

3. Has your school built new P.E. facilities in the past four years?
   1. Yes  2. No

4. If the answer is YES, please specify which facilities:-
5. Is the school planning new facilities for physical education activities
   1. Yes  2. No.  

6. If the answer is YES, please indicate which:
   i) Indoor:  a)  
   b)  
   c)  
   d)  
   e)  

   ii) Outdoor:  a)  
   b)  
   c)  
   d)  
   e)  

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<th>(ii) Outdoor:</th>
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122
7. List in priority order FIVE facilities you would construct for P.E. if finances were made available:

| i) | 19 20 |
| ii) | 21 22 |
| iii) | 23 24 |
| iv) | 25 26 |
| v) | 27 28 |

8. What is your opinion on the annual financial allocation to P.E.

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9. The finance allocated to P.E. form which percentage of the whole school expenditure.

| a) Less than 4% |
| b) 5 - 9% |
| c) Over 10% |

30
31

10. What is the greatest handicap to acquisition of P.E. facilities

| a) Land shortage |
| b) Financial problem |
| c) Other |

31
11. What is the greatest handicap to acquisition of P.E. equipment
   a) Non-availability of equipment
   b) Financial problem
   c) Other

12. What is the greatest handicap to acquisition of P.E. textbooks
   a) Non-availability of P.E. Books
   b) Financial problem
   c) Lack of initiative by P.E. teachers
   d) P.E. not considered
   e) Both a and b above.

Thanks for your cooperation.
APPENDIX D

CHECKLIST FOR PHYSICAL EDUCATION LEARNING RESOURCES

Facilities:- Permanent structures and/or playing areas for example:

- Soccer field
- Gymnasium, with badminton, table tennis, boxing, judo
- Multi-purpose hall for: dance, martial arts, karate
- Basketball court
- Rugy pitch
- Netball court
- Volleyball court
- Hockey pitch
- Track and field (Athletic track)
- Lawn tennis court
- Squash building
- Handball court
- Swimming pool
- Rounders

Equipment:-

- Soccer goal posts and nets
- Volleyball posts and nets
- Table tennis tables
- Gymnastic apparatus
- Basketball posts and nets
- Netball posts and nets
- Handball posts and nets
- Hockey posts and nets
- Balls
- Racquets
hockey sticks
players' kit
athletics' apparatus
bats
whistle
landing mats

Reading material: any reading material for teachers' and pupils' use that is on physical education. For example:


Know the Game Series (on various Games eg. soccer, netball etc)


