

**FACTORS AFFECTING STUDENTS PERFORMANCE IN PHYSICS
EXAMINATIONS IN UTITHI SECONDARY SCHOOL,
EASTERN PROVINCE, KENYA**

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**A REASERCH REPORT SUBMITTED IN PARTIAL FULFILMENT
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UNIVERSITY**



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DECLARATION

I, Mwale Edward Mutuku, do here by declare that “*Factors Affecting Students Performance in Physics Examinations in Utithi Secondary School, Eastern Province, Kenya*” is entirely my own original work, except where acknowledged, and that it has never been submitted before to any other university or institution of higher learning for academic award.

Signed..........

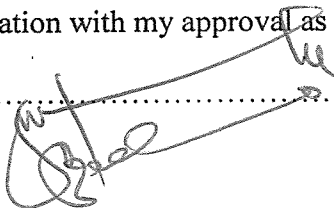
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SUPERVISOR'S CERTIFICATION

This research report has been submitted to the institute of open and distance learning for examination with my approval as the candidate's University Supervisor.

Signed.....



Name: MUNDU MUSTAFA

Date.....



DEDICATION

I wish to dedicate this research dissertation to my lovely wife, Eunice Mueni, children Jeremy Muuo and Brian Mumo without whose support and encouragement this research report would not have been possible.

ACKNOWLEDGEMENT

I would like to express my gratitude to my reviewers, my immediate supervisor, Mr. Mundu, my friend Raphael Musyoki, the management of Utithi secondary school, teachers and students who provided critical feedback and served as invaluable sources in the preparation of the research.

LIST OF ACRONYMS

CAT	:	Continuous Assessment Test
CVI	:	Control Validity Index
KCPE	:	Kenya Certificate Primary Education
KCSE	:	Kenya Certificate of Secondary Education
KIE	:	Kenya institute of Education
PGDE	:	Post Graduate Diploma in Education
MoHEST:		Ministry of Higher Education, Science & Technology
TSC	:	Teachers Service Commission

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ABSTRACT

This research study investigates the factors affecting performance of physics in Utithi secondary school, Kibwezi district, Eastern province, Kenya.

The researcher at the inception stage got disturbed by declining performance in physics and for this reason he sought to find out the factors affecting the performance of physics and likely solutions.

The investigation was conducted by collecting secondary data from the physics teachers of Utithi secondary school.

The methodology used to collect other relevant data was a questionnaire which was designed and administered to physics teachers in the school. The researcher got records of the last internal results for physics for form fours of 2005, 2006 and 2007. moreover, the other relevant data was from primary sources using a questionnaire.

Data analysis used was mean expressed in percentages. The relevant information got from the questionnaire was also expressed in percentage.

The research findings and recommendations were significant in assessing the validity and reliability of internal physics examinations.

CHAPTER ONE

INTRODUCTION

1.0 *Overview*

In this chapter, the research is mainly concerned with poor performance in physics in secondary schools, the background of the problem, statement of the problem, purpose of the study, general and specific objectives, significance of the study, scope and limitations of the study and assumptions made in the study.

1.1 **Background of the problem**

Due to poor performance in physics in secondary schools, the researcher decided to carry out a comprehensive study to investigate the likely causes of this wanting performance and its possible remedies by using terminal examination results.

In Utithi secondary school students have been performing poorly for last three years.

The internal examinations which are formative examinations have a bearing to the students' performance to the national examinations Kenya Certificate of Secondary Examinations (KCSE) which are taken at the end of the course as summative examinations.

The performance in this subject is guided by the students' entry behavior to form one from primary level where the summative examination is known as Kenya Certificate of Primary Education (KCPE).

The research report is aimed at finding out why the performance of physics is poor.

1.2 **Statement of the problem**

Students' performance in physics in secondary schools has been generally poor and this is even extended to the National examinations at the end of the course administered by Kenya National Examinations Council (KNEC). The researcher intends to investigate the likely causes of this poor performance by considering internal examination results for the last three years.

1.3 Purpose of the study

The general objective for carrying out this research study is to investigate the causes of the poor performance in physics.

1.3.1 Research questions

1. What are the factors which affect students' performance in physics?
2. Does the curriculum affect students' performance in physics?
3. What remedies can be put in place to improve students' performance in physics?

1.4 Specific objectives of the study

1. To investigate the factors which affect students' performance in physics.
2. To identify the remedies that can be put in place to alleviate the performance in physics.
3. To determine whether the curriculum affects students performance in physics

1.5 The scope of the study

The research was conducted in Utithi Secondary School, Kibwezi district, Eastern province, Kenya.

Data for three years was collected; that is 2005, 2006, and 2007

The issues covered in the study were collection of data, circulation of questionnaires, photocopying of results, data analysis, and collection of related literature, discussion, conclusion and recommendations

The factors and variables were students and teachers.

1.6 Significance of the study.

The beneficiaries of this study will be all the stake holders and the benefits they will achieve will be as follows;

Students might benefit by putting efforts in physics and practicing by carrying out experiments and taking all relevant recommendations.

The government of Kenya through the ministry of Higher Education Science and Technology (MoHEST) might benefit from the study by enhancing education development and education policies and planning training and education management for teachers.

The Kenya Institute of Education (KIE), the body entrusted with development and formulation of education syllabuses, might benefit from the study by writing books, designing programs and teaching materials which will help to improve students' performance.

The examining body, the Kenya National Examinations Council might benefit by setting and administering standard national examinations.

The schools might benefit by equipping their libraries with relevant physics textbooks and encouraging the physics teachers to go for further training for them to meet the required national standards.

The teachers would benefit by improving their teaching methods and setting standard internal examinations which meet the national standards.

Parents, guardians and sponsors would appreciate the value of their money if students pass in their physics examinations.

1.7 *Review*

This research study focused attention on the students' performance in examinations in physics

The study emphasized on the need to identify the likely causes of the wanting performance in physics in the school with an aim to making sound recommendations to uplift performance in the subject The chapter focused on the background of the study, statement of the problem, purpose of the study, research questions, and specific objectives of study, scope of the study and significance of the study. Beneficiaries of the study were identified and an outline of the ways they will benefit from it made The next chapter Reviews the related literature of the variables of the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Overview

This section is mainly concerned with the *Review* and a short analysis of the related literature in the area of performance in physics in secondary schools and the performance in the teaching of physics in general. It focuses on other researchers' related work, research findings and conclusions pertaining to subject matter.

2.1 Factors Which Affect Students' Performance in Physics

Physics is a branch of science that deals with matter and its interaction with energy. Learning physics entails collection of data in practical lessons and analyzing the data and finally drawing conclusion from the data analysis. The following are some of the factors might affect students' performance in physics.

2.1.1 Laboratory

Physics being a practical subject requires a well equipped laboratory.

At different districts in Kenya, research has been carried out about the need of laboratories in secondary schools. For example:-

Mwanyungu (1996) concluded that a significantly good performance resulted to schools which had better count apparatus to learners' ratio.

Ndambuki (1996) found that unequipped laboratories were one of the factors that contributed to poor performance of physics.

For students to pass in physics, their physics laboratories ought to be well equipped.

However, both of them failed to mention that most schools have only one laboratory for the three science subjects offered in secondary schools in Kenya. They would have recommended that each

science subject to have its own laboratory to avoid conflict of interest further they would have recommended the need to have a well trained laboratory assistants to assist the learners when they want to carry out practical assignments on their own.

2.1.2 Teachers

For learning process to take place effectively, the teacher factor must be mentioned. If teachers fail to motivate their learners when they are teaching, their lessons might turn out to be very boring.

(Kirui D 1996) cited the teacher factor. This was in terms of low quality organization of learning experience. Teacher exodus at the rate of 10% per annum due to poor remuneration and public criticism of teachers.

Ndambuki S.K (1996) found that poor attitude, unqualified teachers, lack of teachers, overloading of teachers are some of the causes of poor performance.

The two of them failed to mention about the poor working conditions of teachers

2.1.3 Reference materials

This refers to textbooks on the subject matter other materials; fiction and non-fiction.

The reference books include: - Bibliographies, dictionaries, encyclopedias, directories, year books, hand books and manuals, atlases, periodicals, magazines and newspapers.

Ndambuki S.K (1996) cited lack of textbooks and reference materials as a serious cause of poor performance in Physics.

In a school where there are no textbooks, the teaching becomes teacher centered. The administration should increase the student; book ratio to 2:1 such that the students should interact with the books. To add on the knowledge imparted in them by the teachers and solve related exercises from the textbooks.

He however failed to cite that it is important to provide books from different authors for the class to have class texts and support texts.

2.1.4 Students related factors

In his research on the causes of poor performance in physics in secondary schools and tertiary institutions, Kamau (1998) finds that 65% of the secondary students have negative attitude towards physics and would wish not to continue with physics in pursuit for their careers.

Wagura (1998) and Kamau (1998) in their research found out that negative attitude towards physics and mathematics is one of the major causes of poor performance in the subjects. Kamau further found that parents and guardians do not motivate their children.

In the recent past, a good number of students in secondary schools use or traffic brain retarding drugs and substances like bhang, heroine, khati or miraa and many others which besides brain damage cause indiscipline and lack of concentration. The drug effects have further contributed to poor performance in physics.

2.2 Curriculum

In carrying out a post mortem on the poor performance in physics in internal examination, national examination and in higher institutions of learning, one of the factors to shed light on the physics curriculum and environmental factors.

The Kenya institute of education (KIE) was given mandate by the Koech commission (1999) to develop the secondary schools curriculum while KNEC is responsible for examination and certifications. The commission notes that the syllabus was made in haste to implement the relevant recommendations of Mackey report of 1981. An attempt was made to ensure open vertical linkage to facilitate upward mobility of students to highest levels of their ability.

Any curriculum prepared hastily, like the one in question will not be able to achieve the national goals of education of the country, because it lacked the time to undergo all the 10 developmental stages outlined by Shiundu and Omulando (1992) in the development of a curriculum. The quality of such a curriculum is therefore questionable and it may directly or remotely culminate in poor

performance in secondary schools for teachers are in hurry to cover the wide curriculum of secondary physics.

The Koech commission (1999) recommended the establishment of a professional body to develop secondary schools curriculum, develop and administer national examinations, issue of professional certificates and accredit institutions.

2.2.1 Students' evaluation in physics

According to Biehler and Snowman (1997) evaluation is the use of a rule governed system to pass judgments about the value of worth of a set of measures. In education system, there are two types of evaluation .i.e. formative and summative evaluation. Bieler and snowman (1997) define formative evaluation as a type o f assessment that monitors the progress of a student in order to facilitate learning rather than to assign a grade. They defined summative evaluation as testing done for the purpose of assigning a letter or numeral grade to sum up the performance of student.

Frankel and Wallen (2003) define a test as a systematic procedure for measuring a sample of behaviour. At secondary level, such tests are usually in the form of continuous assessment tests (CATs). Sutton C, (1981) defines an assessment as one made to meet its objectives and its needs to be standardized.

Silberman C (1970) defines a standard test as an assessment tool designed by people with specialized knowledge and applied to all students under the same conditions.

For test to be effective, in measuring behaviour, it should be good test. Frankel and Wallen (2003) outlines the characteristics of a good test as; objectivity, reliability, and practicability among others. They define test validity as the extend to which a test measures what it is supposed to measure. They outline the main types of validity as content and validity and predictive validity. They define content validity as the extend to which the test adequately covers the syllabus, while

predictive validity is the extent to which the test provides a satisfactory forecast of the progress and attainment of a learner.

Nwana (1982) outline that for test to be valid, it must be set from all parts of the syllabus and the number of questions set from each section of the syllabus should reflect the relative importance of the section.

According to Shiundu and Omulando, (1992), the KIE is the body which is in charge of developing the curriculum for all public learning institutions except the universities while the KNEC performs the task of conducting national examinations based on the curriculum from KIE.

“The KNEC was established by the government of Kenya in 1980 by an act of parliament (Cap 225 A) as a non-profit making institution to conduct school and post school examinations and award certificates to successful candidates” KNEC report (2002).

KNEC has six core functions but the ones relevant to this study are only two which are to:-develop both school and post school examinations and research in to examinations and curriculum.

This research focused attention on predictive validity and content validity of the internal teacher-made physics tests.

Kamau (2001) concludes that if formative evaluation examinations are not standard, they will negatively affect the results of the summative evaluation examinations as students may relax as a result of attaining high marks in a formative evaluation examination and thus fail to re vise adequately for the summative evaluation for having a false belief of competence.

2.3. Remedies Enforced to Improve Performance in Physics

A lot of educational research is going on in the study of poor students' performance in physics in internal and national examinations in both secondary and tertiary colleges. Some researchers have come up with several suggestions and recommendations on how to combat this academic plaque

or pandemic. However, if their recommendations are not effected all the efforts and resources spent on conducting them will go down the drain and will remain exercises in futility.

Marl (1981) notes that tests are usually used to motivate students to learn, and without them many students will be reluctant to make time for private studies and worst of all some students may not be attentive in class. They say that without tests teaching would just be preaching. They cited a risk in giving too many tests and noted that students work for sake of passing examinations rather than gaining knowledge.

The researcher was of the view that a test oriented school encourages rote-learning as teachers and students tend to adopt only one objective of passing examinations and in the process they lose touch with the main educational goals and objectives.

As a solution to the problem of unqualified teachers, especially in secondary schools the Koech report (1999) recommends the employment of more qualified teachers to teach in secondary schools. They also advise teachers to go for further training by joining parallel degree programmes. This is top ensure that teachers have passed through university education for they are preparing students who might end up in the university. The teachers are further advised to study in their related fields at Masters' level to make them fully equipped to teach effectively and improve the performance of physics back in schools.

Kang'ethe (1992) recommends the urgent need to provide motivation, encouragement and assessment training of science and mathematics teachers. TSC partially addressed by paying ✕ special subject allowances to teachers in sciences and mathematics.

On the issue of poor teaching methodology in physics, Acholla (1982) in his study concluded that common physics terms are very essential in the learning of physics. He therefore recommended that in the course of training teachers on the methodology of teaching physics, special emphasis



should be laid on the common and important physics vocabulary and terms. These two have significant relationship with physics achievement.

The researcher recommends that students make notes and do revision exercises after every physics topic they discuss.

In their contribution to testing methodology, Bell et al (1983) supports the use of short questions, sometimes with multiple choice answers but notes that the main advantage is that the marking is more reliable and efficient and that marking may even be done by computers. It is possible to cover a wide content, however,. The questions may be superficial.

✓ Experts in educational measurements and evaluations have also noted that higher cognitive levels in the Blooms taxonomy like application, analysis, synthesis and evaluation are difficult to set using short questions.

On the issue of drug abuser the government is in the process of putting in place guidance and counseling department s ion schools to deal with students who seem to be hooked to drugs.

2.3 Review

This summarizes the main points of this chapter.

The *Review* of literature in this research has focused attention on the importance of physics, factors influencing performance in physics, students' evaluation and the ways of improving performance in physics. The factors influencing students achievement s in physics and its evaluation both formative and summative have provide insights on some of the possible causes of causes of deviation in the performance in the subject in internal and external examinations.

The next chapter discusses the methodology which was employed in the study.

CHAPTER THREE

METHODOLOGY

3.0 Overview

This chapter outlines the range of approaches used to gather information and data which forms basis for reference, interpretation, and explanations. It talks about research design, sampling procedure, sample population, instruments, data collection procedures, and data analysis.

3.1 Research Design

This was a skewed research study using one set of data to determine the causes of poor performance in physics in Utithi Secondary school.

This design is suitable for this study because the performance in physics has been persistently poor for the last three years.

Information was gathered from students in pursuit to identify the causes of their poor performance. The researcher was involved in the process in that he did the actual teaching of Physics for the period in question.

Methods of accomplishing the research was the case study in which Utithi Secondary school in Kibwezi District, Eastern Province, Kenya was chosen and observations made for a span of three years. Ongoing students' performance was recorded and guarded from reactivity to avoid bias.

3.2 Sampling procedures

An entire population would include over 4,000 secondary schools in Kenya of varied enrollment approximately ranging from 100 to 1500 students per school. Although these are aggregate of finite number the elements of factor such as time, accessibility and political instability during the time of data collection limited the researcher to one school to form baseline of the study.

In the school set up physics is compulsory for Forms 1 and 2 and each of these classes have over 90 students per class every year.

In Forms 3 and 4, physics is optional. The researcher targeted the students who opted for physics in Form 4 and chose the last internal examination and studied such groups and their performance for a period of three years. Each group was preset at 20 students.

3.3 Sample

The research sample for this study were former students of public secondary schools specifically Utithi Secondary school who did their last internal examination in the school and whose examination records in physics for internal examinations for the years 2005, 2006 and 2007 are available. Utithi secondary school is located along the international highway connecting Nairobi-Mombasa towns. It is specifically in Kibwezi district, eastern province Kenya. It is a district level secondary school with an average of 90 students per class in all the 4 classes. A total of 60 former students were considered in the study. The other respondents in the study were 5 teachers posted in the physics department. These respondents filled a questionnaire which requested for the details of the teachers which include academic qualification, sex, teaching experience, age and marital status. The respondents were selected because they are the ones who selected, admitted and taught the students in question. They also kept the students records required for the research. So they were better placed under fundamental for the data of the study.

3.4 Instruments

These were the research tools used to collect the data. A written questionnaire was administered to the teachers of physics department to collect data from primary source which could not have been possible to obtain from secondary sources especially descriptive data and some quantitative data. Some questions in the questionnaire used Likert scale responses. That is, strongly disagree, disagree, neutral, agree and strongly agree. And open-ended responses to avoid the researchers'

guided responses. The questionnaire was piloted in May, 2008 to the target group, that is , physics teachers. And it was first done by first briefing teachers on the purpose for it and questions contained therein.

3.5 Quality control

The questionnaire comprised of 8 items; 2 were declared invalid and 6 valid.

$$\begin{aligned}\text{Control validity index (CVI)} &= \frac{\text{Number of items declared valid (6/8)}}{\text{Total number of items}} \\ &= 0.75\end{aligned}$$

The C.V.I conforms to Amin's (2004) recommendations of $0.7 >$.

3.6 Procedure for data collection.

The research sought a letter of introduction from the faculty of Education, Kampala international University to conduct research in Kenya. This letter was presented to the head of the institution where the research was carried. The researcher was later granted permission to carry out the research.

The research first test- ran the instrument of data collection by administering them to other respondents who were not a target group of the study. These were randomly picked from other departments like the department of languages, humanities, mathematics and so on. The researcher did this to establish whether the required information would be drawn from the respondents, the instrument of data collection was not ambiguous and if acquired data would be significant. The researcher found the instrument suitable. He then visited the department in question and talked to the teachers about the research he intended to carry.

The teachers were advised on the need of independence to avoid collusion or discussion. They were also advised to express their personal feelings in relation to the topic of discussion. The questionnaires were collected by the last week of May, 2008.

The secondary data was collected from the head of physics department. The researcher relied heavily on this data .this was results for the last internal examination in the years 2005, 2006 and 2007. The marks were in percentage form. The grade assigned after the marks were ignored. The researcher also collected primary data from the teachers.

Before the data collection procedure a research proposal was first drafted and all the necessary procedures for it observed. The proposal was taken for approval. After the approval, the report write-up was started. The report was marked and the necessary corrections made accordingly.

The final report was submitted in August, 2008.

3.7 Data Analysis

Data interpretation applied was inferential statistics. Theses are mathematical procedures applied to what is observed to happen from the secondary data.

3.8 Limitations of the study

The research had some limitations. The study was restricted to one secondary school. That is, Utithi secondary school, Kibwezi district, eastern province, Kenya. This was due to limited resources like time and funds. Also this research was carried during the term so the researcher was busy teaching that had an implication to accessing other schools.

Results emerging from the data had direct applicability to the school and any interpolation should be cautiously adjusted before adoption.

3.9 Review

This summarizes the main ideas, points and issues that have been covered in this chapter.

The methodology in this research has focused attention on a general *Overview* of the chapter, the research design that was employed, the sampling procedure used, the sample size, the instruments used in the data collection, procedure and data analysis techniques employed.

The next chapter presents the findings of the study.

CHAPTER FOUR

RESEARCH FINDINGS

4.0 *Overview*

This chapter tried to provide answers for the research questions used.

Summary of responses from the questionnaire

Table 4.0.1 Teacher qualifications

Ordinary Diploma	2
PGDE	3
Bachelors Degree	0
Masters Degree	0

Table 4.0.2 Likert Scale ratings

Strongly disagree	1
Disagree	2
Neutral	3
Agree	4
Strongly agree	5

Table 4.0.3 Responses from respondents

Quantity Measured	Ratings				
	1	2	3	4	5
Assignments given, marked and tests revised on time	0	0	1	3	1
Enough textbooks	2	1	1	1	0
Enough laboratory equipment	3	2	0	0	0
Syllabus coverage	1	1	2	1	0
Learners finish examination in time	1	2	0	2	0
Learners make own notes	2	2	0	1	0
Learners entry behaviour	2	1	1	1	0
Attitude	1	2	1	1	0

4.1 Answers to research questions

These were drawn from the questionnaire given to the teachers in the department. From the table above, it was found that 20% of the teachers in the field took the neutral stand about giving, marking and revising assignments and tests in time. 80% of them marked and revised assignments and tests in time. 60% of them disagreed on the availability of enough textbooks, 100% of them said that there were no enough laboratory equipment. 40% of the teaching force does not cover the syllabus within the stipulated time. Only 20% of them cover the syllabus. 60% say that learners do not have enough time to finish their examinations; only 40% of them finish the examinations in time. 80% of the students have poor study habits. The entry behaviour of the learners admitted is low with 60% of the total enrollment being below average at the time of form 1 admissions. 60% of the teachers interviewed agreed that the learners attitude towards physics was poor. That is, many learners had a negative attitude towards physics.

The factors affecting performance in physics cited above are, shortage of reference materials, shortage of laboratory equipment, poor coverage of the syllabus, poor examination handling techniques to the side of learners, poor study habits, low entry behaviour and finally the learners' attitude among other factors.

Table 4.1.1 Last internal exams for the year 2005.

Serial no.	Marks scored (%)	Points
1.	40	3
2.	56	6
3.	52	5
4.	21	1
5.	36	2
6.	44	3
7.	31	1
8.	28	1
9.	25	1
10.	34	1
11.	40	3
12.	69	8
13.	39	2
14.	38	2
15.	44	3
16.	46	4
17.	29	1
18.	45	4
19.	28	1
20.	19	1

The bar graph below was drawn from the same data.

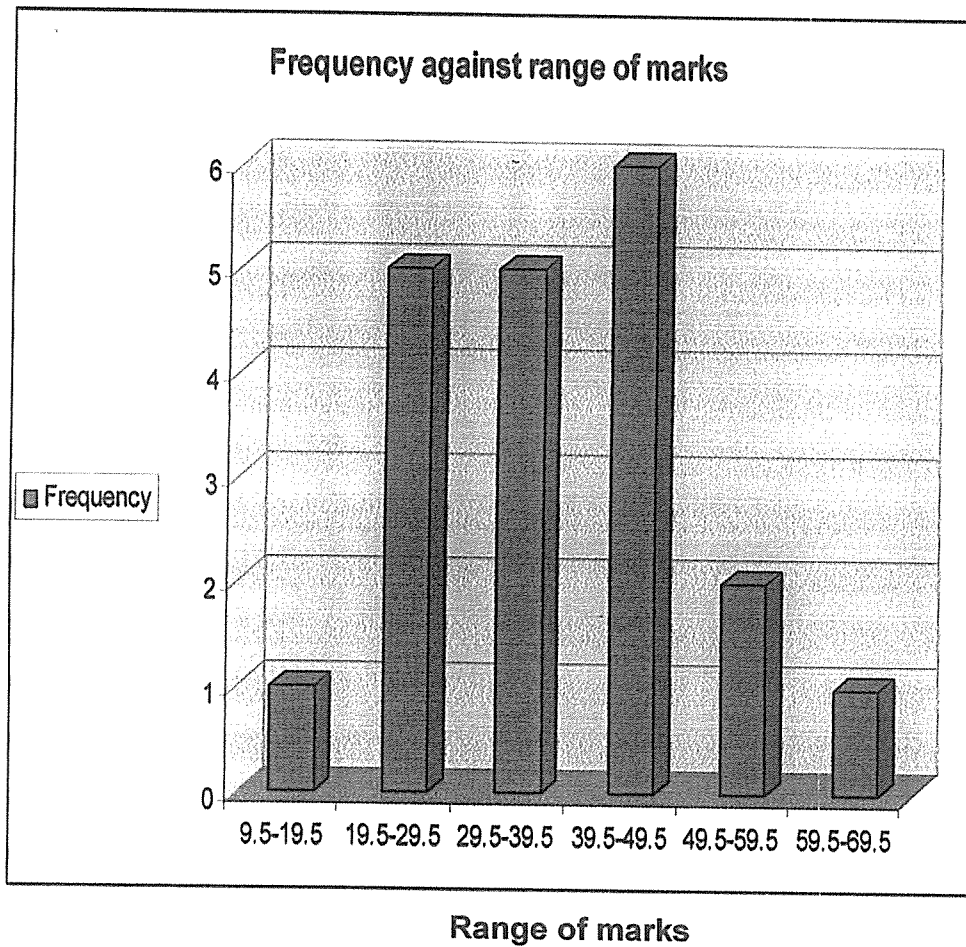


Figure 4.1.1

From above, it was found that 85% of the learners who sat the examination scored less than 50 marks which was the pass mark.

Table 4.1.2 Results for last internal examination for the year 2006.

Serial No	Marks Scored	Points
1.	59	6
2.	46	4
3.	56	6
4.	34	1
5.	36	2
6.	27	1
7.	40	3
8.	41	3
9.	70	9
10	42	3
11	27	1
12	18	1
13	35	2
14	61	7
15	24	1
16	16	1
17	40	3
18	26	1
19	46	4
20	31	1

A pie chart showing the percentage of students according to the points scored.

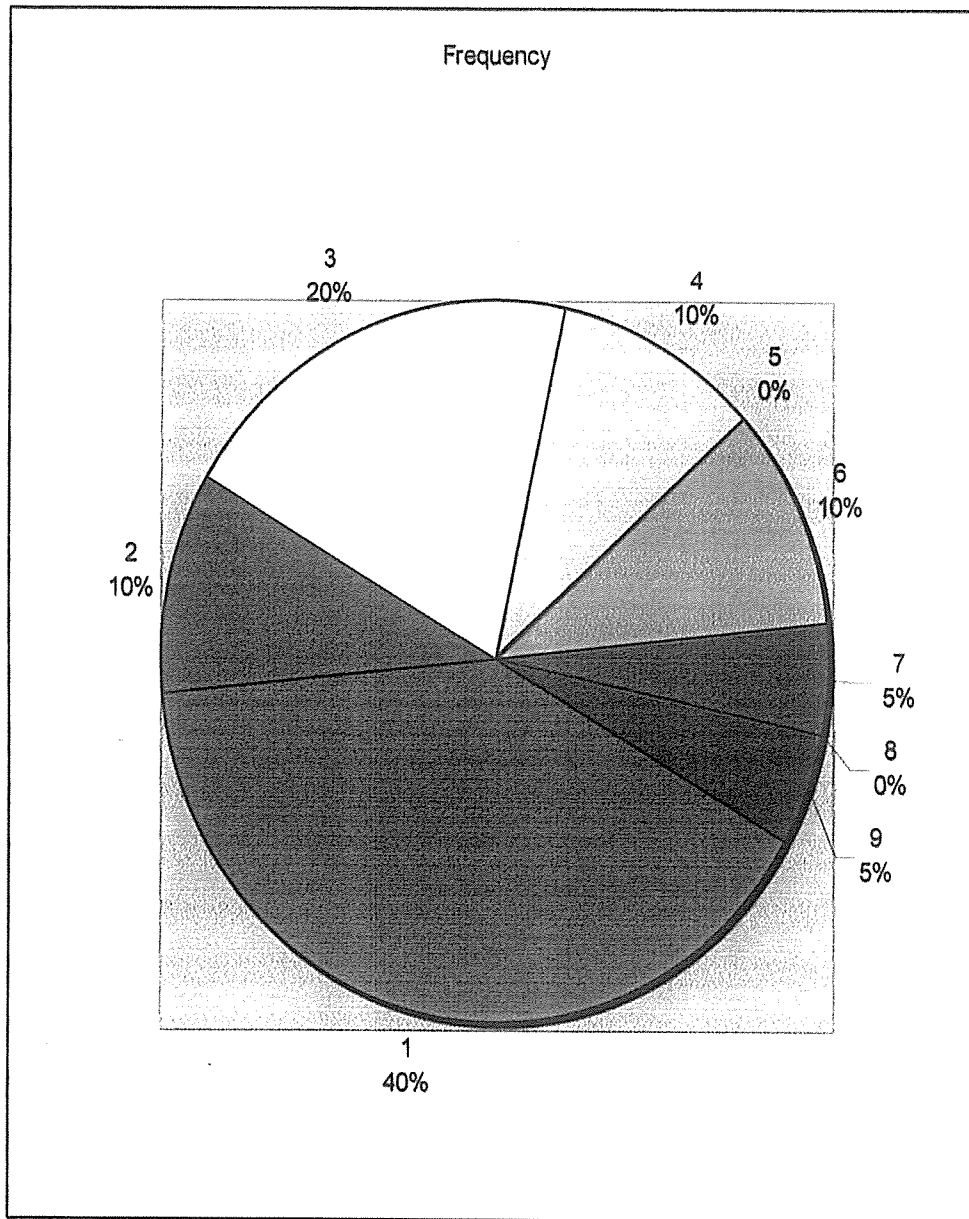


Figure 4.1.2

From the above pie chart, 80% of the learners scored below 5 points which was the pass mark.

Table 4.1.3 results for the year 2007.

Serial No	Marks	Points
1.	69	7
2.	32	1
3.	25	1
4.	56	6
5.	45	4
6.	38	2
7.	25	1
8.	58	6
9.	12	1
10.	26	1
11.	27	1
12.	49	4
13.	60	7
14.	24	1
15.	39	2
16.	48	4
17.	16	1
18.	29	1
19.	42	3
20.	27	1

Line graph showing points scored against frequency

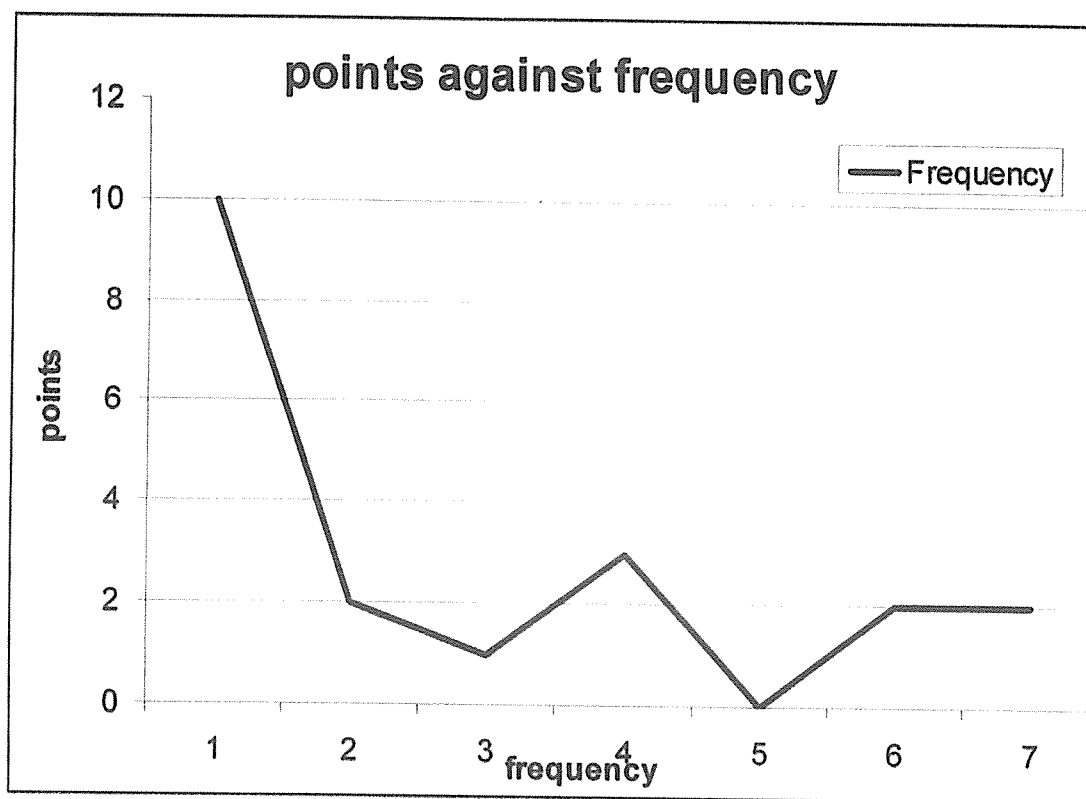


Figure 4.1.3

80% of the learners scored less than 5 points which was the pass mark.

Table 4.1.4 yearly performances

Year	failed students (%)
2005	85
2006	80
2007	80

On average, 81.7% of the learners failed the last internal examinations for the three years.

4.2 Teacher qualification

Reference is made to table 4.1; 100% of the teachers interviewed were found to be qualified to teach secondary school physics since 40% of them had ordinary diploma and 60% had post graduate diploma in Education.

4.3 Curriculum

From the research questionnaire, responses given prove that physics curriculum is too wide and it can not be covered within the stipulated time. 80% of the teachers interviewed said it was hard for them to cover the syllabus.

4.4 Remedies enforced to improve performance in Physics.

A lot of educational research is going on in the study of poor students' performance in physics in internal and national examinations in both secondary and tertiary colleges. Some researchers have come up with several suggestions and recommendations on how to combat this academic plaque or pandemic. However, if their recommendations are not effected all the efforts and resources spent on conducting them will go down the drain and will remain exercises in futility.

Marl (1981) notes that tests are usually used to motivate students to learn, and without them many students will be reluctant to make time for private studies and worst of all some students may not be attentive in class. They say that without tests teaching would just be preaching. They cited a risk in giving too many tests and noted that students work for sake of passing examinations rather than gaining knowledge.

The researcher was of the view that a test oriented school encourages rote-learning as teachers and students tend to adopt only one objective of passing examinations and in the process they lose touch with the main educational goals and objectives.

As a solution to the problem of unqualified teachers, especially in secondary schools the Koech report (1999) recommends the employment of more qualified teachers to teach in secondary schools. They also advise teachers to go for further training by joining parallel degree programmes. This is to ensure that teachers have passed through university education for they are preparing students who might end up in the university. The teachers are further advised to study in their related fields at Masters' level to make them fully equipped to teach effectively and improve the performance of physics back in schools.

Kang'ethe (1992) recommends the urgent need to provide motivation, encouragement and assessment training of science and mathematics teachers. TSC partially addressed by paying special subject allowances to teachers in sciences and mathematics.

On the issue of poor teaching methodology in physics, Acholla (1982) in his study concluded that common physics terms are very essential in the learning of physics. He therefore recommended that in the course of training teachers on the methodology of teaching physics, special emphasis should be laid on the common and important physics vocabulary and terms. These two have significant relationship with physics achievement.

The researcher recommends that students make notes and do revision exercises after every physics topic they discuss.

In their contribution to testing methodology, Bell et al (1983) supports the use of short questions, sometimes with multiple choice answers but notes that the main advantage is that the marking is more reliable and efficient and that marking may even be done by computers. It is possible to cover a wide content, however,. The questions may be superficial.

Experts in educational measurements and evaluations have also noted that higher cognitive levels in the Blooms taxonomy like application, analysis, synthesis and evaluation are difficult to set using short questions.

On the issue of drug abuser the government is in the process of putting in place guidance and counseling department s ion schools to deal with students who seem to be hooked to drugs.

4.4 *Review*

The chapter captured the core factors of the research study which includes data analysis of both descriptive and numerical data collected from both primary and secondary sources.

The chapter tried to answer research questions and mentioned the possible factors affecting performance in physics.

The next chapter discusses the findings draws conclusions and makes recommendations for the study.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.0 Overview.

This chapter covered discussions, conclusions and recommendations. These recommendations were according to how the researcher found them. The researcher also suggested areas that needed to be looked at for further study.

5.1 Discussions

The study aimed at investigating the factors affecting the performance of physics in Utithi secondary school in Kibwezi district, Eastern province, Kenya. the alarming performance made the researcher to find out the factors affecting it. He further cited out measures to be taken to improve the performance.

The researcher found out that among other factors affecting the performance, the following were outstanding; lack of enough textbooks, unequipped libraries, unequipped laboratories, wide physics syllabus which could not be covered within the stipulated time, poor examination handling techniques in the side of the learners, poor study habits and poor entry behaviour among other factors.

One possible explanation for poor performance in physics is the lack of equipped laboratories as asserted by Mwanyungu, (1996) that good performance of physics resulted to schools which had equipped laboratories. The researcher agrees with her findings in that for learners to better their performance in physics an equipped laboratory is a necessity. The same was supported by Ndambuki, (1996).

The research agrees to Kamau (1998) assertion that 65% of the learners have negative attitude towards physics. This research found the percentage was lower because the value came to 60%.

Other possible explanations are related to the curriculum. The research found 60% of the teaching force does not cover the syllabus within the stipulated time

Ndambuki, (1996) is highly underscored by the researcher for he said lack of textbook and reference materials were a serious cause of poor performance in physics. 80% of the teachers interviewed said there were inadequate textbooks in the library. The researcher further found that bad study habits of learners is something which should not be let go unnoticed; like failure of students to make notes as the teacher teaches. Other bad study habits reported by teachers were failure to form discussion groups.

5.2 conclusions

The following are some of the findings arrived at by the researcher:-

Lack of well equipped laboratories and libraries lead to poor performance in physics; Poor coverage of physics syllabus lead to poor performance in physics; Poor examination handling techniques by learners lead to poor performance in physics; Bad study habits of the learners lead to poor performance in physics; Negative attitude of the learners towards physics lead to poor performance in physics; Low learner entry behaviour during admissions lead to poor performance in physics; Lack of qualified teachers in some schools may lead to poor performance in physics.

5.3 Recommendations.

The following is a list of the researcher's recommendations.

Schools should stock laboratories with the necessary equipment; Libraries should be equipped with sufficient different types of reference books besides having enough class texts; The government to emphasize that physics is essential for the development of the country; Schools to offer career guidance to students because it will help them develop a good attitude towards Physics; Syllabus designers to revise the curriculum and design one which can be covered within the stipulated time frame; The government to find ways of motivating which will in turn boost their morale of

teaching; The government to integrate the study of physics with computer training to equip learners with more practical skills and boost the learners attitude towards physics; The process of testing learners should entail test on study skills competencies and formative examinations should be matched to the standard format of the national examinations.

In the course of study, the researcher some challenges that were intellectually engaging. The researcher therefore thinks that another educational finding which has not been systematically studied by him or anyone else that he knew of is the variation differences in the performance of physics across schools and across teachers.

Research may be carried out on other science subjects, that is, Biology, Chemistry and mathematics to find out whether there is any correlation with the findings contained in this research.

5.4 Review

The chapter covered; discussion of the findings, conclusions drawn, recommendations and a few areas that need further research.

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APPENDICES

APPENDIX A: INSTRUMENTS

Questionnaire for physics teachers

I kindly request you to answer the questions below. Your response will be highly appreciated and your information shall be treated with utmost confidentiality.

1. Please fill in the table below

Qualification	Sex	Age	Marital status	Academic qualification	Teaching experience
Ordinary diploma
PGDE
Bachelors Degree
Masters Degree

Tick appropriately in the following questions.

2. The teacher gives assignments often, marks and revises assignments tests in time.

Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree ☐

3. There are enough physics textbooks for physics in the school library.

Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree ☐

4. There is enough equipment in the physics laboratory.

Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree ☐

5. The teacher covers the syllabus within the stipulated time.

Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree ☐

6. Learners finish taking the examinations within the stipulated time.

Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree ☐

7. Learners make their own notes as lessons progress.

Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree ☐

8. The entry behaviour of the learner is good.

Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree ☐

9. Learners enjoy learning physics.

Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree ☐

10. In your own opinion, what are the likely causes of poor performance in physics?

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Office of the Director

24th April 2008

TO WHOM IT MAY CONCERN:

Dear Sir/Madam,

RE: INTRODUCTION LETTER FOR MS/MRS/MR... MWALE EDWARD

REG. # BED 13762/611DF

The above named is our student in the Institute of Open and Distance Learning (IODL), pursuing a Diploma/Bachelors degree in Education.

He/she wishes to carry out a research in your Organization on:

FACTORS AFFECTING STUDENTS' PERFORMANCE IN
PHYSICS EXAMINATIONS IN UTITH SECONDARY
SCHOOL, EASTERN PROVINCE,
KENYA.

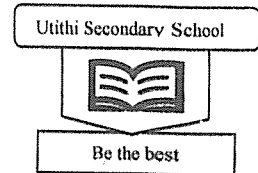
The research is a requirement for the Award of a Diploma/Bachelors degree in Education.

Any assistance accorded to him/her regarding research will be highly appreciated.

Yours Faithfully,

MUHWEZI JOSEPH
HEAD, IN-SERVICE

UTITHI SECONDARY SCHOOL
P. O. Box 274, Kibwezi



Our Ref: USS/TCS/430093/MEM/15

Your Ref:.....

Date: 4th May, 2008


The Director Academic Affairs
Kampala International University
P. O. Box 20000
Kansanga – Kampala
Uganda.

Dear Sir,

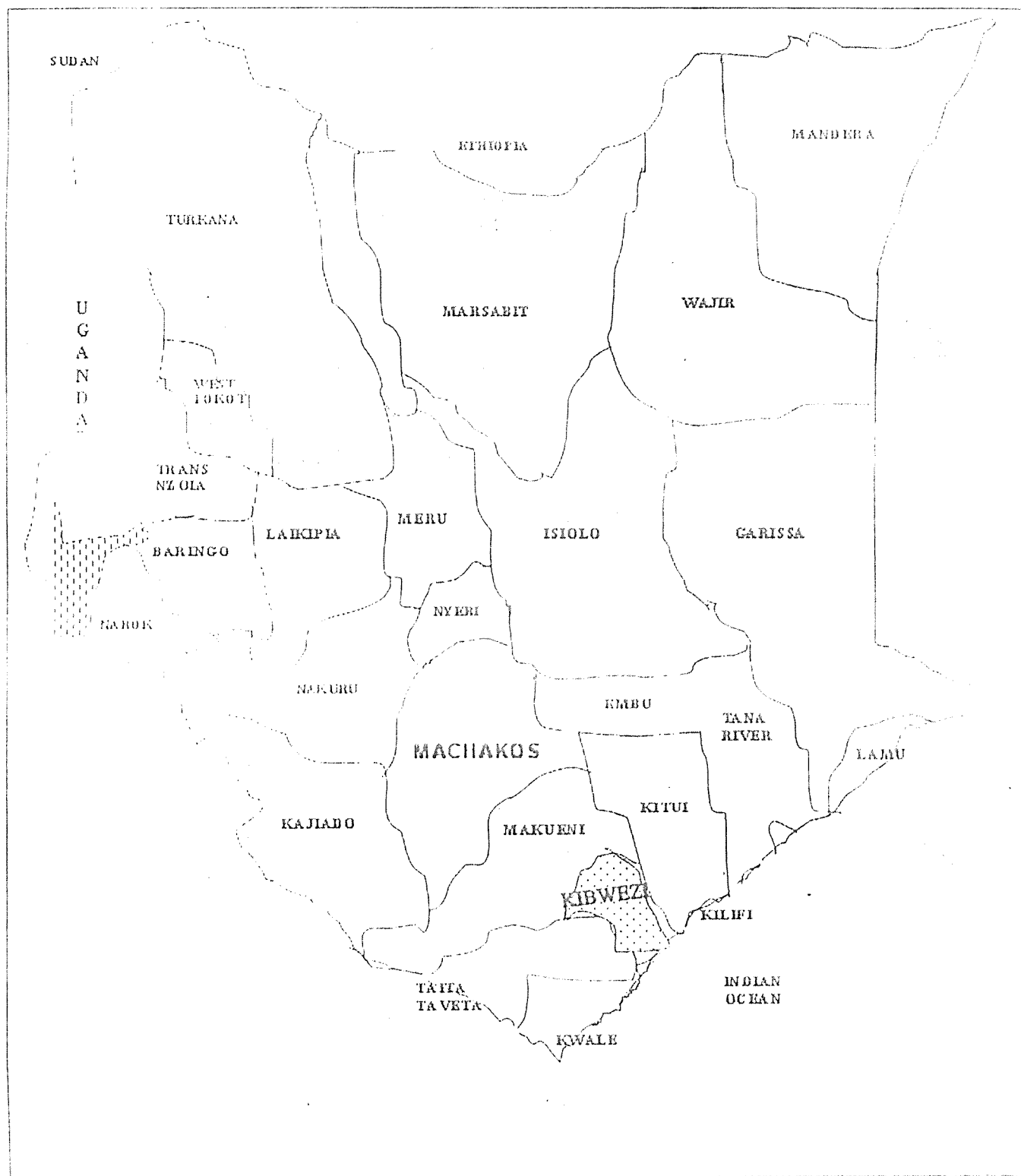
RESEARCH AUTHORITY FOR MWALE EDWARD M.

With reference to your letter dated 24th April 2008 in regard to the above mentioned subject, I am glad to inform you that Mr. Mwale, who is a teacher in this school and a student in your university, is granted full authority to carryout his research work in this school.

Yours Faithfully


.....
MAINGI D. M
Principal

STUDY MAP 1 : A sketch Map of Kenya showing Kibwezi District



Source : Divisional Office

