

**FACTORS AFFECTING ACADEMIC PERFORMANCE
OF STUDENTS IN PHYSICS IN KISII
SOUTH DISTRICT
KENYA**

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DECLARATION

Declaration by Candidate

This research is my original work and it has not been presented to any other institution for any academic award.



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APPROVAL

This research has been submitted for examination with my approval as the University supervisor.

MR. KIMWISE ALONE

DATE

DEDICATION

I would like to dedicate this research to:

The Almighty Lord for giving me life

My parents Mr. and Mrs.Ogola for their financial and constant guidance
during the days of my early education

My wife Judy and lastly my daughter Zena for their encouragement and
moral support during this period of research writing.

To you all, I say thank you.

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ABSTRACT

The purpose of this study was to examine the factors affecting the performance in physics in Kenya Certificate of Secondary Education in Kisii South district. The specific objectives were to examine the endogenous and exogenous factors affecting the performance in physics in Kisii south District. Questionnaires were the main method used for data collection .They was of two types, the students' questionnaires and the teachers' questionnaires. The findings were presented in tabular form and interpreted in line with specific objectives and the research questions. The findings were linked to the literature review of chapter two. From the findings of the research work, recommendations were made so as to boost the students' performance in physics.

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CHAPTER ONE

1.0.0 INTRODUCTION

Over the years, the performance in physics in national examinations had been very low compared to chemistry and biology. In terms of enrolment, Physics was the subject with the least enrolment at the Kenya Certificate of Secondary Examinations (K.C.S.E). In the year 2007, a total of 69424 candidates out of 260665 sat for physics out of which 50136 were boys while 19288 were girls. This research looked into factors that affect/influence performance in physics in the secondary education.

1.1.0 BACKGROUND OF THE STUDY

For Kenya to attain an industrial status by the year 2020 the education sector has to lay more emphasis on sciences and technology oriented subjects in secondary, tertiary and higher institutions of learning. The rate of industrial growth is directly proportional to the level of technological advancement. Careers such as engineering, information technology and science oriented courses are therefore valued in this era. For this matter, secondary schools are expected to produce learners capable of joining the above mentioned careers. The students must therefore pass in science subjects such as physics, biology, chemistry, agriculture and mathematics. Since physics is very fundamental to the above mentioned professional careers, schools should increase their enrolment in physics as well as improving on the performance so as to attain the country's vision of being industrialized. This calls for comprehensive study of the factors that affects the performance in physics in secondary education.

1.2.0 STATEMENT OF THE PROBLEM

The main purpose of this study was to find out the factors that influence the academic performance in physics in Kenya Certificate of Secondary Examination. Although various researchers have carried out research on factors affecting performance in sciences in general, physics has remained one of the poorly performed subjects among sciences in the National Examinations hence the need to carry out further research.

1.3.0 GENERAL OBJECTIVES

The purpose of this study was to examine the factors influencing the students' academic performance in physics in Kenya Certificate of Secondary Education Examinations (K.C.S.E)

1.4.0 SPECIFIC OBJECTIVES

The following specific objectives were established.

- (i) To determine the impact of teacher characteristics and achievement on the performance in physics at K.C.S.E level.
- (ii) To determine the influence of instructional media and teaching methods on the performance in physics at K.C.S.E level.
- (iii) To determine the impact of students' attitude, peer pressure on the performance in physics at K.C.S.E examinations.
- (iv) To determine the impact of teachers supervision on the performance in physics at K.C.S.E level.
- (v) To determine the impact of students socio-economic background on the performance in physics at K.C.S.E level.
- (vi) To determine the impact of birth order and family size of students on the performance in physics at K.C.S.E level.

1.5.0 RESEARCH QUESTIONS

The following research questions acted as a guide to the study

- (i) How does teachers' characteristics and achievement affect the performance in physics?
- (ii) How do instructional media and teaching methods affect the performance in physics?
- (iii) Does students' attitude affect the performance in physics?
- (iv) How does peer pressure affect the performance in physics?
- (v) How does teachers' supervision affect the performance in physics?
- (vi) How does students' socio-economic background affect the performance in physics?
- (vii) How does birth order and family size of students affect the performance in physics?

1.6.0 SCOPE OF THE STUDY

The study was an investigation into factors which contribute to low performance in physics in selected secondary schools in Kisii South District. Due to limited time and finances the study targeted portion of form four students in each school which acted as a representative sample. The observations drawn from the sample were used to make generalized conclusions of the behaviors of the whole students' population.

1.7.0 SIGNIFICANCE OF THE STUDY

The researcher hoped that the findings will;

- (i) Offer solution to low performance hence promoting learners performance in physics.

- (ii) Enable policy makers to find ways and means of promoting high performance in concerned secondary schools.
- (iii) Enable students, parents and community to promote education by addressing factors affecting low performance.
- (iv) Be valuable to fellow researchers who may be interested in the same field of study.

CHAPTER TWO

2.0.0 INTRODUCTION

Physics is a core requirement for admission into science oriented courses for both tertiary and university institutions. With the quest for the country to become industrialized by the year 2020, there is need to improve on the enrolment and performance in the subject which has remained very low over the past years.

According to the Kenya National Examination Council (2007) Examination Newsletter, the enrolment of physics stand at 26.6% while the performance stands at 49.18%

This implies that few students are taking the subject and the performance over the years is still below average hence there is need to carry out research on the factors influencing the academic performance in physics

2.1.0 LITERATURE REVIEW

Performance in academics is a function of a number of factors that come into play in the course of one's education. Researchers have found out that there are several factors affecting the performance in mathematics and sciences in general.

According to Haldyana et.al (1982; 671), the factors affecting the academic performance were categorized as endogenous and exogenous factors.

2.1.1.0 Endogenous Factors

Endogenous factors are those variables which are directly influenced by the school. These variables include: teachers' characteristics and achievement, instructional media and school facilities, teaching methods and attendance to

in-service courses e.g. (Strengthening Mathematics and Sciences Education), teachers' supervision, learner's attitude and peer pressure.

2.1.1.1 Teachers Characteristics And Achievement

The characteristics of a teacher that may affect the performance of the learner include age, sex, attitudes towards teaching and professional experience. In particular the performance of the student corresponds to that of the teacher.

Cuttace (1980) observed that both teaching qualifications and experiences as presented by a number of years of teaching have been found to correlate positively with the students' performance. He however, observed that age, attitude to teaching and learning, gender, socio-economic status and job satisfaction have been of some importance but of no cross- validated consistency.

Kiragu (1986) viewed that success of a teacher in classroom teaching ought to be evidenced, not only by professional records of the teacher but also by the students acquisition of skills as set out in the syllabus.

Mwangi (1983) established that male teachers were found to produce higher scores in mathematics and sciences than their female counterparts. His study showed that sex is a significant factor influencing learning and achievement in secondary mathematics and sciences in Kenya. Teacher's behavior such as teacher enthusiasm, degree of orientation of the teacher to task achievement and the opportunity the student has to learn using media are significant and consistent to academic achievements. Also teacher's clarity

in presentation, use of constructive criticism of the learner and the various techniques (especially probing) were found to be consistent with achievement. Teacher's praise of students and knowledge of the subject on the other hand was not found to associate with academic achievement.

Husen (1978) while reviewing the contribution of a teacher's quality as reported by the Heinemann et.al, (1981) indicates that the relationship between training and academic achievement in developing countries is inconsistent. A half (54%) of the 24 countries reviewed displayed positive relationship while a third (37%) showed null relationship and the rest (9%) gave negative relationship.

Saha (1983) observed that better trained teachers produce better results. Although there may be evidence to suggest that untrained teachers can effectively teach children literacy and numerals, the cumulative findings of these studies strongly support the notion that trained teachers do make a difference for the more advanced grades especially for more difficult subjects.

Fuller (1985) confirmed that in-service training positively correlate with academic achievement. However, Husen (1978) cautioned that increased in-service was accompanied by low achievement levels by students, especially where the training was assumed to be for only teachers of low scoring students. Therefore in-service must focus on all teachers of a particular subject.

Eshiwani (1983) established that students in provincial schools did better in Kenya Certificate of Education than

those in harambee schools, the observation he attributed to teacher qualifications. Teachers in harambee schools were not well qualified and had less teaching experience compared to those in provincial and national schools. The invariable success in particular schools was a clear testimony of their superiority of their teachers. He further noted that poor performance of students in Western Province of Kenya was partially due to high proportion of untrained teachers. He further observed that the rate of teacher transfers had a significant effect in student achievement in school. This was due to the fact that the teacher hardly gets time to settle down and get familiarize to the new station he has been posted to.

2.1.1.2 Instruction Media and School Facilities

Unwin and McAlease (1978) established that greater learning occurs when media was integrated into the traditional learning process. Media generally facilitate learning and are preferred by students as compared with traditional instructions

Kiringithi (1988) on the other hand, observed that media have the ability to enrich learning environment.

Komen (1991) added that visual illustrations arouse interest, stimulate imagination, raise questions, discussions and desire to find out more and solve problems. This encourages action and participation.

Kathuri (1982) while commenting on school resources, including textbook availability were not significantly related

to performance in C.P.E remarked, "This may not necessarily mean that teaching resources or facilities are unnecessary. Good as they may be, their effectiveness below certain level may depend on how they are made use of in combination with other factors. Teaching resources may also not be significant in totality but very crucial in some situation or subject"

Too (1996) studied the factors affecting performance in Mathematics and Sciences in Kenya secondary schools. His findings revealed that acute shortage of Mathematics and Science textbooks hampered good performance.

Studies have shown that textbooks and other learning facilities in a school contribute to academic success. Heinemann and Jamison (1981) found out that school facilities have been shown to be important contributor to academic success in developing countries. Students can study textbooks in class, at home, in small groups or individually. In developing countries, textbooks availability is related to student's performance.

Eshiwani (1983) found out that in both primary and secondary schools the availability of textbooks had a positive relationship with performance. Most of the top schools in the national examinations were better equipped. The schools ensured that there were at least the basic textbooks in each subject and there were enough reference materials in the library. Therefore literature review emphasized the importance of textbooks on student's performance in a given subject.

Kenya National Examination Council, KNEC, (2007) while commenting on the performance of physics observed that physics was poorly performed because many schools lacked most of the important apparatus needed for the subject. The schools were therefore advised to acquire the necessary apparatus in promoting the subject.

2.1.1.3 Teaching Methods and Attendance to In-Service Courses

Kenya National Examination Council, KNEC, (1982) reported that teachers should combine both the discovery method and didactic exposition when teaching. It pointed out that a teacher should use such methods such as lecture and demonstrations in class practicals, discussions and field trips. The choice of method(s) would vary from one teaching situation to another depending on the teaching facilities, teacher competency and the topic at hand.

Kathuri (1982) found out that allowing children to be involved in practical activities, giving assignments, and less “teacher talk” is the best teaching strategies. Closely tied to teaching strategies was teacher’s qualification in in-service courses. In-service courses provide a teacher with an opportunity to update their knowledge in their areas of specialization. It helps equip the practicing teacher with latest innovations in the curriculum, the new demands in his area of approaches and methodology intended to enhance teaching and learning.

2.1.1.4 Teachers Supervision

Various education commissions of the independent Kenya mentioned supervision as an important variable in improving the quality of instructions. According to the Kamunge report (1988) the supervisor's role include working closely with teachers to establish the problems and the needs of students as well as building strong group morale and securing effective teamwork among teachers. Also supervision assist teachers develop greater competence in teaching and serves to evaluate teaching effectiveness.

Maranga (1977) found out that efficient supervision has been curtailed by lack of sufficient supervisors, lack of constant and close contacts between schools, teachers and supervisors due to heavy workloads and lack of appropriate charnels of communication.

2.1.1.5 Learners Attitude

Studies have revealed that attitude of the learner towards a particular subject strongly influence performance of the student in that subject.

Husen (1978) and Mwangi (1983) in their studies have shown that in general, a positive attitude towards physics boosts performance and that students who show positive attitude towards physics spend more time on the subject. Reviewed studies point out that improvement of quality of science teachers and development of a more relevant

curriculum may improve students' attitude towards science. It was then suggested that education colleges should avoid using lecture methods when presenting science to their pre-service and in-service teachers. The reason was because lecture methods may not indicate positive attitude towards science in prospective teachers and yet sciences should be practical subjects. Practicals and projects methods should be adopted because they cultivate interests and hence positive attitudes in the learners.

2.1.1.6 Peer pressure

The membership of and adherence to the norms and values of a particular group make a difference to the school attainment and involvement of students

Mwangi (1983) found out that students whose friends work hard adhere to the peer pressure if they had to fit with their peers. Girls have been found to believe that science was not theirs while boys feel that science was important for their careers. Peer pressure acts as an important reference for childhood and adolescence, socialization and further perpetuates sex role differentiation through gender patterns, subject preference and career intentions.

In Kenya, evidence show that peer group influences engagement in the learning of science.

Jencks (1992) asserted that girls' poor performance in physics was due to discriminative attitude in peer pressure.

2.1.2.0 Exogenous Factors

Exogenous factors are those variables which are not under direct influence by the school process. These factors include: students' socio-economic background, birth order and family size of the student.

2.1.2.1 Students Socio-economic background

Socio-economic background of a learner is more important in explaining academic achievement. Society's cultural, economic and political structures are main determinant of school outcome in academics.

Coleman (1966) said that socio-economic factors strongly relate to academic achievements and when statistically controlled, school characteristics account for only a small fraction of difference in pupil achievement.

Jencks (1992) and Coleman (1966) emphasized the importance of home as an important contributor to variation in academics. Their report says that the higher the socio-economic group, the more the parents attend open days, concerns and parent-teacher associations meetings and the more they talked with heads and class teachers about how their children were doing in school. This suggests that the more educated and well-to-do parents showed greater concern to academic achievement to their children than those parents with low economic status.

A study by Heinemann (1981) in Uganda reported no relationship existing between primary school student socio-

economic background and total score in National Learning Examinations. Similar research in Kenya gave similar results as in Uganda.

Literature review seems not to agree on the real influence of the socio-economic background of a learner on his /her academic performance. This calls for a further investigation in this variable.

2.1.2.2 Birth Order and Family Size Of Students

Studies have revealed that single parent family is likely to be followed by lower academic performance while children with both parents perform better than those with single parents. This is because single parent children lack self-control leading to their disruptive conduct in classroom. Also children whose father was absent for prolonged periods tend to have lower scores on tests of intellectual and academic attainments than those whose fathers are present (Dianton, 1972). First born generally perform better in school tasks than later born (Saha, 1983).

The present study seeks for the causes of poor performance in physics with an aim of establishing which of the factors mentioned above strongly influence physics. This was because from the literature reviewed, the findings were based on other subjects with physics seldom looked into especially in the setting where the present study will be conducted.

CHAPTER THREE

METHODOLOGY

3.0.0 INTRODUCTION

This chapter gave the method and rationale for the sample population selection and the description of research instruments used in collection of data and information from students as well as teachers.

3.1.0 RESEARCH DESIGN

The type of research suitable for this study is descriptive survey. This was because the study was sociological in nature and most of the variables were not manipulative.

3.2.0 RESEARCH POPULATION

The research targeted form four students and their teachers. In the sampled schools a total of 150 students and 10 teachers were earmarked.

3.3.0 SAMPLE SIZE

Strategic sampling was adopted where schools were mixed (boys and girls). This was followed by simple random sampling to ensure gender balance in mixed schools. Simple random sampling was chosen because it gave the chosen population an equal opportunity to be included in the sample. The sampled population was required to fill a questionnaire. Out of the 150 students from the three schools, 10 students per school were used for piloting the study while the rest to were used in the main study

3.4.0 INSTRUMENTS

The Researcher used questionnaire as the main instrument for this study.

3.4.1 QUESTIONNAIRES

The researcher used two questionnaires; the students and the teachers' (Appendices B and C respectively). These questionnaires were enclosed in the appendices. The students' questionnaire was intended to provide information on their interest, attitude, experiences and source of motivation. The teachers' questionnaire was intended to provide information about their qualification, teaching methodology and resources and work experiences. Questionnaires were used because:

- i) They covered a large number of populations within a short time.
- ii) They were easy to administer.
- iii) They were less expensive.

3.5.0 VALIDITY AND RELIABILITY

To ensure the appropriateness and consistency of the instruments used the researcher:

- (i) **Administered a pre-test of the instruments.**

Ten students from each school were chosen and the questionnaires administered to them and their responses scored by the researcher. The same was administered again to the same students after 2-3 weeks. The two responses were used to establish reliability of the

questionnaire. This was achieved by calculating the coefficient validity index (C.V.I) using the following formulae.

$$\text{C.V.I} = \frac{\text{No. of items declared valid}}{\text{Total no. of items in the questionnaire}}$$

According to Amin (2007) a C.V.I of between 0.7 and 1 confirms a valid and reliable instrument.

The pre-test served the following functions:

- (a) Identifying problems likely to be encountered by the respondents.
- (b) Establishing whether the questionnaire gathered the necessary data.
- (c) Enabling the researcher to fine tune the questionnaire.

(ii) **Improved on the return rate of questionnaires.**

The researcher took the following steps to improve on the return rate of questionnaires.

- (a) Informed the heads of the three schools regarding the study. This was done through letters addressed to them (appendix A)
- (b) Carried a pilot study concerning potential respondent to know whom to give the questionnaires.
- (c) Explained the purpose of the study to the respondents with the help of the head teachers.

3.6.0 DATA ANALYSIS

Upon receiving the questionnaires, data coding was done to ease tabulation. From the tabulated data, descriptive statistics (using percentages, frequencies and means) was used to analyse the data. The results were then used to support or reject the hypothesis.

3.7.0 LIMITATIONS

- (a) The study was limited to a small sample of the population due to limited time.
- (b) Tight regular school programs hindered data collection.
- (c) Data collection and conclusions were limited to KCSE results of 2002-2008.
- (d) Limitation of information offered by a school.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0 Introduction

This chapter concentrated much on data analysis, interpretation as well as drawing conclusions from the research questions posed in chapter one. Answers for each question posed were arrived at based on the responses made by each respondent involved in the study. The research study involved 150 students and 10 teachers of physics. Of these, sixty students were from Itierio secondary school, fifty were from Suneka secondary while Gesero secondary had thirty students. Teachers of physics involved were as follows: five were from Itierio, three from Suneka while Gesero had two teachers

4.1 Findings from Examination of Performance records

The mean score in physics for the three schools selected were summarized in the table below.

Table 1: Mean score from 2002-2008

School	2002	2003	2004	2005	2006	2007	2008
Itierio	7.32	7.18	5.60	6.01	6.40	6.32	5.96
Gesero	3.79	2.97	3.52	3.75	3.78	2.65	3.27
Suneka	4.95	4.98	5.09	5.00	5.68	5.44	5.68

Source; KNEC results 2002-2008

From table 1, it can be shown that the performance of the three sampled schools was below average. More so, the performance in Itierio and Gesero were on the downward trend. It was only Suneka with a constant performance. Also important to note was that students

in Itierio- a boarding school had a higher mean than their counterparts, Suneka and Gesero which are day schools.

4.2 Findings on birth order

The birth orders for the 150 students were summarized as shown in table 2 below.

Table 2

Birth Order	No per school			Total	Percentage (%)
	Itierio	Suneka	Gesero		
First	80	10	9	99	66
Last	5	9	16	30	20
Middle	2	11	8	21	14

Source; Primary data 2009

From table 2, it was evident that most of the first born were found in Itierio while in Suneka and Gesero majority of the students were middle and last born.

Interpretation

From table 2, students from Itierio who form the majority of the first born did well compared to those of Suneka and Gesero whose majority were last and middle born. This was in agreement with Saha (1983) who concluded that first born generally perform better in schools than later born.

4.3 Findings on Parental occupation and ability to pay fee

The parental /guardian's occupation was shown in table 3(a) below.

Key: SA-Strongly Agree, A-Agree, DA- Disagree, SD-Strongly Disagree

Table 4 (a)

STATEMENT	SA		A		DA		SD	
	NO	%	NO	%	NO	%	NO	%
a) Guidance and counseling is essential for a better grade in physics.	102	68	42	28	6	4	-	-
b) Physics textbooks and lab equipments are enough in our school.	-	-	-	-	120	80	30	20
c) Frequent teacher transfer is the cause of my poor performance	57	38	84	56	9	6	-	-
d) I do not like physics because teachers are harsh and boring.	90	60	54	36	6	4	-	-
e) I spend less time studying and revising on my own while at home due to home engagements.	147	98	3	2	-	-	-	-
f) I do like physics because my brothers and sisters excelled in it.	45	30	60	40	30	20	12	10
g) There is a lot of work in physics and it should be reduced.	42	28	57	38	33	22	18	12
h) Other students laugh at me /make noise for me when revising.	39	26	105	70	6	4	-	-
i) My parents always tell me that physics is hard.	15	10	132	88	3	2	-	-
j) Other students always tell me that physics is meant for a few	42	28	48	32	30	20	30	20

Source; Primary data 2009

The student's responses on factors affecting the performance in physics were summarized in table 4 (b) below. The factors were ranked in order of the most influencing to the least.

Table 4 (b)

RANK	FACTOR	PERCENTAGE (%)
1	Lack of time to study and revise/household chores and other family engagements	98
2	Parents negative attitude towards physics	88
3	Inadequate learning resources	80
4	Lack of conducive studying environment	70
5	Poor guidance and counseling	68
6	Poor relation between physics teachers and students	60
7	Frequent teacher transfer	56
8	Family history on poor performance	40
9	Overloaded syllabus	38
10	Peer group negative influence	32

Interpretation

It was evident that lack of time for studying and revision/ household chores and other family engagements was a major factor influencing low performance. This was why Gesero, being a day school had the least performance compared to Itierio which is a boarding school. Students from Gesero were found to reach home late and engage themselves in other household chores and family engagements hence unable to carry out with their study and revision of their school work.

The second factor was parent's negative attitude towards physics. It was evident that performances in day schools were very low because of continuous

discouragement from parents who always told their children that physics is hard.

An inadequate learning resource was the third factor. Since physics is taught using laboratory experiments and demonstrations, schools with inadequate apparatus were exposed to few or no practicals. This left the teacher with only lecture method to use hence less hand on activities and low retention rate. The overall result was low performance. Itierio and Suneka which had well equipped library performed well compared to Gesero without an equipped library.

Lack of conducive studying environment was the fourth factor. The three schools under study were along the road hence subjected to disturbances such as noise and music from the road. Also students from Suneka who had a good reading culture had a steady performance compared to Itierio who had cases of noisemaking in class.

Poor guidance and counseling also influenced the performance since students were not conversant with the expectations of the subject as well as career prospects of studying physics. Poor relationship between the teachers and the students was another factor as students viewed their teachers as enemies ending up performing poorly.

Teacher transfer lead to low performance since teachers hardly got time to settle down. As they moved to their new stations they take time to adjust to their new environment as well as learners learning their teachers' teaching methods.

Family history was another factor. Students whose siblings did well in physics were seen working harder so as to break the already set records. Syllabus was found to be overloaded hence students did not have time to clear it in time. This left the learners with no time to revise for examinations.

Lastly, peer group negative influence also affected performance since most students treated physics as a difficult subject. However the subject is even viewed as the boys' subject. This explains why few girls enrolled in the subject.

4.5 Findings on teachers Professional Qualifications and Experience

Table 6 (a) shows academic/teachers professional qualifications

Table 6 (a)

Academic/professional Qualifications	NO. per school			Total no.	Percentage (%)
	Itierio	Suneka	Gesero		
Untrained	-	-	2	3	30
Diploma	1	1	-	2	20
PGDE	1	-	-	3	30
Bed	3	2	-	5	20
Msc	-	-	-	-	-
Med	-	-	-	-	-

Source; Primary data 2009

From the above table it can be shown that Gesero had untrained teachers while Suneka and Itierio had trained teachers.

Table 6 (b) shows teachers experience.

Table 6 (b)

No of years a teacher has been in the field	NO. per school			Total no.	Percentage (%)
	Itierio	Suneka	Gesero		
< 2 years	-	1	2	3	30
Above 2-4 years	-	2	-	2	20
Above 4-6 years	3	-	-	3	30
> 6 years	2	-	-	2	20

Source; Primary data 2009

From the table it was evident that Itierio had the highest number of experienced teachers followed by Suneka while Gesero had the least number of trained teachers.

Interpretation

The results showed that Gesero which had untrained and less experienced teachers had the poorest result while Suneka and Itierio with the most qualified and experienced teachers had better results. This pointed out the fact that qualified and experienced teachers are likely to produce good results. Students' competence in a subject was therefore a reflection of the teachers' competence in the subject.

4.6 Findings on Teaching Methods used by teachers

Table 7 below shows the responses on the teaching methods used by the teachers.

Method	Frequently used		Occasionally		Rarely		Never	
	NO	%	NO	%	NO	%	NO	%
Lecture	8	80	2	20	-	-	-	-
Demonstrations	6	60	3	30	1	10	-	-
Experiments	3	30	5	50	2	20	-	-
Projects	-	-	1	10	8	80	1	10
Field trips	-	-	1	10	6	60	3	30

Source; Primary data 2009

Table 7 showed that most teachers use lecture method compared to other methods.

Interpretation

Use of lecture method as opposed to practical method was the main reason why the selected schools had low performance.

4.7 Findings on Attendance to In-service courses

Table 8 shows the number of teachers who have attended SMASE (Strengthening of Mathematics and Sciences in Schools) in-service courses

Table 8

In-service Courses	NO. per school			Total no.	Percentage (%)
	Itierio	Suneka	Gesero		
Teachers who have attended SMASE courses	4	2	-	6	60
Teachers who have not attended SMASE courses	1	1	2	4	40

Source; Primary data 2009

From table 8, most teachers from Itierio had attended more in-service courses followed by Suneka while Gesero teachers had not attended any in-service courses.

Interpretation

This explained why Itierio and Suneka performed better than Gesero because most of their teachers had attended in-service courses. This result was in agreement with chapter two which suggested that attendance to in-service courses provide teachers with an opportunity to update their knowledge in their subject area.

4.8 Findings on some factors affecting performance in physics as perceived by teachers

Table 9 shows teachers responses on factors affecting performance as perceived by teachers.

Table 9

Statement	A lot		Little		Very Little	
	NO	%	NO	%	NO	%
a) Frequent teacher transfer	2	20	6	60	2	20
b) Too much teacher workload	7	70	3	30	-	-
c) Delay in supply of necessary resources for practical	8	80	2	20	-	-
d) Poor socio-economic background of students	5	50	4	40	1	10
e) Poor study skills among the students	5	50	3	30	2	20
f) Negative attitude towards physics	7	70	3	30	-	-
g) Peer group negative influence	7	70	2	20	-	-
h) Large number of students per class	8	80	2	20	-	-
i) High students to physics textbooks ratio	8	80	1	10	1	10
j) Family history on poor performance	3	30	4	40	3	30
k) Low level of parental education	6	60	4	40	-	-
l) Parents view that physics is difficult	6	60	2	20	2	20
m) Lack of support and motivation from parents	4	40	3	30	3	30
n) Household chores and other family engagements	4	40	4	40	2	20

Source; Primary data 2009

From table 9 the factors can be ranked from the most influencing to the least influencing.

Rank	Factor	Percentage (%)
1	Delay in supply of resources for practical	80
2	Large number of students per class	80
3	High students to physics textbooks ratio	80
4	Too much teacher workload	70
5	Peer group negative influence and attitude	70
6	Negative attitude towards physics	70
7	Parents view that physics is difficult	60
8	Low level of parental education	60
9	Poor socio-economic background of students	50
10	Poor study skills among the students	50
11	Lack of support and motivation from parents	40
12	Household chores and other family engagements	40
13	Family history on poor performance	30
14	Frequent teacher transfer	20

From table 4 (b) and table 9 it was evident that both teachers and students singled out the above named factors to be affecting the performance of physics in the three selected schools. The researcher categorized the above factors as endogenous and exogenous factors in order of priority based on the respondents' views on how they affect performance in physics.

Endogenous factors

1. Teacher experience and qualifications
2. Inadequate learning materials
3. Inability to pay school fees
4. Large number of students per class
5. Peer group negative influence and attitude
6. Students negative attitude towards physics
7. Lack of conducive environment for studying
8. Teachers methods of teaching and attendance to in-service courses
9. Too high teacher workload
10. Poor guidance and counseling
11. Poor relations between physics teachers and students
12. Poor study skills among learners
13. Overloaded syllabus
14. Frequent teacher transfer

Exogenous factors

1. Lack of time to study and revise
2. Lack of conducive studying environment
3. Household chores and other home engagements
4. Parents negative attitude towards physics
5. Low level of parental education
6. Poor economic background of students
7. Birth order
8. Lack of support and motivation from parents
9. Family history on poor performance in physics

Interpretation

Teachers experience and professional qualifications was the most influencing factor which influenced students' performance in physics. This was in agreement with what Cuttace (1980) observed regarding to teacher qualification and experience which have been found to correlate positively with students performance. This was why Itierio and Suneka schools performed better than Gesero.

Inadequate learning resources/materials hampered good performance in physics. Limited number of laboratory facilities, textbooks and other resources available to students lead to low performance. This fact explained why Gesero without a library and laboratory had low performance index throughout the years, a factor observed by Eshiwani in 1983.

Large number of students per class was another factor. This factor strained the available learning resources. It also lead to constant noise making in class leading to unconducive learning environment. This is why Itierio was found to have dwindling performance over the years due to large numbers per class.

Peer group influence and negative attitude towards physics was another factor. Students with negative attitude towards the subject were found to perform poorly or have abandoned the subject altogether. This explained why the three schools had lower mean score since all of them were mixed schools where girls view physics as boys' subject hence performing poorly lowering the school mean grades. This confirms what Mwangi (1983) found out that boys' attitude towards sciences is superior to girls.

Teachers' teaching methods and attendance to in-service courses was another factor. It was found out that most teachers do not use a variety of teaching methods hence cause for low performance in physics in Kisii South District. Also noted was that Itierio which had most of its teachers attending

in-service courses did better compared to Gesero who had none attending in-service courses.

Too much teacher workload and overloaded syllabus were found to go hand in hand. Since physics teachers are few, majority of them had to cope with large workloads. This left them with no time to prepare for practical lessons hence opted for lecture method of teaching. The teachers were found to be strained and were not able to cover overloaded syllabus in time. This confirmed research by Eshiwani (1983)

Poor guidance and counseling was found to be the reason why students lacked information regarding their career prospects inhibiting motivation of students in physics.

Poor relations between the physics teachers and the students strained their relationship leading to negative attitude.

Frequent teacher transfer was the last factor leading to low performance. Rapid changes of teachers impacted negatively in their teaching because a lot of time was required for both learners and teachers to adjust to the new teaching methods and new environment respectively.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter concentrated much on summary, conclusions and recommendations that were derived from the research findings. It also includes suggestions for future further research.

5.1 Summary of study problems and research methodology

The purpose of the study was to establish the factors within the school (endogenous) and outside the school (exogenous) that affect the performance in physics.

The study design was descriptive. The sample population was 150 students and 10 physics teachers in the concerned schools.

The data collected from the respondents were analyzed manually through recording frequency counts of the respondents' views. The raw scores were then converted to percentages which facilitated seeking of the answers. This was followed by discussion of the information that was already tabulated.

5.2 Summary of major findings based on teachers and students responses as to the factors affecting performance in physics

The findings were summarized in two categories namely:

- Endogenous factors
- Exogenous factors

The endogenous factors ranked in order of most influencing to the least influencing were as follows.

- 1 Teacher experience and qualifications
- 2 Inadequate learning materials
- 3 Inability to pay school fees

- 4 Large number of students per class
- 5 Peer group negative influence and attitude
- 6 Students negative attitude towards physics
- 7 Lack of conducive environment for studying
- 8 Teachers methods of teaching and attendance to in-service courses
- 9 Too high teacher workload
- 10 Poor guidance and counseling
- 11 Poor relations between physics teachers and students
- 12 Poor study skills among learners
- 13 Overloaded syllabus
- 14 Frequent teacher transfer

The exogenous factors were also ranked in order of most influencing to the least influencing as follows.

1. Lack of time to study and revise
2. Lack of conducive studying environment
3. Household chores and other home engagements
4. Parents negative attitude towards physics
5. Low level of parental education
6. Poor economic background of students
7. Birth order
8. Lack of support and motivation from parents
9. Family history on poor performance in physics

It was concluded that both the school characteristics together with home characteristics play a major role in influencing performance in physics.

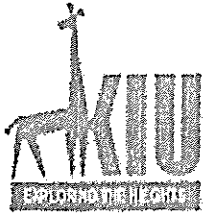
5.3 Policy recommendations on factors affecting performance in physics

From the findings of the study, the following recommendations were made:

- a) The government through the Ministry of Education should employ trained teachers to teach physics in all schools so as to boost the performance.
- b) The government in collaboration with SMASE should organize regular in-service courses to physics teachers so as to keep abreast with emerging challenges in the teaching of physics.
- c) The government should increase the allocation provided per child in the free secondary education so as to cater for all vote heads. Also bursary and any monies to be sent to schools should be released in time.
- d) The parents should monitor their students' progress and offer support and motivation to their children.
- e) School administrators should ensure that necessary learning resources are available in time.
- f) Curriculum developers should reduce the volume of its physics curriculum so as to avoid cases of incomplete syllabus.

5.4 Suggestion for Further Research

Further research should be carried out so as to find out the cause of poor performance in girls as compared to boys.



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Office of the Director

.....

TO WHOM IT MAY CONCERN:

Dear Sir/Madam,

RE: INTRODUCTION LETTER FOR MS/MRS/MR. MAURICE MARTIN OBARE

REG. #.....BED/15604/71/DF.....

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 THE PERFORMANCE OF
PHYSICS IN KISII SOUTH DISTRICT - 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

APPENDIX B

PHYSICS STUDENTS QUESTIONNAIRE

This questionnaire is intended to collect information on factors related to student's performance in physics.

The information you provide will only be used for research purposes and kept confidential.

You do not require to write your name. Your cooperation in completing this questionnaire will contribute to the success of the study. There is no right or wrong answer as in the case of an examination.

Thanks in advance.

Part 1: Instructions: Tick (✓) or fill the spaces or write SA, A, DA and SD to which apply to you in the following (where SA, A, DA and SD mean Strongly Agree, Agree, Disagree, and Strongly Disagree respectively).

Name of your school _____

1. Gender

Male ()

Female ()

2. What is your birth order in your family?

First ()

Last ()

Other(s), specify _____

3. What is your parent's/guardian's level of education?

	Primary	Secondary	College/University
Father	()	()	()
Mother	()	()	()
Guardian	()	()	()

4. What is your parent's/guardian's occupation?

Father _____

Mother _____

Guardian _____

5. In your view, respond to the following statements

a) Guidance and counseling is essential for a better grade in physics.

SA () A () DA () SD ()

b) Physics text books and lab equipments are enough in our school.

SA () A () DA () SD ()

c) Frequent teacher transfer is the cause of my poor performance.

SA () A () DA () SD ()

d) I do not like physics because physics teachers are harsh and boring.

SA () A () DA () SD ()

e) I spend less time studying and revising on my own while at home due to home engagements.

SA () A () DA () SD ()

f) I do like physics because my brothers/sisters excelled in it.

SA () A () DA () SD ()

g) There is a lot of work in physics and it should therefore be reduced

SA () A () DA () SD ()

h) Other students laugh at me/make noise for me when revising

SA () A () DA () SD ()

i) My parents always tell me that physics is hard

SA () A () DA () SD ()

j) Other students always tell me that physics is meant for a few

SA () A () DA () SD ()

6. Do you experience fees problem?

Yes () No ()

If yes how does it affect your performance especially in sciences?

a) I miss most of the lessons when I have been sent home for fees?

SA () A () DA () SD ()

b) My practicals for physics are not consistent due to absence for fees.

SA () A () DA () SD ()

c) A lot of physics notes accumulate due to absence for fee.

SA () A () DA () SD ()

d) My physics teacher does not like my constant absence in his subject.

SA () A () DA () SD ()

7. Did your parent's/guardian's encourage you to do physics as one of your subjects?

Yes () No ()

If yes, give a reason

a) They know that it is easy

SA () A () DA () SD ()

b) They know it to be career oriented

SA () A () DA () SD ()

c) They know that most of my friends do it

SA () A () DA () SD ()

d) They know that physics teachers are good and qualified

SA () A () DA () SD ()

APPENDIX C

PHYSICS TEACHERS QUESTIONNAIRE

This questionnaire is intended to collect information on factors affecting student's performance in physics.

The information you provide will only be used for research purposes and kept confidential.

You do not require to write your name. Your cooperation in completing this questionnaire will contribute to the success of the study.

Thanks in advance.

Part 1: Instructions: Tick (✓) or fill the space to which applies to you in the following.

1. Gender

Male () female ()

2. Professional qualification

M.ed ()

P.G.D.E ()

M.sc ()

Dip.Ed ()

Bed ()

Other(s) specify _____

3. Length of teaching

< 2 years ()

4-6 years ()

2-4 years ()

> 6 years ()

4. What are your other teaching subjects?

5. Is the subject you teach the one you studied at school/college/university?

Yes ()

No ()

6. Have you attended any in-service course related to physics?

Yes ()

No ()

If yes, indicate the date attended

In-service course attended

Date

7. Indicate the ratio of physics text books to the students in your class

8. Do you consider the textbooks for the students in your class adequate?

Yes ()

No ()

If yes, state why

9. How often do you use the following methods of teaching to teach physics?

	Frequently	Occasionally	Rarely	Never
a) Lecture method	()	()	()	()
b) Laboratory demonstrations	()	()	()	()
c) Laboratory experiments	()	()	()	()
d) Projects	()	()	()	()
e) Field trips (excursions)	()	()	()	()

10. How do you think each of the following factors may contribute to poor performance in physics?

	A lot	Little	Very Little
a) Frequent transfer of teachers	()	()	()
b) Too much teacher work load	()	()	()
c) Delay in supply of necessary resources for physics Practicals	()	()	()
d) Poor socio-economic background of students	()	()	()
e) Poor study skills among the students	()	()	()
f) Negative attitude towards physics	()	()	()
g) Peer group negative influence	()	()	()
h) Large number of students per class	()	()	()
i) High students to physics textbooks ratio	()	()	()
j) Family history on poor performance	()	()	()
k) Low level of parental education	()	()	()
l) Parents views that physics is difficult	()	()	()
m) Lack of support and motivation from parents	()	()	()
n) Household chores and other engagements	()	()	()

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