FACTORS INFLUENCING SELECTION OF SCIENCE SUBJECTS AMONG SECONDARY SCHOOL STUDENTS IN NANDI SOUTH DISTRICT.

BY

OWINYO DAVID MBOGA
BED/13654/61/DF

A RESEARCH PROJECT SUBMITTED TO THE INSTITUTE OF OPEN AND DISTANCE LEARNING IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF BACHELORS DEGREE OF EDUCATION (SCIENCE) OF KAMPALA INTERNATIONAL UNIVERSITY.

AUGUST 2008

DECLARATION

I Owinyo David Mboga declare that this research project is my original work and has not been submitted for the award of any kind of study program in any university.

Name: Owinyo David Mboga

Reg.no: BED/ 13654/ 61/ DF

Sign.....

Date.....15/08/08.....

APPROVAL

This research proposal is presented to the Institute of Open and Distance Learning (ICDL), Kampala International University, through approval of my supervisor,

Mrs. Mutumba

Sign.....

Date.....15/8/08.....

DEDICATION

I would like to dedicate this work to my loving wife Beneta, my son Fortune and my daughter Alia.

ACKNOWLEDGEMENT

I am heavily indebted to Kampala International University for giving me an opportunity to undertake this programme. I would like to thank my supervisor, Mrs. Mutumba whose invaluable support and enocouragement enabled me to come up with this project. Indeed her availability in reading the proposal and preparation of the project is worth mention.

My heartfelt gratitude also goes to my loving wife Beneta, son Fortune and daughter Alicia for the patience and understanding during my long absence from home while attending this course and carrying out this project. I will also not forget the input of my friends Genson Gitonga, Hillary Tum and David Kitur who assisted me in proof reading of this project report.

ABBREVIATIONS

KNEC	Kenya National Examinations Council
KCPE	Kenya Certificate of Primary Education
KCSE	Kenya certificate of Secondary Education
SMASSE	Strengthening Mathematics and Science Subjects Education
MEST	Ministry of Education, Science and Technology

TABLE OF CONTENTS

CHAPTER ONE

1.0 INTRODUCTION

This chapter was mainly concerned with the background of the study, the statement of the problem, research questions, purpose and objectives of the study. The hypothesis, purpose and significance of the proposed study were looked at in this chapter.

1.1 BACKGROUND OF THE STUDY

The basic economic problem that all Government and households face currently is how best to allocate scarce resources competing ends. Resources consist of land, labor, capital and management. Decision to invest in a given project depends on societies' objectives, costs and future benefits to be derived from such investments.

Adam Smith, an early classical economist emphasized the importance of investing in scientific skills. There have been some difficulties in science subjects among students in secondary schools in Kenya. This has been evidenced by poor performance in K.C.S.E.

Relatively, boys have significantly shown a better performance due to presumably more inclined to sciences than girls.

Data from K.C.S.E. clearly indicates a variable result in science subjects, with boys comparatively scoring higher than their girls' counterparts. The table below shows K.C.S.E. results of the year 2003, an attest to this assertion.

GENDER	BIOLOGY	CHEMISTRY	PHYSICS
BOYS	D+	D	D
GIRLS	D+	D-	D-

Source; K.N.E.C.Report, 2oo4.

Results in science subjects have generally remained poor in Kenya for a long time, for both boys and girls.

Students whose parents excelled in academics and have better paying careers comparatively work harder than those whose parents' academic level is relatively lower.

Students with peer group friends who are school dropouts due to seemingly defiant behaviors or juvenile delinquency will relatively have significantly lower performance in science subjects, thus do not prefer choosing science subjects, than those with learned peer friends.

Thirdly, unfriendly teachers, whose presence in class is scaring have undeniably, produced students with comparatively lower performance in science subjects.

1.2 STATEMENT OF THE PROBLEM

Performance in science subjects in K.C.S.E. has remained sparingly poor in Nandi south district as compared to other examinable subjects. Historically science subjects have been considered difficult, and for this reason many students shy away. This has had a negative impact in the science subjects, thus affecting selection of these subjects.

The issue of selection of science subjects among secondary school students is increasingly intriguing in Nandi south district. The major presumed dynamic factors influencing science subjects' selection in this district are; gender, teachers' attitudes including motivation and competence, family background peer influence.

The table below, collected from St. Mary's Tachaasis Girls High School, the district SMASSE inset centre precisely addresses gender issues and science subjects.

KCSE 2003 ANALYSIS OF SCIENCE SUBJECTS WITH GENDER

SUBJECT:	GENDER	A-B+ (%)	D-E (%)	TOTAL
BIOLOGY (231)	BOYS	12.96	34.50	9,103
	GIRLS	7.58	45.86	8,494
PHYSICS (232)	BOYS	5.96	51.18	3,831
	GIRLS	3.02	63.86	1,199
CHEMISTRY (233)	BOYS	4.48	62.82	9,630
	GIRLS	2.05	74.28	8,396

Source; SMASSE cycle 1, nandi south 2004, gender issues in science education.

From the above elaborative data, we can draw the following conclusions;

(i) There has been greater drop in girls' performance than boys i.e. more boys got grades between B+ and A across the three science subjects than girls. Moreover small percentage of boys attained grades between E and D across the three subjects than girls.

(ii) More boys offer science subjects than girls. Generally, few students opt for science subjects at form four.

(iii) Small percentage of students obtains considerably better grades in the three science subjects.

Given these problems, this study attempted to investigate the effectiveness of influence of early socialization, gender, teachers' influence, family background and peer group on selection of s

The respondents of the study were form two students of the following selected schools, Maraba, Kaptumo, Our Lady Of Peace, Banja, Tinderet, Taito, Bonjoge, Kapkolei, Sochoi Mixed and Kapkures.The sample constituted 20% of all secondary schools in the district.

1.3 PURPOSE OF THE STUDY

The purpose of the study was to investigate factors influencing selection of science subjects among secondary school students in Nandi south district. Poor performance in these subjects in the district was alarming.

1.4 OBJECTIVES OF THE STUDY

The researcher sought to link the following objectives to the purpose of the study, from the students' response;

(i) To compare boys' and girls' attitudes towards science subjects selection.

(ii) To determine whether there is significant influence of gender on the choice of science subjects by secondary school students.

(iii) To investigate how teachers' attitudes influence selection of science subjects by secondary school students.

(iv) To determine the influence of parents, peers, brothers and sisters in the selection of science subjects by secondary school students in Nandi south district.

1.5 RESEARCH QUESTIONS

The following questions guided the researcher:

(i) Does gender difference affect students' attitudes and selection of science subjects?

(ii) Does teachers' attitude influence selection of science subjects among secondary school students?

(iii) Do the family, friends and society influence the attitude of students towards science subjects?

1.6 SCOPE OF THE STUDY

The study limited itself in Nandi south district. This area was selected because of low performance in science subjects in KCSE examinations. Students in the district are drawn from the same environment; therefore they shared common and unique problems, which will enable the researcher to come up with reliable conclusions. Financial constrains and time to cover the given area was considered.

1.7 SIGNIFICANCE OF THE STUDY

This study investigated the effectiveness of early socialization, gender, teachers' attitudes and social background on selection of science subjects among secondary school students in Nandi south district. In addition to establishment of equal access of learners to science education, the study laid a foundation of experimentation, investigation, discovery and application skills and knowledge.

The study, most importantly, bore significant encouragement to students of this district to pursue the most competitive and technological professions and careers. The field of science and technological professions requires a strong scientific background. Therefore, strategically, scientific and technologically oriented persons must have a positive attitude from early childhood.

The results restructured the rationale of science subject's selection system and career choices among secondary school students.

Finally, the study centered on the form two students as a purpose to understand their options and opinion on science subjects. Through findings of the research, learners will have a guide for choosing science subjects combinations wisely, owing to the fact that this is the strategic level for making this decision.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

1.0 INTRODUCTION

This is a chapter in the proposed study which reviews literature related to the study, and it is divided into sections with some relevant information.

1.1 LITERATURE RELATED TO GENDER INFLUENCE

The effect of gender on academics, technology and achievements of students is distinct. According to Raymond, in the article, Fringed Research Number 48, he asserts that "gender influences student's performance and hence in the introductory technology in favor of male students. Achievement of students differs on the basis of influence on social background or gender." Pg 4

In the book, curriculum practice, (1975), the survey done shows that the different attitude on science selection is based on gender and is widely dispersed despite being unlawful to the light of the Discriminatory Act.

In Kenya today, the proportion of female in science and technology related courses at the university is very low. Koech Report of 2000 shows that only 5% of populations are female in the engineering courses, showing that their performance in science is quite low.

Several sources have shown that children have equal abilities, but unfairly have a difference in access to opportunities, learning experiences and programs. From the article, improving gender and ethics relations strategies for schools and further education, chapter 7, the

predominance of boys in science subjects over girls is addressed. "The implication of gender and related concepts of social class, ethnicity as well as age and stages of access of women to specifically sciences." pg 17. Some important issues and strategies towards attracting more girls in expanding the opportunity of access to science subjects experiences.

"There are stereotypic thought that science is a boys' subject. More over, there has been a distinct sex specific curriculum, deemed boys or girls' subjects respectively. Girls' subjects are thought to be catering, needle work, cloth designing, dancing, human biology, jewelry and home science, most of which are offered in girls' schools. The subjects deemed to be boys' subjects are gardening, woodwork, pottery, survey, physics, chemistry, navigation, building and construction, and drawing and design, most of which are offered in boys' schools." (Curriculum practice, some social case studies-1983).

Imposing a rigid curriculum enhances building a traditional division on self-image. However, the reports from secondary schools survey made in England Schools show that subjects are made open to students to pupils of both sexes. In Kenya, boys and girls seem reluctant to conform to this opportunity due to conceptual sex-deemed subject's notion.

The table below shows the KCSE grades for the year 2003 as an attest for this assertion, by mean grade.

GENDER	**BIOLOGY**	**CHEMISTRY**	**PHYSICS**
BOYS	D+	D	D
GIRLS	D+	D	D-

SOURCE; KNEC KCSE 2004 REPORT

Performance in science subjects influence professions and future careers. Boys therefore pursue scientific and technological careers as opposed to girls. There has been a significance difference in the students' performance in sciences which is as a result of attitude and interest of boys in physical sciences than girls, and do more or less equal in biological sciences at the secondary school level.

In the article titled "New strategy to improve science performance in Kenyan schools," Benjamin Muindi writes, "For a long time good grades in mathematics and science subjects have generally remained a preserve of male students in many schools." Daily NATION June 20 2008.

The data below collected from the KNEC reports of 2004 and 2005 shows a clear difference between performance of boys and girls who sat the KCPE in the two years.

YEAR	2004		2005	
GENDER	FEMALE	MALE	FEMALE	MALE
MEAN SCORE IN SCIENCE	41.70	47.14	47.08	54.06

SOURCE KNEC REPORT KCPE 2004/2005

From the above data, the candidate performance per gender is not equilibrium; boys scored higher than girls did. After some little time, in form two, the selection of science subjects is highly influenced since the entry behavior of girls in science is already in a poor shape.

In addition to poor attitude of girls to science subjects, the community to sensitize and conceptualize on gender equality presumably attributes their poor performance to less concern, probably. Girls comparatively

react to science curriculum differently to boys, as shown by the case study done by Hamersley in the book "curriculum practice", through which he underscored differential vivid attitude of pupils towards partaking various science subjects. "It has been observed that girls prefer lighter tasks to hard ones, compared to boys, consequently sex-deemed tasks arise. This has led to many girls giving up subjects viewed as more challenging." SMASSE Nandi South district inset cycle one 2004.

1.2 TEACHERS' ATTITUDE, MOTIVATION AND EFFECTIVENESS.

Teachers play a great role of instilling positive or negative attitude towards science subjects, hence their selection. Teachers expect some students to perform well and not others. in mixed schools, teachers expect boys to choose science subjects and not girls. Students therefore, adapt and demonstrate what teachers communicate to them.

"Teachers are the most important agents that influence change in students' attitude towards science subjects. They are in contact with students most of the time. Through such contacts, they communicate their views and expectations to students. Students are likely to faithfully believe them" SMASSE Nandi south district inset cycle one 2004, Attitude and motivation in science subjects and mathematics.

The way teachers teach and handle students tend to reinforce stereotypic thinking that particular subjects are too hard and unnecessary.
The association of science ASE (1990) asserts that teachers should become aware of values they transmit to learners through interaction. Therefore, science teachers relatively expect lower achievements and performance from "weak" students, thus discouraging students from pursuing science subjects. Teachers are however, expects to transmit values that elicit voluntary responses to selection and learning of science

subjects. Contrary to this, most role models, like teachers have supported misconceptions and prejudice of gender-based, or weak students-based subjects. Benn and Simon elaborated this.

The methods used by teachers to teach science subjects are also put in the limelight. Edward Tindi, the chairperson of SMASSE in Africa, asserts, "There is something fundamentally wrong with the way we are teaching these subjects. For instance, teachers instruct their students according to how questions are asked in examinations, leaving little room for creativity. For example, students are asked to state, explain, discuss or find out, among other verbs, and this dictates how the teacher goes about teaching the subjects." He adds that teaching of these subjects should be like an open field, where students are not tied to only certain approaches. He further notes that the teacher is
key to making the students enjoy the subjects and, therefore, must make teaching a fun. Tindi advises students, "You are responsible for your own learning. Know what makes sense and what does not." Daily Nation Friday June 20, 2008, new strategies to improve science performance in Kenyan schools.

2.3 LITERATURE RELATED TO FAMILY BACKGROUND AND SOCIALIZATION

The family background has a great influence in science subjects' selection. The family can modify the character and attitude of students and present a poor image of science subjects. Family, in conjunction with society, presents experiences learnt informally, which contrast with science experiences gained in science class.

"Despite methodologies used by teachers, educational experiences remain sharply different just as they had done under previous

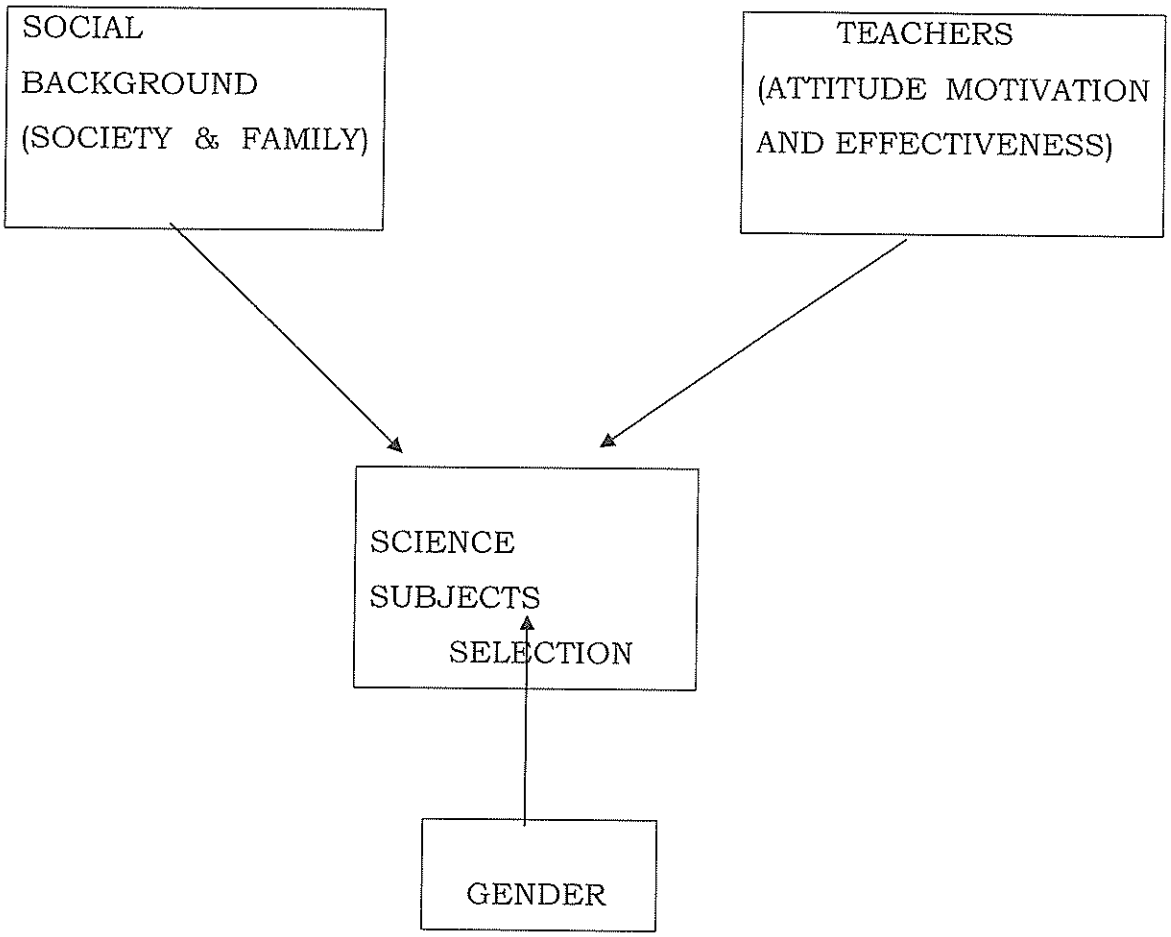
development stages. Thus previous experiences become a means to an end." John Dewey (1859-1952).

Students find it hard to learn new specific experiences without supportive social background. The former educational experience in students has an upper hand on virtue of self-realization than learning experiences organized in class lessons of science.

Brothers and sisters directly or indirectly influence selection of science subjects among secondary school students. Selecting science s seems more challenging especially when they see their own brothers and sisters go without jobs for years. On the other hand, the older brothers and sisters give students negative advice on science subjects' selection. Since the society and peers influence science subject's selection by presenting a poor image of the subjects, the selection of these subjects remains poor in secondary schools in Nandi South district.

2.4 SUMMARY

From the review of literature, the main factors underscored to influence selection of science subjects in secondary schools are; students' social background, gender and teachers' attitudes and motivation.



Richard K (2004) Strengthening Mathematics and Sciences in Secondary Education (SMASSE), Nandi North Inset, NAIROBI.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 INTRODUCTION

This is a chapter in the project that was concerned with the design and locale of the study. It also looked at the target population and sampling techniques. Research instruments including data collection techniques were addressed in this chapter. The chapter also gave a way on how data would be analyzed.

3.1 STUDY LOCALE

The study localized itself to secondary schools in Nandi south district. The district borders Nandi north, Kisumu to the south, and Vihiga to the west. This locale was chosen because the general performance in science subjects in national examination is very low. The area was within reach of the researcher and was economical to carry out the research.

3.2 RESEARCH DESIGN

The study adopted an exploration approach using a descriptive survey design to investigate factors influencing selection of science subjects in secondary schools. Descriptive survey design was used in preliminary and exploratory studies. Elhart (1972) argues that descriptive survey methods are widely used to obtain useful data in evaluating present practices in providing basis for decision. The method was chosen, as most of the work involved the frequency of answers to some questions by different respondents. Descriptive survey design was also appropriate because it involved collecting data in order to answer questions concerning the status of the subjects of the study. This is according to Gay (1993).

3.3 SUBJECTS

The respondents to this study were students in form two from selected schools. This is because they were at a level of selecting subjects on their way forward to KCSE examinations.

Forty students were selected from each school, which constituted a sample. The sample size formed 20% of the whole population of form two students in the whole district. The table below represented the target population per school chosen.

TYPE OF SCHOOL	NO. OF BOYS	NO. OF GIRLS	TOTAL NUMBER
mixed schools	20	20	40
girl's school	-	40	40
boy's school	40	-	40

3.5SAMPLE SELECTION

The sample unit described secondary schools in Nandi south district. Ten schools were selected purposely out of fifty-eight schools in Nandi south district. This constituted 20% of the schools. In the selected schools, the target population of students was purposely selected from form two. The goal of purposive sampling was to select cases that were likely to be rich in information in reference to the purpose of the study. (Galletal 1996)

Within the purposively selected schools, stratified sampling was used to sample students.

3.4 RESEARCH INSTRUMENTS

Data collection instruments were questionnaires. The research instruments was designed to reflect the feelings of students about science and science subjects' selection. The statements either reflected family influence, peer influence, teachers' influence or gender influence.

Questionnaires were preferred over other data collection instruments because they were time saving and are able to make students give their opinions without fear. Due to the large sample to be described, the use of questionnaires was most appropriate. They were also reliable since they gave consistent results irrespective of geographical and historical contexts. Because questionnaires had high degree of validity, and responded to what they were supposed to measure, they were very appropriate to this research.

3.5 PILOTING

In this study, pre testing of the instruments was done at Maraba secondary school, purposely sampled. According to Orodho (2004) sampling is the process of collecting a subject of cases in order to draw conclusions.

Piloting enabled the researcher to determine whether the instrument was reliable and valid. This enabled the researcher to use inferential statistics to analyze the data. Piloting was done prior to the actual research by selecting few respondents at random.

3.6 DATA COLLECTION PROCEDURE

The data collection part involved preparation of questionnaires composed of 17 items (statements), each reflecting on either family influence, teachers' effectiveness, social background or gender influence. Equal number of boys and girls were sampled from Maraba, Banja, Kapyumo, Taito, Our Lady of Peace, Tinderet, Bonjoge, Kapkolei, Kapkures and Sochoi mixed secondary schools in Nandi south district.

The questionnaires were presented to the form two students as respondents under a well supervised examination. Forty students from each school were examined and results collected and description done after analysis.

The researcher collected data himself by presenting and collecting back questionnaires. The researcher had to choose the students for the sample randomly and personally. Permission to do the research will be sought from the Nandi south district education office and the head teachers of affected schools approached in advance.

3.7 DATA ANALYSIS

This part involved analysis of data collected from the sampled schools. The analysis was based on the stated objectives. The appropriate technique to be used in this research analysis of data was descriptive statistics. This involved the use comparative matrix, pie charts and bar graphs to give distinct comparative features of the variables. This technique was justified due to its high degree of variability and validity as far as reflective of issues is concerned.

Analysis based on each objective was done accordingly, and conclusion of hypothesis done. This involved analyzing data in four arrays of comparing boys' and girls' attitudes on science subjects, testing the

significance of gender on science subjects selection, finding out the influence of teachers, and finally finding out the influence of social background on selection of science subjects. For each hypothesis to be concluded, pie charts and bar graphs were used to illustrate the results.

CHAPTER FOUR

DATA ANALYSIS AND THE STUDY FINDINGS

4.0 INTRODUCTION

In this chapter, the results of the study are presented and discussed. Data was collected from 400 form two students from ten secondary schools in Nandi south district, Rift valley province.

The findings are arranged according to the various factors hypothesized in the study, i.e. effects of gender, teachers, family and friends in selection of science subjects in secondary schools.

4.1 GENDER AND SELECTION OF SCIENCE SUBJECTS

Majority of the students expressed that their choice of science subjects are influenced by

Gender 60% of the respondents chooses science subjects that are related to their gender.

Only 15% of girls will select physics at the end of form two, 35% of boys were willing to offer physics as illustrated in the table below;

Table 4.2.1

Number of students willing to offer physics withgender.

Gender	Frequency	Percentage
Boys	137	35
Girls	62	15

Source: Research data.

Majority of boys had interest to take chemistry than girls, 75% as shown in the table below.

Table 4.2.2

Gender	**Frequency**	**Percentage**
Boys	342	85
Girls	304	75

Source: Research Data

On the other hand, majority of girls, i.e. 96% will take biology while 88% of boys are willing to offer biology, as shown in the table below.

Table 4.2.3

Gender	Frequency	Percentage
Boys	352	88
Girls	385	96

Source: Research Data

From those students who responded as shown in the table above, majority said science subjects are difficult and should be made optional. According to the students, mostly girls, they chose science subjects because there is no alternative.

Majority of the girls interviewed have an attitude that science is a boy's subject, since science teachers encourage boys to pursue sciences.

Table 4.2.4 number of girls who felt that science is boy's subjects.

RESPONSE	**FREQUENCY**	**PERCENTAGE**
AGREE	129	64.5
DISAGREE	58	29
NOT DECIDED	13	6.5
TOTAL	**200**	**100**

Source: Research Data

4.2 TEACHERS ATTITUDES ON SELECTION OF SCIENCE SUBJECTS

The researchers sought to know the state of teachers influence on selection of science subjects among secondary school students i.e. if the teachers were encouraging the students to take science subjects.

Table 4.3.1 Science teachers do not explain science concepts well to students.

RESPONSE	FREQUENCY	PERCENTAGE
AGREE	142	35.5
DISAGREE	258	64.5
NOT DECIDED	0	0
TOTAL	**400**	**100**

Source: Research data

4.3.2 Whether teachers encourage students to pursue science subjects.

An opinion was sought on whether the science teachers encourage their students to pursue science subjects. The table below summarizes the results obtained.

Table 4.3.2

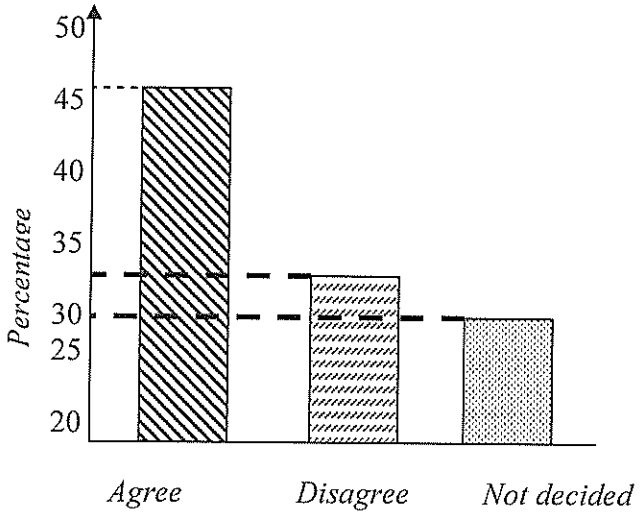
RESPONSE	FREQUENCY	PERCENTAGE
AGREE	168	42
DISAGREE	232	58
NOT DECIDED	0	0
TOTAL	**400**	**100**

Source: Research data

4.3.3 Whether teachers use experimentation during science lessons

The researcher sought to find out whether teachers use experiments during their science lessons, 45% of the respondents they usually do not do experiments while 25% were undecided. This illustrated in the graph below.

Figure 1 whether teachers use experiments during science lessons.

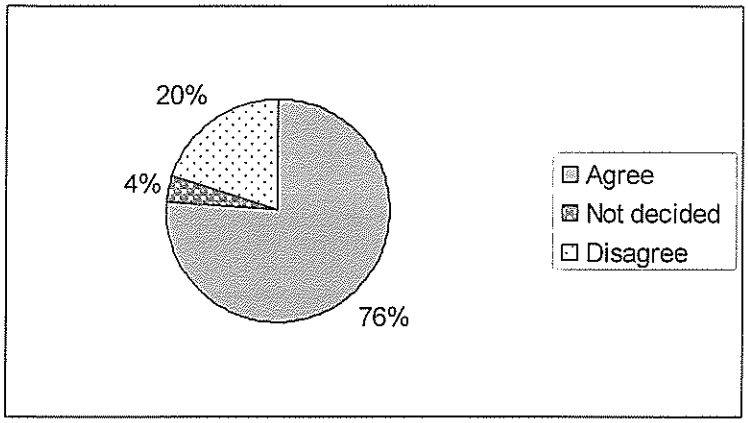


Source: Research data

4.4. Influence of parents, peer, brothers and sisters in selection of science subject.

4.4.1 influence from brothers and sisters 76% of respondents agreed that their brothers and sisters never studied science subjects and felt that there was no need for them to study sciences. 20% disagreed while 4% were not decided, as indicated in the pie chart below;

Fig. 2. Whether brothers and sisters influence selection of science subjects



Source: Research data

4.4.2 Whether Parents encourage students to pursue science subjects.

Majority or 83.3% parents do not encourage students to pursue science subjects. Only 10% of respondents agreed that their parents encourage them while 6.7% of the respondents were not decided as shown in the table below.

Table 4.4.2 Whether parents encourage students to pursue science subjects.

Response	Frequency	Percentage
Agree	333	83.3
Disagree	40	10
Not decided	27	6.7
Total	400	100

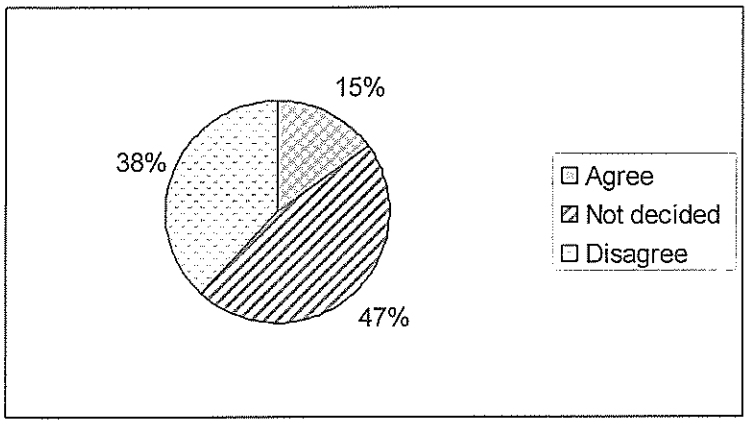
Source: Research data

4.4.3 Influence of Peer group friends on selection of science subject

Only 15% of the respondents were encouraged by their peer to pursue science subject. 38% affirmed that their friends were not encouraging them to pursue science subjects while 47% of the respondents were not

willing to disclose the involvement of their friends in science subjects' selection. The pie chart below summarizes this

Fig 3. Do your peer friends influence you choosing science subjects?



Source: Research data

4.5 PROBLEMS THAT LEARNERS FACE IN SCIENCE

To establish these problems, learners were asked to state the challenges they face in science subjects and to suggest ways of overcoming the challenges. These are illustrated in the table below.

Table 4.6.1 Problems students face when learning science subjects

Problems	Frequency	Percentage
Inadequate laboratory apparatus	258	64.5
Challenging science terms	164	41
Lack of science text books	271	67.75
Absenteeism due to fees problems	114	28.5
Inadequate science teachers	84	21
Limited time for revising	106	26.5

Source: Research Data

Lack of text books and laboratory apparatus emerged to be the major problems experienced by students. Standing at 67.75% and 64.5 respectively, 41% of respondents felt that scientific terms are challenging while absenteeism due to school fees problems stood at 28.5%, 26.5% of students, mostly from day schools have no time for revising. Only 21% of respondents felt that science teachers are inadequate in their schools.

4.6 Suggestions for overcoming the challenges

Some of the suggested ways of overcoming challenges that students face includes; increase school funding by the government and parents to build science laboratories, laboratory materials and textbooks, science teachers should be friendly and provide clear explanations to confusing scientific terms and the government to employ more science teachers. The table below summarizes the students' suggestions.

Table 4.6.2 Ways of overcoming challenges faced by students

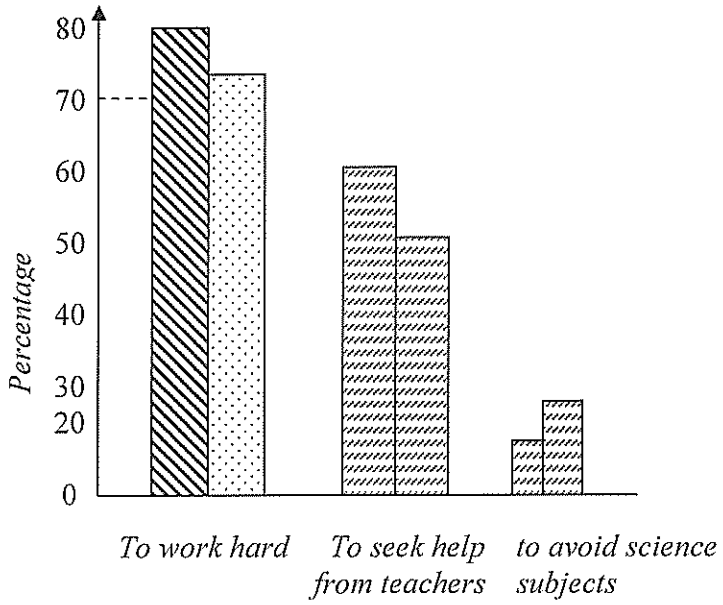
Category label	Count	Percentage
Increase funding for buying equipment and books	126	31.5
Science teachers should give clear explanations	94	23.5
More science teachers to be employed	84	21
Parents should pay school fees in time	42	10.5

Source: Research Data

What the students would do to improve in science subjects

Majority of the respondents were willing to work hard and take science subjects seriously. This is indicated by the graphic representation below.

Fig – What the students are wiling to do improve performance in science subjects. With gender



Source: Research Data

CHAPTER FIVE

SUMMARY, RECOMMENDATIONS AND CONCLUSIONS

5.1 INTRODUCTION

The study was a survey of factors influencing selection of science subjects among Secondary School student in Nandi South District, Rift Valley Province. It aimed at finding out the influence of gender, teachers' attitudes and role played by parents, peer pressure and brothers and sisters in selection of science subjects among secondary school students.

5.2 SUMMARY OF RESEARCH FINDINGS

From the study finding, it was an indication that gender affects choice of subjects among secondary school students greatly. Though a good number of students had a positive attitude towards science subjects, previous poor performance by girls still remains a problem. This makes most girls feel that sciences are boys' subjects.

Majority of science teachers, encourage boys more than girls to pursue science subjects. This was evidenced by the large percentage of students who indicated that boys are always chosen by the teachers to perform scientific tasks. Most science teachers are also unfriendly to learners and do not give clear explanations to scientific concepts this discouraging learners.

Most students, it was observed come from poor families, and that their parents are illiterate. Such parents have no interest in science subjects and end up discouraging their sons and daughters. It was further discovered that students face a lot of problem such as conducive ready environment at home, lack of paraffin and overburdening of students,

especially girls, with household chores, leave students with less time to study and revise their work thus making science subjects challenging.

Peer influence and attitude of brothers and sisters who are either school dropouts or never excelled in science subjects imparts negative attitude towards science subjects. Most students are discouraged from science subjects by their peer friends who see science subjects of little significance in their life.

A school endowed with good physical facilities, enough learning materials and science teachers have a good number of their students preferring science subjects. However, physical facilities such as classrooms, laboratories and library, and teaching/learning materials such as text books and even teachers in most of the schools were found to be inadequate, explaining why may student in these schools do not prefer since subjects. Despite the scarcity of these resources, majority of the schools lacked a master plan and good time management for science practicals, did not utilize the limited available resources equitably resulting in poor syllabus coverage and poor and discouraging performance.

5.3 CONCLUSION

The technological world we live in today requires that on be equipped with scientific and technological skill which will enable them to be competent and relevant in the market. The Kenyan government through the ministry of education introduced finding to selected secondary schools in each district for equipping science laboratories and buying text books. The ministry of education in conjunction with the Japanese government started an in-service course called SMASSE to equip science teachers with relevant information and tactics to improve performance in

science subjects. Despite of these, the attitude and selection of science subjects by secondary school students in low income areas is quite poor. However, despite the scarcity of resources, if schools utilize the limited available resources equitably and encourage students and stakeholders to have a positive attitude towards science subjects, good performance will be realized.

5.4 RECOMMENDATIONS

Students should be given equal opportunities to pursue science subjects in our schools. Girls should be told about the importance of science subjects and be guided in selection of these subjects appropriately. This should begin as soon as they join form one.

Teachers should provide good explanations and be available to the students for explanation of challenging scientific areas to enable students has confidence and positive attitudes towards the subjects. Teachers should also consult wide in order to appear relevant and arouse students' confidence in their subject areas.

Parents/guardians to be urged to be positive on sciences and avoid giving conflicting explanations and guidance to scientific areas they do not understand. School fees should be paid in time to avoid wastage of time when students are sent back home. Parents should also give students a conducive environment for their children in day schools for learning and revising.

School funding to be increased through fundraising and government grants to build science laboratories and teaching and learning materials like books, laboratory equipment and chemicals and to ensure these subjects are conducted practically for better understanding.

Schools should establish career guidance and counseling departments, in addition parents and teachers to take a joint responsibility in guiding their students on science subjects' selection that suit their future dreams.

5.5 LIMITATIONS OF THE STUDY AND RESEARCH GAPS

This study was limited only to form two students in secondary schools in Nandi South district. The study only used a questionnaire method of data collection and ignored other methods of data collection like interviews and observation especially on teaching/learning facilities and physical facilities in schools.

There is need to carry out an extensive and similar study on all schools in Rift Valley province and the whole country, so as to have a comprehensive report on the factors aimed at promoting positive attitudes towards science subjects and their selection in secondary schools.

Further studies should incorporate other methods of data collection such as observation, interview and also include more open ended questions as much as possible in the questionnaires.

REFERENCES

1. Anticson R. L. and Hilgard E. R. (1983), Introduction to psychology. Harcourt Brace, Jovanovich publishers.

2. Bishop G. (1985) Curriculum development.

3. Hamersley M. and Any H. (1983), Curriculum practice, some sociological case studies. Falmer press, New York.

4. MOEST (2002), Education for All Handbook.

5. Orodho A. J. (2004 A), Techniques of writing Research Proposal and Reports. Massola Publishers, Nairobi.

6. Orodho A. J. (2004 B), Education and Social Science Research Methods. Mosola Publishers, Nairobi

7. Raymond (1994) Eridged research. Introductory technology number 48, (Article)

8. Republic of Kenya, Report of The Commission of Inquiry (Koech), Nairobi, Government Publishers.

APPENDIXES

APPENDIX A: TIME FRAME

The proposed period for conducting this research, from the preparation of instruments to submission of the report is expected to be five months. The activities in the research will be broken down into months in order to allow the researcher room for organization. This will be done as shown in the table below.

TIME FRAME FORMAT

TIME FRAME	ACTIVITY
April 2008	Writing proposal
May 2008	Preparation of instruments
May 2008	Piloting of instruments
June 2008	Data collection
June 2008	Data analysis
July 2008	Report writing
August 2008	Submission of the final report

APPENDIX B: THE BUDGET

This part displays the budget for funding the research proposal and report. The researcher will sponsor himself. The budget proposed for the research is shown in the table below.

ITEM	**QUANTITY**	**AMOUNT (KSH)**
FOOLSCAPS	1 REAM	400
DUPLICATING PAPERS	2 REAMS	800
SECRETARIAL SERVICES	Proposal & report	2000
TRAVELING	14 days	2500
SUBSISTENCE	42 days	3000
BINDING	2	200
total		8900

APPENDIX C: QUESTIONNAIRE

INTRODUCTION

Please, answer the questions below as honestly and objectively as possible. The information is meant merely to aid in data collection, tabulation, presentation and making valid conclusions on the partial contribution to the research. Confidentiality of the information you give will be highly kept.

PART I

1. State your gender

Male ☐ Female ☐

2. What grade did you attain in the subjects below last term?

Biology ☐

Chemistry ☐

Physics ☐

PART II

Using your own judgment, what is your opinion on science subjects, using the scale of A, D, and ND, where A is Agree, D is disagree and ND is not decided.

	ATTRIBUTE	**A**	**D**	**ND**
1	I feel bored with lessons involving experiments.			
2	I don't like science experiments because the teachers do not give us proper guidance.			
3	I don't like learning in the laboratory due to bad smell			
4	I think sciences are meant for boys since teachers encourage boys to pursue them			
5	My teachers often use boys to demonstrate science experiments.			
6	Sciences are not important for my future career			
7	My teachers encourage me to pursue sciences			
8	My parents encourage me to pursue sciences			
9	My friends discourage me from science subjects			
10	My brothers and sisters never studied sciences so I see no need to pursue sciences			
11	In my school only few students opt to offer sciences			
12	Science subjects are interesting since my teachers use experiments during lessons			

PART C

Answer the following questions objectively.

a. What problems do face in learning science subjects?

.....

.....

b. Give your suggestion on how to encounter the above problems.

.....

.....

3. What do you think should be done for you to improve in sciences?

.....

.....