

**TEACHERS ATTITUDES TOWARDS LEARNERS IN
THE TEACHING AND LEARNING OF SCIENCES:
A CASE STUDY OF PIONEER LOCATION,
UASIN-GISHU DISTRICT,
KENYA.**

BY

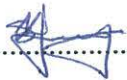
**NJOROGE KIMANI SAMWEL
BSE/14443/62/DF**

**A RESEARCH PROJECT SUBMITTED TO THE FACULTY OF EDUCATION
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE
AWARD OF BACHELOR OF SCIENCE WITH EDUCATION
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UNIVERSITY**

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DECLARATION

I **SAMWEL KIMANI NJOROGI**, of **REG NO: BSE/14443/62/DF** a student of Kampala International University, , do hereby declare that this report is my original work and has never been submitted to any university or any other institution of higher learning for any award.

Signature.....
Researcher

Date.....8/10/2010.....

APPROVAL

I hereby certify that this work was done under my supervision and I have approved it for submission to the university.

Signature -----

Date.....

Robert Kent Kirya

DEDICATION

To my father Mr. Stephen N. Mukundi, my mother Mrs. Priscilla Njeri, and my brothers John Mukundi and Geoffrey Gatheru and my sister Grace W.

AKNOWLEDGEMENTS

My sincere thanks go to the following people;

- Mrs. Azabo and Mr Kirya for constructive guidance during supervision of this work.
- Special thanks go to my Dad and Mum for the never ending effort and words of encouragement to ensure completion of my education. To my dad, words alone cannot express how you have always been willing to help. I have very compelling urge to express my gratitude from deep down my heart.
- The Head teachers of schools contacted during the study for their willingness to offer the necessary information needed by the researcher.
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ABSTRACT

The study was carried out to examine the effects of teachers' attitudes towards learners in the teaching and learning of sciences.

The study was guided by a number of objectives which were to identify teachers' behaviors or actions that encourages learners to pursue sciences, to establish Teachers' behaviors or actions that discourages learners from studying sciences and to examine effects of the different teacher behaviors/ actions on the teaching and learning process.

The study used the case study design. It considered Pioneer Location, Uasin-Gishu District in Eldoret Kenya as its area of study hoping that the findings established in this single division is be a representative of the rest of Kenya.

The study had some major findings which encouraged learners to pursue sciences and they included guiding and counseling, giving clear explanation and relating them to day to day learners experience, giving students regular assignments, encouraging student interaction, striking a balance between theoretical learning and practical advance the learners' psychomotor domain in education, the availability and approachability of a teacher matters.

The research concluded that through their behavior or actions teachers play a great role in influencing learners to either or not to continue studying science subjects. However there are some acts or behaviors which teachers have to be very cautious about on how and where they practice them, because they were cited by some respondents as encouraging while some other respondents viewed them as discouraging.

CHAPTER ONE

INTRODUCTION

1.0 Chapter Overview

This chapter constitutes the following components: background of the study, statement of the problem, purpose of the study, objectives of the study, significance of the study and scope of the study. The chapter explains why the study is to be conducted.

1.1 Background of the Study

The development of science and technology is among the key goals of every country today. Achievement of this goal requires a great deal of scientific knowledge which can be gained either formally or informally in life. The so called developed countries have achieved a lot towards the fulfillment of this goal, but the so called third world nations have a long way to go. The failure of the third world countries to attain this goal is attributed to the insufficient attention given to science education by most stakeholders of the third world nations like Kenya.

In Kampala international university where the researcher is currently a student, he observed that there were only 5 students who enrolled for bachelor of education with science course to train as teachers of physics and mathematics in 2007 March intake, while previously in 2006 august intake, only 2 enrolled for the same course. This raised a lot of questions as to why many people are continuing to avoid sciences subjects.

In the schools where the researcher carried out his school practice, there was no single student taking sciences subjects in 'A' level although all the other students in 'O' level were taking sciences subjects as compulsory. As the researcher was chatting with friends

from different regions, and asked them why they had left sciences, they gave several reasons. However, most of them insisted on two main reasons; the fact within themselves that sciences are difficult subjects and secondly, the behavior or actions of some science teachers who taught them. The research was aimed at throwing some light on the behaviors or actions of teachers that affect the study of sciences subjects.

1.2 Statement of the Problem

Despite the government's efforts to promote science subjects in the country, by even making sciences compulsory from primary school level to secondary school 'O' level, the number of students opting for to pursue sciences in 'A' level is still low and demanding to be increased. However, after the several conversations with his friends, it came to the researchers' notice that teachers were among the causes of the high rates of students' dropping of science subjects before joining 'A' level in the secondary schools.

Teachers are the people who introduce and continue teaching science subjects to the learners all the way up to the levels where the students decide to drop or continue with the science subjects. This means that teachers act as the facilitators of the process that connects the learner to the sciences subjects. The efficiency of this process determines whether the learner likes or hates science subjects hence teachers are among the greatest forces that affect the choice of the learner about sciences. This is why the study aimed at examining what teachers do during this process.

1.3 Purpose of the Study

This study aimed at examining the effects of teachers attitudes towards learners in the teaching and learning of sciences.

1.4 Objectives of Study

The study was guided by the following objectives:

- i) To identify teachers' Behaviors or actions that encourages learners to pursue sciences.
- ii) To establish Teachers' behaviors or actions that discourages learners from studying sciences.
- iii) To examine effects of the different teacher behaviors/ actions on the teaching and learning process.

1.5 Research Questions

The study was guided by the following research questions:

- i. What are the teachers' behaviors that encourage learners to pursue science subjects?
- ii. What are the behaviors that discourage learners to pursue science subjects?
- iii. How do teachers' behaviors affect the learners' study of sciences?

1.6 Scope of the study

The study covered Pioneer Location, Uasin-Gishu District in Eldoret Kenya. The location covers a bigger area of Langas, Pioneer, Kapseret, Mwirutu, Racecourse and Kipkaren divisions. Uasin-Gishu district is generally a one of the highland of Kenya with gentle slopes and mostly flat land. The major economic activity of the people is agriculture with

some trading activities respectively. The major dominant religious sects are Catholics followed by Protestants. The commonest tribes are Kalenjin, the Kikuyu, Luyha and Luo.

1.7 Significance of the study

- The study will inform teachers about their behaviors and actions which discourage students from pursuing sciences subjects and science careers.
- The research will inform teachers on the behaviors and actions which encourage learners to pursue science subjects and careers.
- This study is expected to inform teachers of the effect of their behaviors and actions on the learners hence it should enable them to change so as to encourage more learners to start pursuing sciences subjects in 'A' level.
- The study will also expose to the teacher training institutions, those teachers' behaviors that should be discouraged right from the start of teaching profession.
- Since most people are avoiding sciences nowadays, scientific knowledge is lacking among most people hence this study is also expected to improve the scientific literacy of the future generations.
- The study is also expected to save the country a lot of money which is used on importing scientific and technological knowledge in terms of finished goods and skilled manpower.

CHAPTER TWO

LITERATURE REVIEW

2.0 Chapter Overview

This chapter reviewed the related literature under the objectives as subtitles; Teachers' Behaviors or actions of teachers that encourage learners to pursue sciences, Teachers' behaviors or actions that discourage learners from studying sciences, Effects of teachers' behaviors on students' science of study.

2.1 Teachers' Behaviors or actions that encourage learners to pursue sciences.

There are several teacher's behaviors and actions which really inspire learners to continue to studying science subjects and careers. First, teachers should exhibit a vast amount of content knowledge and model enthusiasm for their subject; encourage their students (Alsop S. Bencze L, pedretti E (2005).

According to Bybee (1978) enthusiasm is an important attribute of an ideal teacher. It is infectious and hence it can be very easily transmitted to the learners. The situation in Pioneer Location is suspected to lack teachers with this character because of the high number of untrained teachers found in a number of schools. This study will proceed to verify if it is true.

Tobin and Fraser (1990), asserted that good teachers have good management strategies that facilitate student engagement. Classrooms of such teachers are relaxed, with few occurrences of misbehaviors. Students work well and there is easy flow of activities from one activity to the other thus no time wastage and efficiency is maintained. Ever since the

prohibition of corporal punishment in schools in Kenya indiscipline has increased among students and consequently there is expected to be a major problem in class control.

According to Tobin and Garnett (1988) good teachers find ways to enable students relate science to the world outside the classroom. According to Alsop, Bencze and Pedretti, (2005) a certain physics teacher had his students use sound meters in a laboratory to measure the decibel level of a television set so as to become familiar with the meters scales. Then he took the class to a remote corner of the school ground where the students screamed and shouted one at a time, as loud as each could while the others measured the sound intensity level. Africa suffers from a major problem of unstable curriculum which makes it difficult for teachers relate content to real life situations. This study will proceed to find out how teachers manage this problem.

According to Stake and Easley (1978), a lot of teachers emphasize on facts about science and provide no opportunity for the learners to develop high level thinking skills. According to Deacon (1987), Garnett (1987) and Treagust (1987), teachers should encourage active engagement and emphasize understanding of science content rather than cramming of facts. They provide numerous occasions for students to be mentally active and to assume responsibility for their own learning. According to Colburn A. (2003) says, "Students must determine questions to investigate, procedures to address their questions, data to generate and decide what the data means". Teachers should thus avoid spoon feeding students with content and the answers to every question. Pioneer Location teachers are (some of them if not majority) part timers. Therefore they have a great load

of work to handle if they have to teach in more than one school, and this may force them to teach very fast so as to cover the syllabus, giving students no time during lesson to develop their high thinking abilities. On the other hand this may leave so much undone prompting the learner to go and research on what is not clear, an act which may promote their thinking abilities. This study will proceed to find out the nature of this situation.

Teachers should differentiate instruction in order to meet the diverse needs of their students (Tobin & Fraser 1990). Teachers who cater for individual differences among learners inspire them to pursue sciences. Teachers need to know that learners differ in many aspects and to be able to accommodate all these students in the same class and attend to each individual's problem and weakness.

2.2 Teachers' behaviors or actions that discourage learners from studying sciences subjects.

There are several behaviors and actions that put off students from sciences. According to Angela (2007) on her study on how professors discourage women of color, like black and Indians, from sciences, cited several discouraging behaviors. These included: professors being inaccessible, professors not caring about the students, but only about science, and asking difficult questions without first establishing a rapport whereby the students think they are being trapped. Although most professors do this unaware they end up pushing out potential science students from the field. Napell (1976) identified six common non-facilitating teaching behaviors. These included insufficient wait time where teachers do not give students enough time to internalize what other students or the teacher have just

said but instead the teacher becomes a nonstop talker; rapid rewards whereby teachers accept or deny a student contribution very fast without giving the other students a chance to express themselves; programmed answers in which teachers ask questions which lead a student to the answer; non-specific feedback where teachers pose questions which are not directed to one specific student for example, “do you understand class?”; teachers’ ego-stroking and classroom climate where the teacher assume that the learners have understood; and lastly fixation at a lower level of questioning where the learners get used to a teachers teaching way and methods of questioning. If persistent, these behaviors end up discouraging the learners from pursuing sciences further.

A study that was carried in African countries (Kenya being among them) by the Female Education in Mathematics and Science In Africa (FEMSA,1996), revealed several areas in which teachers contribute to hence fostering problems for girls’ science study, these include: attitudes of teachers such as traditional, conservative beliefs that mathematics and science are for the male; poor expectations of girls performance where teacher expect that girls will always perform poorly compared to boys; classroom dynamics where girls are underrated and continually harassed by their male schoolmates and also some male teachers; insensitive teaching which does not recognize the different out-of-school experiences girls bring to the study of science or anxiety girls undergo when studying topics like reproduction, or when asked to use some unfamiliar equipments or cope with live specimen, and lastly didactic approach of teaching used by science teachers which most respondent like the parents, regarded as inappropriate methods of teaching science.

The extreme effect of all the above practices is the discouragement of very potential scientists in the making from the field.

2.3 Effects of teachers' behaviors/ actions on students' process of studying science subjects.

According to Napell (1976) narrated that in students where teachers gave enough 'wait time' significant effects were observed: the length and number of unsolicited but appropriate responses increased, failure to respond decreased and the incidences of student to student comparing of data increased. The students felt supported by the teacher and hence grew to like him and the subject as well. Angela (2007) further urges that 'science has a rich history of service to humanity'. Teachers sometimes may think that it goes without saying that the students are aware of some concepts which is actually the opposite of the reality of the matter. The teacher may further to build knowledge on the unfamiliar concepts to the learner. This acts makes the learner view sciences as abstract and they just wish that time to drop the subject comes very fast.

Presenting content using as many teaching methods is very crucial. According to American Psychological Association (APA, 1995), this encourages the learners to think about thinking, facilitate creativity and critical judgement of self-awareness. Hence teachers should employ as many teaching methods as possible to enable students understand better thus create curiosity in them to pursue sciences. And FEMSA (1996) said that "teachers' comments determine how much the learners will grow to like sciences". For instance a teacher might be reading out the marks of students in test they

had done. Then, reads John 70%, Grace 55% and comments by saying John you did not do well and congratulates Grace. This means that the teacher is satisfied by Grace's performance and does not expect her to perform better than John. These words may make Grace not to work any harder since according to the teacher she has performed. This makes girls to form a low opinion about their science abilities and this might make them feel as if they are just in class to accompany the boys and may end up hating sciences due to the teachers' words.

Creating a good social relationship with learners is vital for any teachers of science. Pearson (2006) said that teachers should take like 10 minutes at the start of the lesson, answering students' questions of all types including out of the subject context. This makes the teacher develop a free culture talking in the class. When the learners are free with the teacher, then they will tend to ask anything they don't understand during the lesson.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Overview

This Chapter presents the sampling procedure, data collection, data analysis, study area, instruments of data collection and the methods used to analyze data in this study.

3.1 Research Design

The study used the case study design. It considered Pioneer Location, Uasin-Gishu District in Eldoret Kenya as its area of study hoping that the findings established in this single division is be a representative of the rest of Kenya.

3.2 Research Population

This study was conducted among the students of Pioneer division. The Study target a population of 456 respondents within a division. The common tribes are Kalenjin, Kikuyu, Luyha and Luo.

3.3 Samples and Sampling Procedure

The sample schools were selected by simple randomly in Pioneer Location. The researcher considered the accessibility of the schools. Once in the schools the researcher then selected 5 students from each class. The researcher also selected two science teachers for interviews in each school. He ensured gender balanced in the whole process.

3.4 Research Instruments

The research study employed questionnaires as research instruments in the data collection process among students and oral interviews when collecting data from the teachers.

3.5 Research Procedure

On approval of the research proposal, the researcher obtained a letter of introduction from faculty of education and then proceeded to the field. In the field, the researcher also obtained permission from the division authorities to carry out the research in the schools of Pioneer Location division. Having been permitted, the researcher proceeded in the field and started moving from one school to another collecting the data. In each school, the researcher sought permission first from the school administration and then started interacting with the learners and teachers. The researcher chose the sample as planned, and then administered the questionnaires to the students to fill and interviewed the teachers as well. After gathering of data from the field, the researcher scanned and cleaned it, then went ahead to analyze and interpret data so that a fair draft was printed for submission.

3.6 Data Analysis

The researcher employed the descriptive statistics to analyze data by coding, tallying, frequencies and percentages were presented so that the bar graphs and pie charts were illustrated for clear interpretation of data.

CHAPTER FOUR

PRESENTATION, INTERPRETATION AND DISCUSSION OF THE FINDINGS

4.0 Chapter Overview

This chapter is a presentation, interpretation, and the field results. The results were presented in tables and charts

4.1 Background Characteristics of the Respondents

The respondents in this study were students and teachers and were both male and female. They were selected randomly from 10 secondary schools in Pioneer Location, Uasin-Gishu District in Eldoret Kenya as shown in table 1 and table 2.

Table 1 Showing the total number of student respondents in the different schools

School	Boys	Girls
	No.	No.
Wareng Sec school	6	12
MOAS.	16	8
Elgon View girls sec school	0	23
Top Rift Sec School	10	7
Racecourse Sec School	12	8
Umoja Sec school	9	9
Eldoret Harambee Sec school	14	10
Uasin-Gishu High school	12	11
Testimony high school	12	7

Mwiruti Sec school	11	10
Total	102	105

Source: Field data (2010)

The researcher interviewed mainly science students and observed that majority were female. From Table 1, it can be seen that the percentage of female students was high. Generally more female than male respondent to the questionnaires provided. It was encouraging since most of those students who were given the questionnaires responded positively to the questions asked.

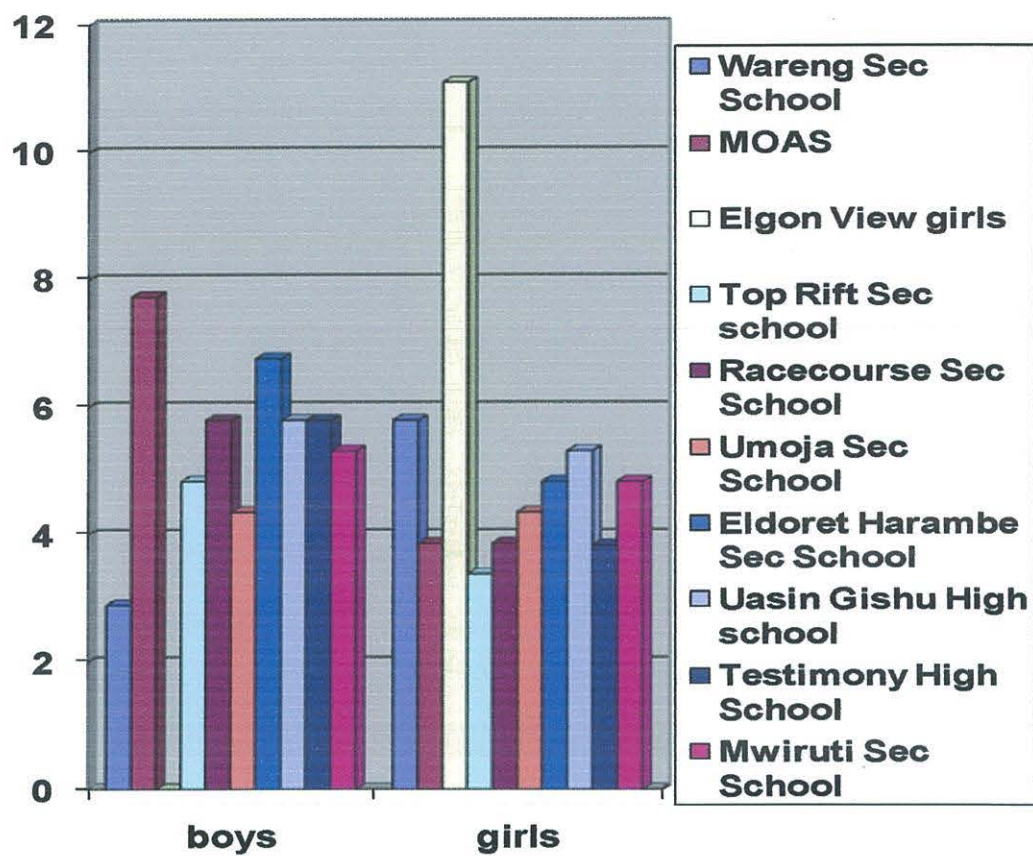


Figure 1. Showing the percentage of student respondents per school

The graph 1 shows the respondent among students in different schools. It can be seen that the number of female students' respondents is high compared to male students in

most schools. Even though there is remarkable interest among female students in responding to the questionnaires.

Table 2 Showing the total number and percentage of teacher interviewees in the different schools

School	Males	Females
	NO.	NO.
Wareng Sec school	3	1
MOAS	1	2
Elgon View girls high school	1	1
Top Rift Sec School	2	0
Racecourse Sec School	1	1
Umoja Sec school	2	0
Eldoret Harambee Sec school	2	0
Uasin-Gishu high school	3	0
Testimony high school	1	1
Mwiruti Sec school	1	1
Total	17	07

Source: Field data (2010)

Table 2 shows the responded of teachers to questionnaires provided. It can be seen that male teachers responded more than female teachers. This also shows that more male teachers teach sciences than female teachers thus their willingness to answer the questionnaires.

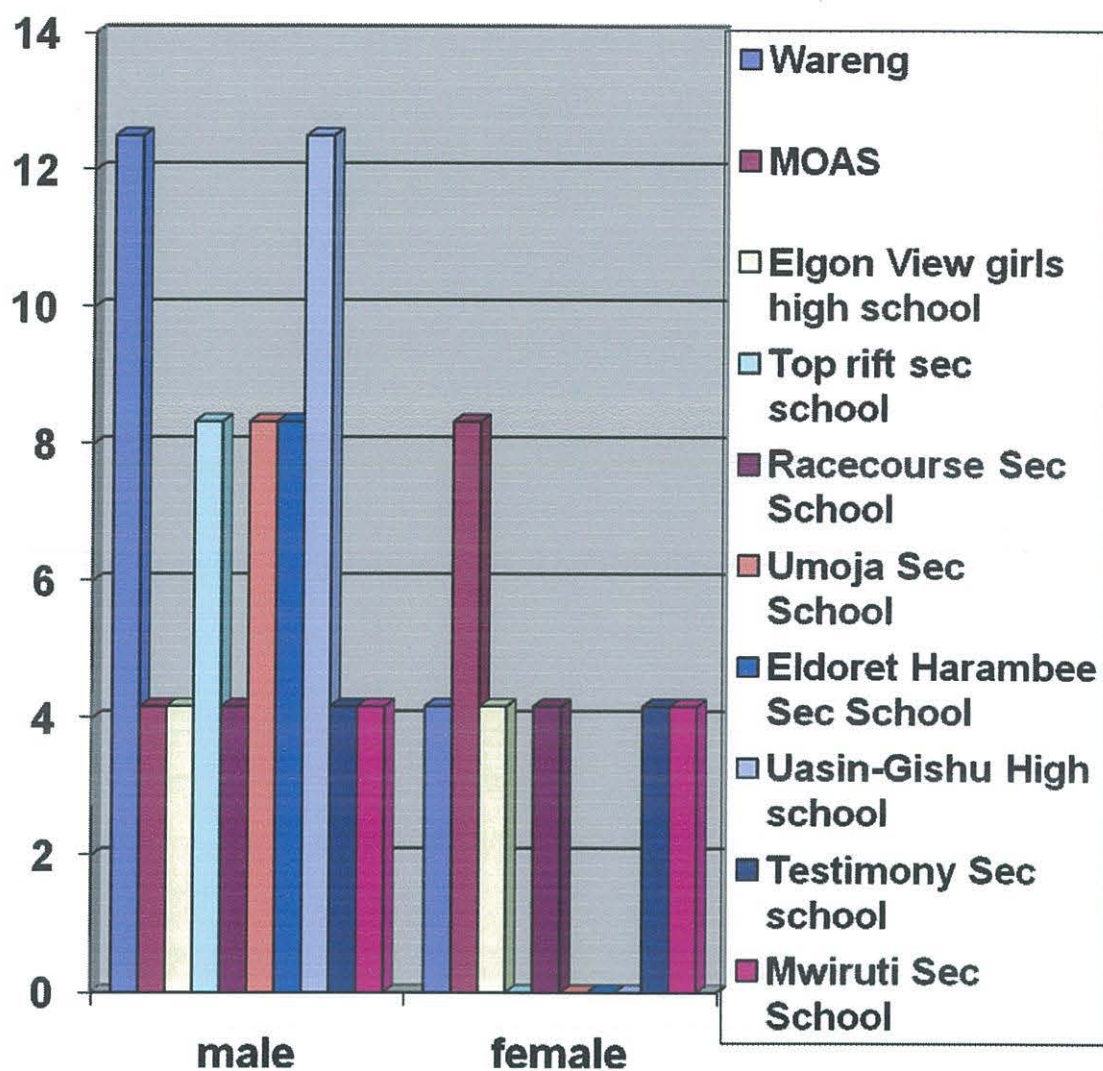


Figure 2 showing the percentage of teachers interviewees per school.

The figure 2 shows the responded for teachers from different schools. It can be seen that more male teachers responded than female teachers.

4.2 Teacher behaviors that encourage learners to pursue sciences

The respondents contributed the following behaviors or actions as encouraging ones:

4.2.1 Guiding/ advising/ counseling learners

A good number of student respondents from all schools cited that they liked science because their teachers advised them on the importance of sciences. Most of the respondents concentrated on two advices: first, that science careers are marketable hence one is not going to move around so much looking for a job. And second, If one takes sciences, he/she has a better chance of getting a government sponsorship in the university education.

4.2.2 Good Explanations

The learners said that they liked teachers who endeavored to explain science concepts briefly and clearly, and teachers who did not beat around the bush so much, before coming to the main point. The students cited that they enjoyed lessons in which teachers gave relevant examples that are familiar to them. Actually one girl wrote that she did not like lessons whereby teachers gave complicated examples of things which she had never seen or even heard about.

4.2.3 Giving and Marking Assignments

The students appreciated teachers who gave them assignments after each lesson on what they had just learnt in that lesson. They were even more pleased and encouraged by those teachers who made it a duty mark the assignment of each student and made corrections of

the assignment before teaching anything else in the next lesson. However the learners were not encouraged by teachers who gave them some research work which was so difficult to find in the available reference materials.

4.2.4 Encouraging Group Discussions

Some learners asserted that they were very pleased and encouraged by teachers who gave them group work. They were even more encouraged by teachers who made it a point to come and help the learners in their groups on what they cannot manage as students, even as a group. They felt a great concern and care from the teacher.

4.2.5 Carrying out Practical Lessons

Majority of the respondents were inspired and encouraged by teachers who balanced theoretical and practical learning. Students wrote that they liked teachers who carried out demonstrations just after teaching the theoretical concepts. They also enjoyed being allowed to interact with the apparatus as much as possible.

4.2.6 Being approachable/ available

Students, especially the female ones, were greatly inspired by teachers who were easily approachable, and who were willing to answer students' questions at any given time. Actually one student said that she liked sciences because her teacher was always cheerful and welcoming. Availability was not highly supported point which might imply that science teachers are not very available to the students; however the few students who cited this point wrote that they were pleased and inspired to pursue sciences further by

science teachers who were always available to solve their outstanding academic problems as well as other personal problems which need some mature guidance.

4.2.7 Rewarding Learners

The respondents asserted that they liked subjects in which if they performed well, they were congratulated or recognized. Some said that at the end of the term they were given books, pens or even money as presents for their better performance in some specific science subject hence this was among the reason they liked science subjects.

4.2.8 Encouraging Interaction between Students and Schools

Learners said *“that they liked subjects which opened chances for them to go out and meet with students from other schools”*. They were very impressed teachers who organized science fairs in which the students from different schools could challenge one another in different science subjects. Science clubs which were started and supported by teachers were also cited as a great tool to interact students. The students learnt a lot from these programs.

4.2.9 Conducting lively lessons

A number of respondents said *“We enjoyed and like lessons in which everybody is cheerful. we like funny teachers who cracked jokes during class time and make us learners to laugh”*. They also liked teachers who allowed students to interact during class time. A teacher interviewee said that his teacher could create some sort of curiosity by telling the class an application of the concept he is going to teach about before he

commenced teaching. This kept the students awake and following as they tried to find out how this concept was applied to that situation.

4.2.10 Allowing Foreign Instructors

This aspect was cited in two schools whereby some science teachers could allow some foreign teachers to teach specific topics. The teachers said that they gave out some topics which they were not very conversant with, to other teachers who were good in those topics. The students said that they really enjoyed the change and this made them to love science more.

4.2.11 Applying Technology in Teaching

One of the student respondents cited that his teachers used video shows when teaching. He said that he really enjoyed such lessons and that this had made him to like the subject so much.

4.2.12 Living an Improving Personal Life

One student said that he was so impressed by the life his teacher lived and that is why he wanted to become a science teacher. Another one said that he was so encouraged by his teacher who was by then studying his masters' degree.

4.3 Teacher behaviors or actions that discourage students from studying science subjects

In addition to the encouraging behaviors, the respondents and interviewees also contributed several discouraging behaviors and acts that are practiced by teachers, these included;

4.3.1 Punishing students inappropriately

The cited punishments included: caning students excessively for, failing a test or exams, failing to answer a question in class and for late coming without first establishing why the student was late. Another one was instructing students to wash toilets or classrooms. Most of the learners proposed that teachers should guide/ counsel/ advice them instead of punishing them. Other acts included using abusive language on the learners, being insensitive about students' feelings such as sickness, tiredness or hunger and some teachers being ever gloomy all contributed to corporal punishment. One of the students said that she does not like sciences because science teachers are ever sad and that she does not want to live such a miserable life.

4.3.2 Poor Teaching

Under this the respondents cited acts like teaching too much content within a short time or teaching too fast, teaching too slowly such that the teacher fails to finish the syllabus within the stipulated time, leaving topics incomplete and then proceeding to the next topic, failing to give students notes and instead referring them to other classes or to

textbooks, teaching the lower classes poorly and instead concentrating on the candidate classes thereby creating a poor foundation of science in the lower classes.

4.3.3 Discriminating students

Respondents who supported this point said that teachers favored only the bright students, rewarded students in a biased manner, provided extra coaching to only the students who had money to pay the coaching, send some students out of class for committing simple mistakes, read out students' marks to the other students and distributed students into different streams depending on their performance whereby poor performers were put in the same class, middle performers in their own, and good performers in their own classes.

4.3.4 Showing incompetence in front of the learners

The respondents said that some teachers exhibited some discouraging behaviors such as: poor language use in and out of class, poor content mastery, failure to answer questions from students, poor class control. This made the learners see the teacher as unfit to be in front of them, a perception which is bound to the comprehension of the subject matter.

4.3.5 Lack of self discipline

Concerning this behavior, were such aspects like poor dressing, having sexual relationship with students, demanding money so as to help learners in academic issues, bragging or being too proud before the learners, taking drugs like alcohol and then start misbehaving in front of the learners, failure by some teachers to measure the words that come out of their mouths, and inappropriate behaviors between fellow teachers.

4.3.6 Giving ill advice to students

The respondents cited several discouraging statements from teachers of science and of other subjects. These statements included: sciences are difficult and are only for bright students, scientists run mad, scientists (such as doctors) deal with dead bodies, sciences subjects and careers are for male students, and that scientists are people who are going against the will of God.

4.4 Effects of the teacher behaviors/ actions on the students' process of studying science subjects.

The several actions and behaviors mentioned above affect the learners in various ways, some of which are positive while others effects are negative. It should be realized that a behaviors may affect a certain Lerner negatively while at the same time it affects another leaner positively. To start with, guiding and counseling a student makes him/her feel a sense of caring from the teachers. Teachers should endeavor to advice students just like their own children. Good career guidance can make the student to think twice about his/her decisions. Giving a student an outline of the various careers available in the field of science, the salaries offered for these jobs, the prestige involved in those careers and the fun involved in doing the jobs, can go a long way in creating an intrinsic motivation, desire and ambition in science subjects and careers in the student. However, Giving ill and terrifying advice or comments about sciences to learners was cited as a major problem among teachers. Such advice makes the learners to form a very bad perspective about sciences and discourages them from pursuing more science knowledge.

Giving brief and clear explanations enables the learners to understand the subject better and easier. Teachers should be precise and straight forward when putting across points to students in class. They should in the first place use examples which are within the environment of the learner, before proceeding to complicated abstract ones. This view which was suggested by one of the teacher interviewee is in line with the world wide view of teaching from the known to the unknown. It helps the learner to correlate the already knowledge in their minds with the new knowledge, hence creating a better understanding of the subject. The student ends up developing a passion for the science subject.

If students are given an assignment after every lesson on the content that was covered in the lesson, they get to practice what they have learnt. One of the student respondents wrote that she liked biology because her teacher always gave her some assignment after every lesson which helped her to remember what the teacher was teaching. Therefore assignments enhances the learners' prior understanding and creates a lot of questions in the learners mind, because as he/she tries to do the assignment he/she comes across some concepts which he/she did not comprehend well. This questions need to be answered if the learner is to successively complete the assignment. He/she might seek answers from friends or revise the teachers' notes or else other reference materials and sometimes may choose to go back ask the teacher. Such students end up discovering some facts in science which really encourage them to continue studying science. Marking the students' work encourage him/her so much on seeing that the teacher is concerned and cares. Corrections

to assignment should be before proceedings to any other content because it enables the learners discover their mistakes and correct them.

Encouraging student interaction goes a long way in promoting corporation and sharing of knowledge among learners. This actually makes the learners to view scientific knowledge from different points of view making the understanding of sciences easier and broad. It also creates a competition in thinking as each student tries to prove his or her point right. In addition the students encourage one another since if they see their friends succeeding in several scientific aspects they feel motivated to try and become like them. One of the teachers' interviewees said that group discussions can be used to help students who have short concentration periods to study for longer periods.

Striking a balance between theoretical learning and practical advance the learners' psychomotor domain in education. Psychologists believe that the more senses of the learner you can capture during teaching, the better the understanding. If one does something by himself/herself, it is very hard to forget it unlike when he/she just hears sees it. Furthermore there are a lot of fun and interesting phenomena involved in performing scientific experiments because the learners get to see the unique scientific drama as extra ordinary things unfold during the experiments. This creates a curiosity in the learners to venture more into science subjects.

The availability and approachability of a teacher matters so much, if the learner is to gain interest in what the teacher is teaching. Learners sometimes associated a subject taught by

a teacher with the teachers' way of life. Being welcoming helps the learners to seek clarification on whatever they do not understand and even seek guidance in aspects of life where they feel oppressed. Helping a student makes him/her to like you and liking you, is appreciating most of the things you do in life one of which is teaching science, hence the possession of this quality can really encourage more students pursue sciences.

Rewarding a student who has done a good thing makes him/her feel appreciated and given a go ahead to do more. Remember that not only excellent performance should be rewarded but even the slightest improvement of poor performers should be recognized if teachers are to encourage as many students as possible to pursue sciences. Rewarding only the better performers gives the poor performers no incentive and makes them feel out of place.

Punishing a student is inevitable sometimes however; there are incidents where it is avoidable. According to one student respondent, "teachers should think of what they feel when they caned and they stop caning us" Human beings hate anything that inflicts pain on them therefore, if a teacher punishes a student then he/she is promoting hatred between him/her and the student. Consequently the student might end up disliking the science subject that the teacher teaches. Majority of the student respondents preferred counseling to punishing.

The use of the poor methods of teaching has greatly pushed many potential scientists out of the field. According to a teacher interviewee, this problem has been accelerated by the

scarcity of qualified science teachers in the country. This is also because the more students continue avoiding sciences the less the number of people who end up training as science teachers. The use of these poor methods triggers very little understanding of the content matter by the learners, hence they end up considering science subjects as abstract. The use of technology in teaching helps the learners to understand the content better, and realize importance and application of scientific knowledge in their lives, thus pursuing it is not a loss.

Being so inhuman to students as a science teacher creates a bad perspective about scientist in the learners mind. The student starts to associate science subjects with such inappropriate acts and becomes demotivated to pursue sciences any further. Discriminating learners pushes this problem further as they feel completely unwanted. Some of them are very sensitive and just wish that the time to dropping the subject comes faster so that they may get out this problem.

CHAPTER FIVE

SUMMARY OF THE MAJOR FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 Chapter Overview

In this chapter, the discussion, conclusion and the recommendations made from the study are presented. The study used descriptive methods of data analysis

5.1 Summary of the Main Findings

5.1.1 How teachers behaviors encouraged learners to pursue sciences

The research findings showed that teachers behaviours has an impact on their academic performance because of the following factors, guiding and counseling learners, good explanation, giving and marking assignment, encouraging group discussions, carrying out practicals, being approachable, rewarding learners accordingly, encouraging interaction between students and the school, conducting lively lessons, allowing foreign instructors, applying technology in teaching and teachers' living an improved personal life. The results of concurrent and lagged analyses examined teachers' attitudes towards learners and the relationships between students' perception and their academic performance in sciences.

The research findings revealed that, 195 respondents which is equivalent of 84.4% the total sample size perceive teachers' attitude encourages the teaching and learning of sciences.

Similar results by Tobin and Fraser (1990), asserted that good teachers have good management strategies that facilitate student engagement. Classrooms of such teachers are relaxed, with few occurrences of misbehaviors. Students work well and there is easy flow of activities from one activity to the other thus no time wastage and efficiency is maintained. Ever since the prohibition of corporal punishment in schools in Uganda indiscipline has increased among students and consequently there is expected to be a major problem in class control.

Similarly, students suggested that teachers' perception of everyday life on sciences and its importance had a positive impact. This was also emphasized by Stake and Easley (1978), a lot of teachers emphasize on facts about science and provide no opportunity for the learners to develop high level thinking skills. According to Deacon (1987), Garnett (1987) and Treagust (1987), teachers should encourage active engagement and emphasize understanding of science content rather than cramming of facts. They provide numerous occasions for students to be mentally active and to assume responsibility for their own learning. This implies that majority of the students see the positive teachers behaviours that encourage the learning and teaching of sciences and a booster to them in order to pursue sciences.

5.1.2 How teachers behaviors encouraged learners to pursue sciences.

36 respondent, which is equivalent to 15.6% of the respondent suggested that there are some teachers' behavior that discouraged students from taking sciences.

The respondents gave different opinions on to why the perceived teachers' behaviours discouraged them from taking sciences, which were similar to Napell (1976) who identified six common non-facilitating teaching behaviors. These included insufficient wait time where teachers do not give students enough time to internalize what other students or the teacher have just said but instead the teacher becomes a nonstop talker; rapid rewards whereby teachers accept or deny a students contribution very fast without giving the other students a chance to express themselves; programmed answers in which teachers ask questions which lead a student to the answer; non-specific feedback where teachers pose questions which are not directed to one specific student for example, "do you understand class?"; teachers' ego-stroking and classroom climate where the teacher assume that the learners have understood; and lastly fixation at a lower level of questioning where the learners get used to a teachers teaching way and methods of questioning. If persistent, these behaviors end up discouraging the learners from pursuing sciences further.

5.1.3 The effects of the different teacher behaviors/ actions on the teaching and learning process

The research revealed that behaviors/ actions on the teaching and learning process affect students directing in their choice of subject. This was noted that, guiding and counseling students' makes them feel a sense of caring from the teachers. Teachers should endeavor to advice students just like their own children. Good career guidance can make the student to think twice about his/her decisions. Giving a student an outline of the various careers available in the field of science, the salaries offered for these jobs, the prestige

involved in those careers and the fun involved in doing the jobs, can go a long way in creating an intrinsic motivation, desire and ambition in science subjects and careers in the student.

5.2 Conclusion

Through their behavior or actions teachers play a great role in influencing learners to either or not to continue studying science subjects. However there are some acts or behaviors which teachers have to be very cautious about on how and where they practice them, because they were cited by some respondents as encouraging while some other respondents viewed them as discouraging.

5.3 Recommendations

1. Teachers should frequently attend scientific seminars or enroll for in-service training courses so as to improve on their methods of teaching. This is because new theories on methods and strategies of teaching and learning are emerging day after day, and are proving to be more efficient than the some old ones. Science teachers should also frequently visit the internet, read scientific journals or read any other reference materials to enable them discover the new developments in the scientific and teaching fields.
2. Punishment should be the last thing that a teacher resorts to if he/she has to help a student who is on the wrong. This should be after trying everything else and it has failed. Punishment is most likely to have a long lasting effect on the learner which might prove so hard to forget. Teachers thus should concentrate on guiding and counseling learners.

3. The ministry of education should weed out unqualified as well as poor teachers from the field. It should get serious on some private schools which are notorious in employing any type of teacher who can just teach.
4. Scientific facilities such as facilitated science laboratories should be emphasized as a key requirement in starting any school in the country. This will help science teachers to teach sciences subject more practically.
5. School administrators should also pay teachers well. This will limit the movement of teachers from one school to another as they seek more money. Teachers will therefore be available to the learners for them to ask for any academic help or guidance in their personal problems.
6. School administrators should ensure that all classes are equally attended and that the syllabus of every class is covered within that term, year and class. This is because most teachers forget that concentrating on the candidate classes when those candidates have been poorly taught in the previous classes is almost in vain. This can reduce the overloading of the candidate students and avail to them enough revision time for their final exams

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APPENDIX I

Research Questionnaire

Dear Respondent,

I humbly request you to participate in this research entitled 'encouraging more students to do sciences'. The study is purely for academic purposes, thus it will not be disclosed in any way for any other cases. It is a partial requirement for the award of Bachelors Degree in science education at Kampala International University to the researcher. . Please help by answering the following questions as honestly as possible

NOTE: *All information to be availed to me will be treated with maximum confidentiality.*

Questions.

1. a) School.....

b) Class.....

c) Sex Male ☐ Female ☐

2. Do you do sciences? Yes ☐ No ☐

3. Name some good things that your science teachers do or did to you or to your friends.

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4. How did the behaviors you named above affect your study of science subjects?

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5. Name some bad things that your science teacher do or did to you or to your friends.

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6. How did these bad things you named above affect your study of science subjects?

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7. In your opinion, what should the teacher do in order to encourage you and your friends to continue studying science subjects?

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APPENDIX II

Interview Guidelines

1. Which subjects do you teach?
2. What teachers' behaviors encourage students to pursue sciences further?
3. How do you think these encouraging teacher behaviors affect the learners' perspective on sciences?
- 4) Are you aware of any teacher behaviors that discourage learners from studying sciences? If yes please give them.
- 5) What do you think is the effect of these discouraging teachers' behaviors among teachers on the learner?
- 6) In your own opinion what should teachers do so as to encourage more students to do sciences?
- 7) How can the teachers who practice these discouraging behaviors be helped to change?



**KAMPALA
INTERNATIONAL
UNIVERSITY**

Ggaba Road, Kansanga P.O. BOX 20000 Kampala, Uganda.
Tel: +256 (0) 75 2 934526 Fax: +256 (0) 41 - 501974
E-mail: admin@kiu.ac.ug Website: <http://www.kiu.ac.ug>

**FACULTY OF EDUCATION
Office of the Dean**

Tuesday, July 7, 2009

TO WHOM IT MAY CONCERN

RE: SAMWEL KIMANI NJOROGI

REG. No. BSE/14443/62/DF

This is to certify that the above mentioned person is a student of Kampala International University in the Faculty of Education pursuing a Bachelors Degree in Sciences. He would like to carry out his course work research in your area.

Any assistance accorded to him is highly appreciated.

Thank you.

DR. S.A. OYEBADE

DEAN, FACULTY OF EDUCATION