

**FACTORS AFFECTING ENROLMENT AND PERFORMANCE IN PHYSICS AMONG
SECONDARY SCHOOL STUDENTS IN MASABA NORTH SUB COUNTY IN
NYAMIRA COUNTY**

By

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DECLARATION

I declare that this research is an original work done other than indicated within the text and has not been presented for an award of a degree in any other university.

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L40/10330/2018

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Signature

Date

This research project has been submitted with the approval of my supervisor.

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.....

Signature

Date

DEDICATION

To my beloved parents for supporting my education and my course mates for their unwavering assistance during the project.

ACKNOWLEDGEMENTS

Without the contributions and sacrifices made by various individuals this research project would never have been realized.

First, I am thanking the Almighty God for granting me good health and a chance to complete this project.

Secondly, my supervisor, **Mr. Dan Oduor Oluoch** who has been a supportive figure and without the support he offered I would not have completed the research.

Thirdly, I acknowledge the Library department as it gave me an opportunity to use the University reading materials and internet information; hence had adequate data for the study.

Lastly, my course mates and friends had been there and ready to assist me whenever needed.

ABSTRACT

The aim of the study was to investigate the factors impacting the enrolment and performance in physics among secondary school students in Masaba North Sub County in Nyamira County. Stratified random sampling method was used in this study from which members of every stratum had an equal chance of selection. A representative sample of 50 participants was selected from the total population of 450 people that include academic staff, middle staff and support staff members as well as students. A qualitative research design was applied in the research where both primary and secondary data was collected. Self-administered semi-structured questionnaires were used in data collection while frequency tables were used in data presentation. Frequency distribution tables were then applied in the analysis of every qualitative data gathered. The respondents studied aged between 15 and 25 years were twenty, while those aged 25 to 35 years were ten. Five of the sampled participants were aged between 35 and 45 years and another five between 45 and 55 years. Similarly, 25 participants acknowledged that the department directed messages to the respective audiences while 10 of them explained that department never directed messages to the relevant target group. From the study 26 participants agreed that the best communication channels were used while 4 of them did not believe on the perspective. 25 of the studied respondents disagreed with the observation that communication barriers might have been causing poor communication with 5 of them believed that it was a significant causation.

It was recommendation organizations develop communication strategies to guide messages, the respective audience, medium used and the feedback given. An organization has to remain conscious of every challenge faced in communication and work towards reducing its impacts by constantly checking and understanding through the feedback offered. Online engagements have become the behavior of many people regardless of their age and background with the search of new media for information and socializing purposes being core. The researcher recommends future studies to be conducted with the aim of exploiting the application of effective communication approaches as public relational tools. Communication has been observed as an essential organizational practice regardless of their size.

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CHAPTER ONE

1.0. INTRODUCTION

1.1 Background

Amutabi (2003), explains education as the core pathway through which upward social mobility can be achieved. In most developing countries Kenya included, most people live still below the poverty line. For such persons, the educational return remains as the major change agent for their livelihood (United Nations Development programme-UNDP, 1994). However, in examination-based education systems, an individual's performance in the administered exams becomes the main deterministic aspect for individuals moving up the social ladder as well as enjoys most of the available but limited opportunities. The national exams are highly competitive at the apex of secondary education in Kenya and in other exam-based educational systems (Khatete, 1995). Government subsidies characterize the selection for those joining state institutions of higher learning among other mid-levels colleges if at all their mean grade score in Kenya Certificate of Secondary Education (KCSE) is C and above (KNEC, 2010& MOE, 2009). On completing their training, government sponsored individuals have high chances of being absorbed in some of the highly competitive national and global job market. All stakeholders such as the government, parents, the students and their teachers are interested parties on KCSE performance. Science subjects have high manifestation of vicious competition with a case study of Physics based on its apparent but significant contribution towards industrial and technological advancements. Such contributions are largely pegged on the accomplishment of the Millennium Development Goals (MDGs) and Kenya's Vision 2030. Physics has for a long time been understood as one among the oldest and perhaps the most advanced science (Keith1996).

Considerably, physics addresses the most essential queries about the physical universe's nature such as what nature is, what it's made of and its fundamental forces. It also avails the underpinning for every other physical science. The „laws of physics „as commonly known have been the eventual description of each physical system grounded on the physical universe's laws (Nathan et al 1995).

Physics and its development is characterized by two dominant themes; matter and energy on one side and the quest for order and patterns. These themes remain the primary concern of secondary school physics. Nearly in every life aspect basic concept like heat, pressure and matter are encountered; hence helpful in advancing our lifestyles. It is extremely unfortunate that most of the young scientist particularly rural dwellers have favored Chemistry and Biology at the expense of Physics (Iraki, 1994). Concerns on the reasons as to why the young scientists find physics not interesting, the impacts of their behavior, understanding on whether learning the subject is enjoyable or not are important. Similarly, getting to know if the young scientists understand the concepts as well as principles imparted in physics and the relevance of physics in some of their future plans remains of significance.

One very important reason why physics form part of the curriculum all over the world is due to its ability to give personal intellectual and physical skills, knowledge and value to the learner. In learning physics, students acquire process and manipulative skills that enable them to predict accurately the outcome of various events such as the occurrence of the eclipse, effect of gravity and other forces and phases of the moon. A learner equipped with a physics background has the ability to think both deductively and inductively and approach new situations with a high degree of precision and accuracy. To achieve millennium development goals (MDGs) and realize vision 2030, quality teaching of physics to more young learners has become even more critical. It is with this in mind that central province secondary school heads association came up “effective 40” program to effectively manage the 40 minutes lesson and hence improve performance in all subjects physics included.

1.1 Statement of the problem

Performance in sciences has been one of the major concerns raised by the Kenyan Government and other stakeholders in the education sector especially in physics. The poor performance trend has become distinct in most rural areas such as Masaba North Sub-county in Nyamira County. The scenario has resulted to low mean grades in most students hence; threatened their likelihoods for attaining upward social mobility. Countrywide, poor performance has contributed to the current low endorsement of both science and technology related careers. The government embraced various interventions towards reversing the poor performance trend in physics and other science subjects targeting students, trainers and the entire learning environment. Regardless

of these government interventions, physics in Masaba North sub-county from one year to another has continued to register low mean grades than the nationally-recorded averages. The lowly changing poor performance as observed has been attributed to student's attitude towards physics, teachers' abilities, insufficient educational resources like laboratories, and inefficient teaching approaches. It has remained unclear of all the factors observed on which shoulders the core responsibility of poor performance in physics as a subject in Masaba North Sub-County.

Therefore, the study strives to identify the forces responsible for poor physics performance in Masaba North Sub-County in Nyamira County.

1.2 Objectives of the study

The objectives of the study were:

- i. To find out whether learning resources determine learners' performance.
- ii. To investigate the influence of administrative behavior on learners' performance in physics.
- iii. To find out the influence of teacher related factors on learners' performance in their academics.
- iv. To find out whether the student's social-economic well-being determines their performance.

1.3 Research questions

The research question of the study was:

- 1) To what magnitude do educational resources impact learner's performance in physics?
- 2) What are the effects of administration practices on learners' performance in physics?
- 3) Do teacher related factor determine student's performance in physics?
- 4) What are the effects of social-economic background on students' performance in physics?

1.4 Purpose of the Study

This study was aimed at examining the main factors impacting school enrolment and performance in physics students in Masaba North Sub-County in Nyamira County.

1.5 Significance of the Study

The core aim characterizing this study is to provide technical contributions towards the enhancement of both schooling and the learning experience sought from physics at the secondary school capacity. The study's motivation revolves around the consideration that the opportunities students have towards learning physics have a direct relationship with the considered variables. As soon the study is conducted, its findings will be of importance in providing insights on the necessity of transforming the studied factors to promote performance and the enrolment behavior in physics. Most of the previous studies were based on limited outcome measures and recommended more research on other areas, subjects, and using different approach (Orodho 1996, Miheso 2002 and Nderitu 2007). Education stakeholders will find the findings of the study beneficial in the course of developing and improving the curriculum especially at Kenya Institute of Curriculum Development (K.I.C.D). On the other hand, Ministry of Education Science and Technology (M.O.E.S.T) in conjunction with Teachers Service Commission (TSC) will use the findings to promote teacher training and improve on the quality of teaching resources. The curriculum implementers particularly the teachers and Directorate of Quality Assurance and Standards (DQASO), will benefit from the study's findings in that they will know every factor that can be worked on to improve enrollment in physics classes and the performance of every learner. Since teachers have an important role to play in teaching, super training will be a milestone towards improved methods of content delivery hence; improve enrolment and performance in physics. Most schools in Masaba north sub-county in Nyamira County have had a dismal performance in the past physics Kenya National Examination council (KCSE) examinations and the finding of this study will be beneficial in assisting educationists in the district improve both student's admission and performance in physics in the district. Teacher trainers will therefore be expected to use the results of this investigation to advance teacher-training methodologies and practices.

1.6 Scope and Limitation

The research was carried out in 12 secondary schools of Masaba north sub-county in Nyamira County and data collected from Head of Departments (H.O.Ds), physics teachers and Forms Two and Three students in March 2012. Due to the limited time that was allocated in researching for the significance of these factors, this study might fail to be exhaustive and could leave out some important variables that could be relevant in this research. The sample selected for the study might fail to be the true representative of the whole population of Masaba north sub-county in Nyamira County. Since all the schools in the district are located in the rural areas where the terrain is very rough, traveling might be difficult and such a scenario may adversely affect the Study results. Financial constraints are other considerations that may negatively impact on depth of this study. With the availability of adequate resources, the study may turn out more comprehensive while the sample size is increased with the aim of improving reliability.

1.7 Assumptions of the study

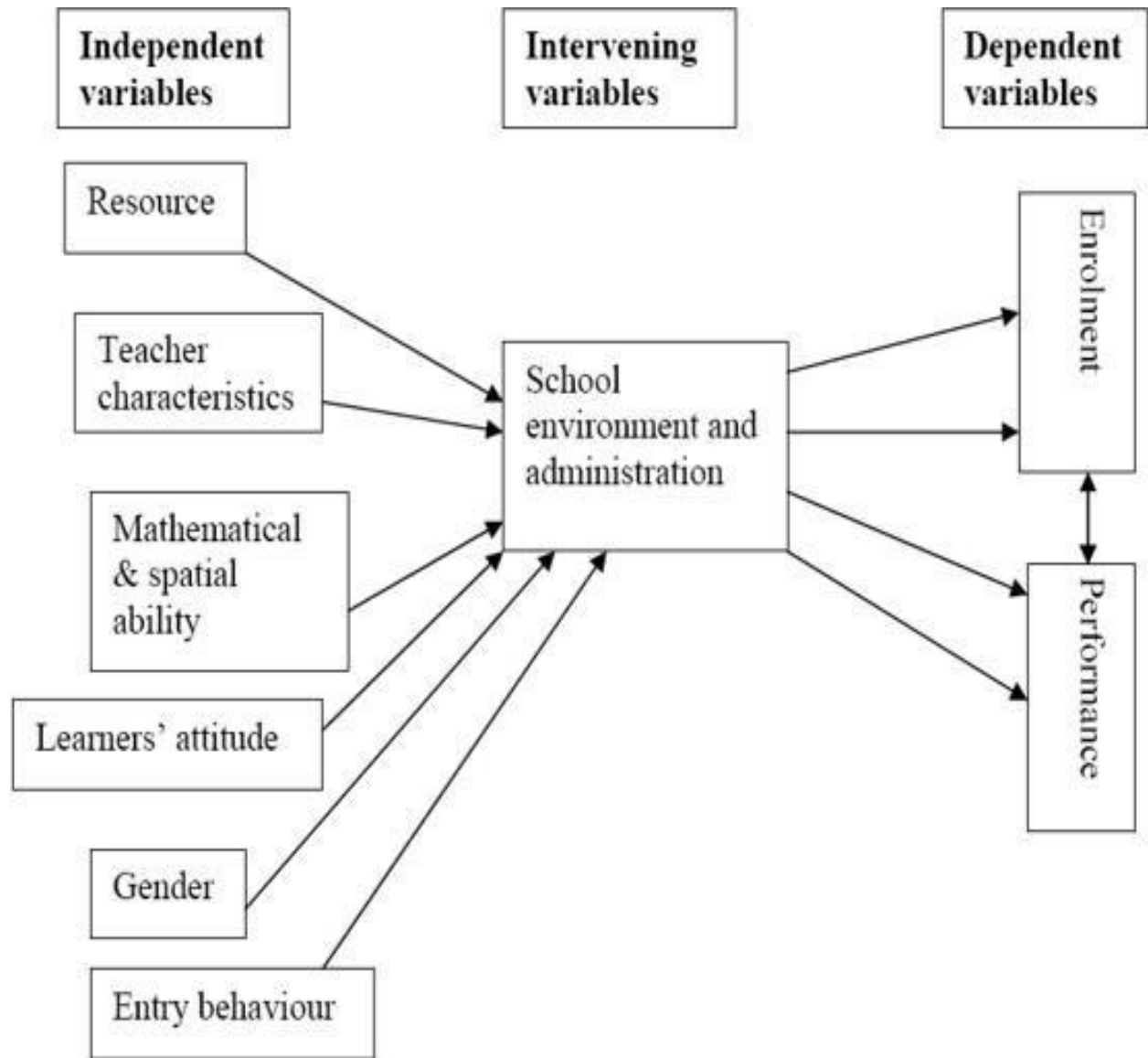
The sample of schools, students and teachers selected for this study was assumed to be the true representative of the whole population of the said stakeholders in the district. It was also assumed that the participants responded to the research items in all the research instruments accurately and honestly. The research items selected in all the research instruments used was assumed to accurately measure the extent to which the identified factors contribute towards both enrolment and performance of physics. It was also assumed that the time allocated for the study of physics is uniform across all the sampled schools.

1.8 Conceptual Framework

Enrolment and performance in physics is reliant on various variables. Some of them will form the bases of investigation in this study. It is common knowledge that availability and appropriate use of resources greatly enhance enrollment and performance.

Some intervening variables such as the school environment and administration will also come into play.

Fig 1.1. The concept model of the study



Teachers are a significant connection between the learners and the learning materials to be taught. The methods of presentation of these materials are very important and eventually influence enrolment, performance and learning outcome. The method used to relay information greatly affects reception by the learner. The personality and teacher's teaching style affect the coding of information by the learner (Flanders, 1965).

Teachers who showed acceptance of students' feelings and praised them were associated with more positive attitude and higher achievement by the pupils. Most physics concepts and relationship between concepts are stated in mathematical statements (Embeywa, 1995).

Mathematical ability of a student therefore may affect performance in physics. Students with higher mathematical ability are therefore have a high likelihood of enrolling and performing better in physics than those with low mathematical ability (Hudson 1989). The study will therefore seek to establish the extent to which mathematical ability affect the choice of science subject selected in Form Three and how he/she performs in the subject.

It is evident from KCSE performance report books that more boys than girls enroll in physics. Performance of physics among the girls is also lower compared to their male counterparts.

Research has shown that boys have a higher spatial ability compared to girls (Twoli 1986). This study will establish the degree at which a student's sex affects his /her choice of science subject and how he/she performs in the subject. In the current 8-4-4 curriculum, physics in Form One and Two is compulsory. Students are permitted to choose at least two sciences in form three. As such, most of the students opt for Chemistry and Biology.

One significant intervening variable between factors affecting enrollment and performance is the school learning environment which is to a large extent influenced by the school administration. When the school learning environment is conducive, there is a likelihood of higher performance in all subjects, physics included. The school administration influences the quality and kind of learning/teaching resources available in the school and is responsible for teacher's motivation.

1.9 Operational Definition of Terms

Constructivism -Knowledge has to be created from the available through the establishment of fresh associations, revolutions and processes.

Effective 40 Central Province Heads Associations initiative to effectively use the 40minutes allocated in a lesson.

Enrolment The number of pupils that choose to study physics after completing Form Two.

Factors Determinants that will be identified and assumed to affect admission into physics and the following educational performance.

Other sciences This will mean Biology and Chemistry.

Performance In the study it is interchanged with achievement to denote the level of gathering knowledge on the basis of KCSE examination among other test score used in assessing educational achievement.

Vision 2030 Is an initiative fronted by the Kenyan government and aimed at improving the citizen's standards of living as well as eliminating poverty by 2030.

Gross Enrolment ratio (GER) The proportion of gross enrolment irrespective of age to the age groups' population that formally matches to the education level.

Teaching style Teaching strategies, tactics and methods employed during instructions

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The aspects that are alleged to be affecting physics students from the time of enrolment and general presentation of what they learnt are emphasized at this part. The aspects are following; boldness of the student, behavior, training approaches, dimensional and calculation ability and sexual categories. Science (2010), most of learners' remarks physics as a tough subject, therefore intellectuals and professors obliged to be determined in ensuring that physics is trained in a manner to remove that aspect that physics is more challenging. According to Chiappetta et al. (2002), the insight of physics being tough is not only experienced by learners at lower level of education but also learners at higher level of education. The physics subject being alleged by most trainers at secondary level to be more challenging, nowadays has discouraged them to further their studies beyond the level they have achieved. Therefore, most of learners miss a chance of learning and gaining most motivating and essentials ideas that could open them with a greater understanding of the corporal sphere and world in which they belong (American Association of Physics Teachers -AAPT Journal 1997). Lyons (2005) urges that, students that have the courage of learning physics, experience difficulties in understanding the physical executive summary. The physics students carry out practical to experiment and justify philosophies (theories) but they still have fallacies towards physical occurrences (Lyons 2005).

The recent weight towards the manner of training and teaching physics, simpler scientific methods are used such as forecasting, surveillance and clarification which have motivated learners to be vigilant in constructing and coming up with ideas that have potential to bring intellectual differences. Young (2007) contends that, to be in a position to encourage and build physical concepts, training of physics should be changed from demo-showing to solving problems. The evaluation of this part highlighted on aspects perceived influencing enrolment and intellectual presentation of physics learners at high-school level. Much has been written on enrolment and intellectual presentation of the subject in other areas but not the sub-county of North Masaba. This chapter will deal with the studies and research that have been done by educationists and other researchers in other areas with a view to improve performance and enrolment in physics.

This study will analyze students, practicing physics teachers and science HODs views relating to the problems of low interest of students enrolling physics and lowly results for those who partake physics with an aim of searching possible solutions. The objective of this chapter is to give an insight into the conceptual framework of the study. Other possible factors researched by other scholars will also be highlighted.

2.1 Features of Physics trainers and the current methods in training

According to Strengthening of Mathematics and Science in Secondary Education (SMASSE) project (2003), the training of physics has currently changed from ancient demo-showing to practical experiments. Physics educators have advocated for the need to use student-based activities to enhance retention. The training of subjects belonging to the field of science, the full involvement of the student should be advocated. Teaching of science subjects, involvement of other approaches should be motivated. This is because experiment cannot cover every part of physics lessons. Wambugu et al (2007) considers mastery learning approach as one of the methods. Material presentation results to challenges of direct training of physics (Mazur et al 2006). However, these learning resources are extracted directly from written sources.

The problematic results are experienced when students use outdated methods of learning which is like giving a speech to dormant congregation. Only exceptional teachers are able to maintain and not including the learners for a long period and even then, the amount of retention is way below average (Flanders 1965). The material retained by learners is evidently as a result of lively involvement of the student and good relationship with training resources. Importantly, teacher to start with what the students have in their cognitive structure and build on it (constructivism).

Serious teachers should teach with their content in the mind and their students at heart (Bhatt 2007). Commonly, most teachers (who are great) show affection to the subjects and really want to share this affection with students and advise how seriously these subjects should be tackled. . Singer et al. (2005), urges that, practical experiments from laboratory are highly valued by trainers in the field of science nowadays because, it plays a vital segment in the units of sciences that are planned carefully. However, the establishment of laboratory real experimentations in training physics has been recognized after a long period of time, this has imparted learners with scientific skills and processes. The higher learning levels (both college and secondary level), laboratory experiments formulate the keep aspects of training physics (Iraki1994, Sneddon et al.

2009). According to Freedman (1981), practical experiments are exclusive category of science tutorials because its experience is primary; it gives and exposes learners to a wide spectrum in participating in scientific investigations and sharing of thoughts and more so understanding scientific theories, principles and concepts.

Students are in a position to understand the occurrences (phenomena) as the way they have learnt from the lecture room because the practical experiments give genuine procedures and know-how. As from 19th century, it is agreed that physics tutorials cannot be carried out without practical experiments either by demo-showing or laboratory work. Sincerely, long lasting memory experience is gained when laboratory work is performed. Gardner et al. (1990), claims that, most of the students are impressed and love laboratory experiments than other methods of studying. Therefore, Blosser (1991), suggests that, most of scientific educational objectives considered includes science as inquiry, scientific nature, scientific development concepts stimulate knowledgeable understanding when practical experiments are employed. The fact is, many of trainers (who teach sciences) always love to teach in labs because portrays the surrounding of the normal scientific life (Huddson, 1996 and Sneddon 2009).

The learners get more understanding of the scientific processes through learning, interacting and observing physical organisms. During class sessions, most of learners establish physical ideas and deduce differently modes of science which have futuristic capacity (McDermott 1991).

Lillian et al (1996) claims that, negative narratives created earlier should be eliminated during learning process. Mazur et al (2006), suggests that, students should emulate what they developed, that is, dissemination of what they know about the scientific ideas and concepts (peer instruction). The enrolment and quality student presentations in physics are directly influenced by the methods used by the teachers and the current approaches of teaching the subject.

Physics enrolment, Entry Behavior and Physics performances Physics enrolment

Nderitu (2007) claims from studies carried previously that, a section of learners is interested in furthering their studies beyond lower level (junior school level). This trend is reflected at the university level where very few students enroll to study physics and engineering related courses

(Lyons 2005). Lyons (2005) and Sperandes et al (2005) claims that, there is a misconception of physics being a challenging subject by most of learners for many years, hence it should be eliminated with immediate effect. Low enrolment is therefore a course of worry not just for physics educators but also for other stakeholders in the economic sector. The number of girls who enroll in physics is significantly lower than that of boys. Ng'ang'a (2015), Gender right activists have however succeeded in enshrining a law to the effect that school subjects should not be stereotyped (MOEST 2007, Torongey 1986). Though this does not completely seal the gap, educators are trying to improve the situation by encouraging the girls to take chemistry and physics (MOEST 2007 in Gender policy in education) The problem of low enrolment in physics has persisted for decades as was reported by times magazine on 24th may 1993 page 17; Young Turks of every generation for the past 100 years have proclaimed the imminent end of physics but every advance has only opened new vistas of mysteries.

There is no reason to think we even know the right question leave alone ultimate answer. The currency of science is not truth but doubt. In Australia, science at junior high level was regarded as challenging, immaterial and monotonous by most of the learners; therefore, they could not enroll to the higher physics levels, the study showed (Lyons 2005). According to UNESCO (1973), the futuristic level in technology and scientific advancement is in question due to declining level in enrolment of science related subjects. There is a significant relationship between science enrolment pattern and eclectic rage of factors including achievement levels and social economic status (Fullarton et al. 2001 in Lyons 2005). This therefore begs the question; which other factors affect performance presentation and enrolment?

2.1.1Entry Behavior

These are the specific skills the students are supposed to have prior to the beginning of instruction. Entry behavior for the purpose of this study will mean marks obtained in science at KCPE and the previous grade attained by the student before coming to the current class. Entry behavior is determined to a large extent by the amount of quality time a student spends studying that subject. Performance and enrolment to the subject might be determined by the first feeling and the past engagement to the content of that subject (Orodho 1996, Nderitu 2007). The quality of grades in the Kenya Certificate of Primary Education (KCPE) science paper is likely to a

certain extent influence the performance of physics, chemistry and biology. There is a direct correlation between physics grades to achievement in mathematics (Hudson et al 2006).

2.1.2 Physics Performance

According to Kenya National Examination Council (KNEC 2007), the physics program has repetitively reviewed with an aim of simplifying it to learners but it has not changed the poor performance of learners in this subject. Nderitu (2007) & Lyons (2005) claim that, student enrolment to physics subject and its performance is directly proportional, when students perform poorly in the subject, it has an effect to the preceding enrolment which turns out to be low. This is the cause of physics experiencing low admission. KNEC (2002) suggests that, despite chemistry having a low mean score, the enrollment of the two subjects have been always low but high in favor of chemistry. Physics being alleged as a difficult subject; the performance may not create a clear reason for lower enrollment but mostly has an effect to enrolment.

2.1.3 Gender differences

According to KNEC examination report (2002) and the Gender Policy in education report (2007), the overall gross enrolment ratio GER has improved in the past few years (MOEST 2007). This has however not been reflected in physics where the enrolment ratio is 1:3 in 27 favour of boys as compared to the overall enrolment ratio of 9:10 in favour of boys (MOEST 2007) The performance of physics among the girls has been quite low compared to that of boys (KCSE performance report 2002 to 2007). This has been a cause of worry for gender activists (Onyango 2003) investigations by most of researchers have shown that there is low admission and performance among girls in sciences. The explanations given were, countries that are developing like Kenya, Some of the reasons given were that; „, in developing countries like Kenya, activities that boys were doing were open air such as hunting, fishing and herding cattle, while activities carried out by girls were home-based such as cooking and washing.

According to Twoli (1986), the girls' activities disadvantaged those who were partaking science related courses. These activities disadvantage the girls from pursuing science related courses as they do not 'tinker'. Iraki (1994) claimed that idea of cars for boys and dolls for girls should be discouraged since it placed the girls at risk of failing to pursue science-oriented courses. Girls in most cases opt to take subjects that do not require high order thinking skills such as secretarial, home science and catering. The girls, especially those in day schools are likely to be involved in

helping their parents after school and may therefore not have enough time for study. (Onyango 2007). Parents in African societies allocate more house work to their daughters than to their sons (Chege 2001).

Claxton (1991), suggests that girls seem to shy away from physics due to the perception that the subject has many experiments that are risky. Perhaps the essential gender male of the subject eliminates girls. Girls perceive physics as a male subject thus opting for biology and chemistry (Nderitu 2007). However, all the sciences require performance of experiments and practical lessons to aid students psychomotor and gain of scientific processes and skills that can be manipulated.

Iraki (1994) claims that, enrolment and quality presentation in physics subjects and other science related subjects may be affected by among other factors ability or inability to develop psychomotor skills good enough to handle practical tests. While marking science exam tests KCSE (KNEC) has a rule that passing a practical paper is compulsory for a student to have a good pass in scientific subject. Nderitu (2007), claims that, the requirement is likely to cause the girls to perform poorly in sciences; physics being part of it, due to inadequate readiness to tackle practical questions. Girls especially those in mixed school avoid getting into contact with laboratory apparatus fearing that they will mishandle them. Iraki (1994) claims that, boys in these schools also play a role in denying the girls an opportunity to touch and work with the apparatus. The way boys are raised in society could be the reason for dominating over girls.

The national ratio in enrolling has therefore improved in recent past from 44.8% in 2002 to 57.6% in 2006 (Gender Policy in Education 2007). Affirmative action has been used as a corrective measure to curb the gender imbalances. The GER in secondary schools has however remained low at less than 30% throughout 1990s and part of early 2000. It however improved from 2004 to 2006 (MOEST 2007). Boys tended to perform better in key subjects such as mathematics, science and English but girls performed slightly better in Kiswahili. In a study conducted by Onyango (2003), girls' poor performance in key subject especially those in day schools was due having other activities performed domestically home after leaving school thus limiting their study time.

According to Toronkey (1986), students perceive physics-oriented courses such as engineering and architecture to be masculine while biology is viewed to be feminine. This image is also perpetuated in schools where physics teachers and students are dominated by male. The imaginary ability among boys is higher than among the girls (Alonso 1998). This could explain the reason why boys perform better in sciences than girls. In fact, given a choice, most girls opt to study biology (Clerk 1972).

2.1.4 Mathematical and spatial abilities

Hutchings (1973) urges that, the relationship between physics and mathematics is more solid. More so, topics like trigonometry, vectors, motion and so on in physics are the same of that in mathematics. Lyons (2005) claims that, students who do well in mathematics can easily shift to physics and perform well than those who don't do well. The mathematical and experimental features stand to be distinctive in the modernized physics and more so used jointly. According to the Hudson (1989) claims that, the investigation and analysis of ideas are applied in situations that are theoretical and practical are analyzed subsequently by mathematical business in physics. Meditating spatially is the capacity to operate psychologically to execute figures in three dimensions. Twoli (1986) claims that for the attainment of science, there is three-dimension meditation which is the aspect of theory in mathematics. Generally, average examination done by Alonso (1998) claims that, boys have three dimensional meditations than girls. Also, adults who are young as compared to adults who are older, he noted they have high three-dimension meditations. The psychiatrist is in a position to undertake intensive and extensive examination of numerous intellectual relationships without considering distracted directives from personalities. This is achieved when he considered a formula that is set mathematically (Embeywa, 1995). Mental energy is saved when a mathematical formula is used. (Embeywa, 1985). The mental effort is useful economically by use of mathematical formula. Through differentiating between dependent variables and independent variables, students of physics are able to deal with mathematical relatives as symmetrical units. Learner (1989) urges that, for the learner to have a relationship that is direct to his environment and corporal domain, physics teachers should not be vague and they should ensure that, when teaching physics, mathematical terminologies must not confuse the learners. Nature articulates its regulation, which is a mathematical dialect noted by Galileo. The results obtained mostly in physics are measured numerically. The measurements are matched when numerical values of theoretical physics are obtained mathematically. Physical

laws formulated precisely quantified predictions that give rational framework which is mathematically relied upon by physics. (Wiki, 2009).

2.1.5 Sciences and attitudes

According to Callahan (1971), understanding the emotional state of students is essential during teaching process, the work you give them, the struggle inserted and level of knowledge attained. Nderitu (2007) claims that, in studying physics, students should have a positively oriented attitude which will be a greater importance since it defines the efforts made which possibly is reflected from the results. The Kenyatta University bureau of education research find that in elementally institutions, the relationship between attitude and achievement is positively modest; the behavior and efforts of the teacher is also a factor towards the students' attitudes towards the subject.

The positive attitude is manifested by most students taught science by female teacher than those taught by male teachers. The positive attitude towards teaching science is mostly found with female teachers which are not the case with male teachers. According to Wasanga (1996), male teachers are alleged to be more problematic despite having higher qualifications. Learners can gain low attitude towards a subject when there is low academic achievement henceforth low enrolment. Twoli (1986) suggests that, despite a positive a strong correlation between academic excellence and attitude it cannot be concluded attitude that is negative leads to low performance or performance low performance leads to attitude that is low. However, there is a possibility low academic performance might lead to fear and discouragement which leads to low attitude.

Orodho (1996) & Okpala et al (1988) claims that, subject can be remarked according to its earlier performances.

When a student fail to perform at past, some might believe they will never achieve in the future and also the vice versa. The science achievements are determined by the student's positive attitude towards it, the grades awarded and the high expectations of career in the job market.

According to Orodho (1996) a low section of students who perform excellent in physics reports to love it more that those who failed the subject. The achievement and better performance will signify someone's positive feelings towards the subject. In addition, Aiken et al (1987) claim that, the positive attitude towards the subject is gained. Therefore, the good performances by few

students towards the subject stimulate them to have a positive attitude. The academic learning can be lowered when there is constant low performances in the subject, this stimulates low attitude towards it. Math science (2010) carried out a research in Australia, 2010 and finds that, technology and engineering, science and mathematics are inappropriate, monotonous and difficult as per the students of high school.

2.1.6 Learning Resources

Various definitions for instructional resources have been put across. Teaching aid is part of instructional resources, therefore, topics to be taught are successful understood when teaching aid is employed. This shows that teaching aid not only does not handle the whole work but also shows that other sections of the job are controlled by the human teacher (Romiszowski, 1986). However, this outlines that, an instructional reserve is a special approach towards teaching simply because, and it makes learning easier (Pages 142). The teacher aid program should not and must not replace the teacher.

Apart from engaging students to pursue science genuinely, resources give a practical methodology in handling science programs. The activities provide meaningful interaction between students and their world in a manner that encourages sound scientific reasoning (Herr 1994). There are several types of instructional materials available for use in schools. These materials are such as charts, books, and newspapers. Materials that are audiovisual include magnetic tapes, radio broadcasts, and televisions. Further, lab kits and apparatus also have a vital position in scientific learning and teaching.

The student to acquire sufficient knowledge, optimum utilization of teaching and instructional resources should be significantly considered. Apart from the optimum utilization of resources used for learning in physics improves performance; also, its availability and easy accessibility do the same. Romiszowski (1986) claims that the availability of the resources is a determinant factor of the type of resources used. Also, Wasanga (1996) adds that, at the primary level, there is low pupil enrolment and performances in sciences due to insufficient learning resources. The use of instructional resources is even more critical when teaching girls to cater for their low spatial ability (Mbirianjau, 2009).

2.1.7 Administration and Management's Practices in Public secondary education

The management plays a central role in ensuring that educational resources are availed in time. Similarly, they ensure that every student is attended to while their learning needs are adequately met. According to Kieti (2017), long administration members' stay within an institution has a significant impact on the student's performance since they have adequate knowledge of the challenges facing teaching as a service. It's observed that instructional management and guidance is the best way through which performance occurs. Administrative practices and student's performance are interdependent hence the administration's operations predicted student's performance (Kieti, Maithya, & Mulwa, 2017). The administration ensures availability of learning and teaching materials, determine student-teacher ratio, and promote balanced teacher supervision on student's activities. Similarly, the management ensures adequate parent's involvement in their student's educational performance (Maithya, 2015).

2.1.8 Teacher's related factors and student performance

In a study conducted on Baringo County's public secondary schools it was revealed that student's educational achievement was significant related to the teacher's instructional guidance. Their attitude towards teaching as well as experience played a critical role toward the student's performance. Teachers' qualifications were not considered as key factors when student performance was taken into reflection (Kiptum, 2016). It's important to understand that the observations on teachers' impact on student performance as detailed by Kiptum play a key role in management's decision-making process since their articulation and adoption of various policies. Resource allocation towards the development of competent school managers, as well as helping administrators and teachers becomes easy once the impact of every party on the learning processes and outcomes is known.

2.1.9 Family Background Factors and Student Performance

As reported in a study conducted in Nigeria, family backgrounds affect student's educational performance. Considerably, differing student perceptions on the role played by their families as an educational motivator were also expressed. The parent's socio-economic factors were seen to have a clear correlation with the student's performance although such academic achievements differed from one student to another when family composition structures were considered.

Parent's visitations to their children in school, provision of the needed resources, pocket money their occupational tasks, as well the parents' educational level explain more about student's varying performance levels. On a similar capacity, family feeding, family type and the residential type as well as the parent's age category had a significant impact on the students' performance (Abdullahi, 2016). A student facing distractions from his/her home background can hardly perform well since their emotional and psychological wellbeing is not guaranteed.

2.2 Summary

As has been expressed in this literature review, most research on performance has been done in mathematics (Eshiwani 1992, Hutchings 1973, Miheso 2002, Kungania 2006, and Onyango 2003). It is however clear that most of the factors affecting performance in mathematics are likely to do the same to physics. In other research done in physics (Nderitu 2007), a limited number of research instruments were employed, however, in this study, a total of five research instruments were used which significantly improved the overall reliability of the study. Orodho (1996) looked into the factors determining achievement in science (chemistry and biology) but left out physics. Though none of these studies have been conducted in Masaba north Sub County, various researchers have recommended this study in other areas of the country to compare the outcome (Nderitu 2007, Miheso2002).Administrative practices have been identified and ascertained to be significant indicators of student performance hence the existence of an interdependent relationship between the two. Family-related factors play a key role in students' performance since they not only shape their emotional and psychological wellbeing but also give them a sense of both satisfaction and identity.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

The chapter handles the methods applied in data collection in the study, describes the study design, data sources and the population under investigation. Sampling methods, and the statistical tools applied in data analysis are also discussed.

3.1. Research Design Research

The research design that was applied in this study was a descriptive method. The method was chosen since it is not only adequate but also the most applicable since it aids researchers in describing, examining, recording and interpreting study variable as they exist. Since the factors impacting the performance and enrolment among secondary school students are more qualitative than quantitative in respect to the study questions, then the design was the best option.

3.2 Sources of data

The study solely relied on primary data sources. Although there are many instruments such as the questionnaires, telephone interviews, interview schedules and observation, this study will only use questionnaires in obtaining data from the respective respondents. A questionnaire was chosen based on its capacity to represent every participant's interests ranging from confidentiality to the provision of clear and detailed responses.

3.3 Target population

The population this study targeted is as elaborated below shows the collective group representing all the members of a crowd of people of interest to me and from which study results were drawn.

Table 1

Population Category	Target population
Academic staff (Physics teachers and senior management personnel)	200
Middle staff (Laboratory technicians & other professionals)	100
Support staff	50
Physics Students	100
TOTAL	450

3.5 Sample Design

The technique that was used in this study was stratified random sampling method from which members of every stratum had an equal chance of selection. The inclusion of small groups was guaranteed with the use of stratified sampling as compared to the situation that would have been if other methods were used. Representatives are normally selected since an entire population cannot be studied.

Table 2

Population category	Target population	sample size
Academic staff	200	20
Middle staff	100	10
Support staff	50	10
Physics Students	100	10
TOTAL	450	50

3.6 Data collection

Primary data was used in informing the study. Self-administered semi-structured questionnaires were the tools used in gathering the data since the questions included were open and closed-ended. The study instruments were administered to diverse categories with the population through the drop and pick later method. A pilot study was conducted with the aim of presenting the method and data collection tools to the participants. Its aim was to help the researcher identify any of the prevailing weaknesses either in the design or instruments used based on the data gathered and analyzed. During the pre-study consent was another consideration that had to be granted through a documented consent form. A written approval for the study was obtained from the district education office as well as approved by the principals of the respective schools. However, those that did not warrant us an opportunity to obtain their responses their decision were respected. The questionnaires were administered through a drop and pick later method. Timetabling was done through an analysis on the documents collected from the district education office and the principal's office. Assistance was offered to some of the staff that had difficulties in responding to the study instrument through a phone call or email.

3.7 Data analysis and presentation

The collected data was first edited in order to ensure it was not only accurate but also uniform before it was analyzed. Consequently, frequency tables were then used in data presentation. Frequency distribution tables were also used in analyzing qualitative data. It's worth noting that qualitative analysis was applied as a means through which respondents' views on the research problem were explained with the concern to avail explanation on the study phenomenon. Similarly, descriptive statistics were used in data analysis after which descriptions about the study problem were given as recorded in the questionnaire.

CHAPTER FOUR

FINDINGS AND DISCUSSION OF FINDINGS

4.0 Introduction

An analysis of the study findings, interpretation and presentation of the collected data is done in this chapter in respect to the study objectives. Data tabulation is conducted on the study results realized. The chapter was further sub-divided into various sections pertinent to the study subjects.

4.1 Return Rate of the questionnaire

Table 3

Respondents	Sample	Returned Questionnaire	Percentage%
Teachers	20	8	40
Students	10	8	80
Support staff	10	8	80
Total	40	32	80

80% of the questionnaire, 32 questionnaires were returned out of the expected 40. A total of respondents opted not to participate due to one reason or another. However, this did not have any effect on the final results because 80 percent of the participants returned their questionnaires.

The return rate questionnaire was hence considered satisfactory for the purpose of the study.

4.2 Age of the respondents

Table 6

Age category	Frequency
15-25	25
25-35	13
35-45	7
45-55	5
Total	50

4.3 Quantitative analysis.

4.3.1 Availability of teaching/learning resources

Availability of teaching materials	70% of junior staff agreed
Availability of teaching materials	10% of administrators agreed
Availability of teaching materials	10 %of teachers agreed

Ten percent of the teachers studied explained that teaching materials largely determined student's performance since the learning capacity significantly relies on the resources available. Ten percent of the administrators and other 70% middle staff explained that learning and teaching resources were key in improving student's achievements in physics. Similarly, the management in various schools documented that enrollment was high in learning centers with adequate properties as compared.

4.3.2 Impact of administrative behavior on student performance

Table 5

Students	50% of the student agreed
Support staff	2% of the staff agreed
Teachers	25% of the staff agreed
Total	26% of the respondent

Considering the table 5 above, it was observed that administration in one way or another affects the students' performance. The sharing of leadership with teachers, the development of trust relationships among professionals, and the provision of support for instructional improvement affects teachers' work with each other and their classroom practices.

4.3.2.1 Effective communication Strategies

Effective communication Strategies	Frequency
Agreed	25
Disagreed	10
Total	35

On the issue of whether the institutions' department used effective communications policies, it was realized as follows. The table above indicates that the studied departments embraced the use of effective communication approaches. A high number of the participants planned messages by having them directed to the respective audiences through the right channels. On the other side, the least number of the respondents did not believe in the institutions use of effective communication plans.

4.3.2.2 Communication channels used by the various named departments

Communication channels used	Frequency
Agreed	26
Disagreed	4
Total	30

As shown in the tabulated data in table 8 above, high number of the participants, 26, agreed that the best communication channels were used while 4 of them did not believe on the perspective.

4.3.2.3 Audience

Audience	Frequency
Agreed	25
Disagreed	5
Total	30

4.3.2.4 Barriers of effective Communication

As noted in the table below, the barriers characterizing effective communication in the institution's departments was listed.

Barriers of Effective communication	Frequency
Agreed	5
Disagreed	25
Total	30

Table 10 above show the manner in which communication barriers might have caused poor communication with the department and its institutions. As recorded from the analysis, many of the respondents disagreed with the observation that communication barriers might have been causing poor communication with few of them believed that it was a significant causation.

4.3.3 Student Behavior and Teacher's involvement

The table below shows the number of students and the behavior explained by each to have effect on their performance

Peer pressure and attitude	7% of students agreed
Teacher's handling the subjects	3% of students agreed
Teaching methods	10 % of teachers agreed
Family background	2% of teachers agreed

Student behavior like peer pressure and their attitude were reported by seven students and ten teachers to influence the learning parties' subject choices. However, three of the students explained that their choice in physics was motivated by the teachers handling the subject while seven teachers believed that a combination of student's behavior and family background contributed to student's subject choices. The teaching methods applied affected physics performance thus low enrollment was realized as explained by ten percent of the teachers.

4.3.4 Students' social-economic well being

Students	70% of the students disagreed
Teachers	20% of the teachers disagreed
Staff	15% of the staff disagreed

Considerably, the family background's impact on student performance was not a significant factor, reported by 20% of the teachers as compared to student behavior and teacher's involvement. Every physics students had high motivation towards the subject; those performing highly having higher positive attitudes as compared to those with low performance. It was observed that the impacts of any of the factors above cannot exist independently. The quality of the school, the family environment and the family economic resources were considered to be

important. The issue is that all of them are exogenous factors which only take effects through students' behavior i.e. through children's academic achievement.

4.3.4.1 Sex and performance

Boys	7 students
Girls	3 students
Increased exposure to laboratory experiments	5 Lab technicians
Increased exposure to laboratory experiments	7 Teachers

It was observed that most of the students (7 of the studied) were boys as recorded in the questionnaires. Similarly, the female confessed that physics is considered more masculine hence demotivate girls from choosing the subject. However, students taught regularly in the laboratories performed better irrespective of their sex. As recorded, five of the studied laboratory technicians and seven teachers observed that continued use of the laboratories exposed students to practical skills that improved their performance with no consideration of their sex. According to the teachers sex was not performance determinant but the student's commitment, exposure to laboratories largely determined their performance.

CHAPTER FIVE

DISCUSSION

5.0 Introduction

The study was mainly anchored on four factors which include; teaching and learning resources, school administration, student's behavior and teacher's involvement, students' economic and social wellbeing. These four factors were assumed to affect students' performance and enrolment in physics among the public secondary school in Masaba North Sub-County.

5.1 Teaching/Learning Resources

The availability of both learning and teaching resources was explained as a key factor determining performance and enrollment. Resources not only help students perform better but also create a reputation of a successful institution. According to Munene (2014), educational resources are paramount factors whose impact on student performance can never be underestimated as observed in Gatundu District. The reputation aspect coupled with performance motivated parents and students to choose subjects and schools that seemed more appealing to them and had adequate availability of the needed resources. There was no evidence of the use of student class projects in the process of teaching or instruction. This was only restricted to presentations made during annual congress on science and technology by the few of the chosen students who attend those congresses on another account, parent's backgrounds as well as the physical facilities at the student's premise had little or close to no impact on the performance of every learner. The consideration was based on the student's educational capacity that determined their performance since their access to family materials exists as external factors within the spheres of knowledge.

5.2 Impact of administrative behavior on student performance

Management's involvement was a key aspect identified to either directly or indirectly affects student performance. Communication was the first issue raised and supported by the data gathered. The department handling matters in physics and other issues relating to the subject did not observe the best communication mechanisms that could warrant better performance for every student. Such observation has a strong correlation with low facilitation by both the government through the ministry of education and limited school-parent involvement in the day-to-day running of the school activities. Messages reaching their respective audiences at the anticipated

time. The school administration should be student centered. Any that happens in the school surrounding should centered on what is good for the learner. The school administration should create an environment where learners are constantly challenged by teachers as well as their peers in order to make learning more enjoyable. The administration should motivate the learners to enable them to become facilitators of learning rather than dispensers of content. Teachers should also be given an opportunity to experience meaningful personal growth. School administration acts as the link between the school and community.

5.3 Student Behavior and Teacher's involvement

The low enrollment and poor performance of females taking physics was partly contributed the consideration that nearly every school studied none of the physics teachers were female except two. Such an observation was a straight negative attitude drawer and a demotivation to many girls. Role models play a critical role in shaping a society's behavior and also serve a similar purpose in physics enrollment and performance. The observations matched Nyongesa's study where he acknowledged the impact of teaching methods, resources, gender, and student attitude on performance in physics in Bungoma East Sub-county (Nyongesa, 2014). Ng'ang'a (2014), had similar observations from which student's motivations were prioritized to contribute to low performance and enrollment as seen in Muranga.

5.4 Students' social-economic well-being.

Subject requirements including facilitation, and the engagement levels involved in physics led students into either choosing it or evading it all the same. Children from poor backgrounds chose subjects other than physics since they felt their social stability as well as financial well-being couldn't allow them to choose an involving subject like physics.

5.5 CONCLUSION AND RECOMMENDATIONS

5.5.1 Introduction

The study's objective was to examine the factors affecting effective communication as a public relations instrument in the academic institutions. As shown in the data analysis, it's clearly shown that Institutions departments apply effective communication methods. A determination of the messages' purposes enables the departments know the educational information needs that have to be communicated. As well, the identification of the concerns that would have been raised, definition of the anticipated objectives such as the provision of information, advanced awareness and encouragement towards action were considered. The messages due for communication are first identified and formulated as per the differential needs of every shareholder. In such a case, as witnessed, the department considers using various communication mediums in reaching their respective audiences. Internet use, focus groups, public meetings, as well as open days and face-to-face meetings are used. Through the use of any of the listed methods, the departments are capable of reaching out to the local communities across the country. As reported in the analysis, departments encounter minimal challenges in communication. However, the departments have had the capacity of overcoming most of the communication barriers by informing their audiences, as well as being sensitive and using proper mediums.

5.5.2 CONCLUSION

The study confirms the essence of communication in organizational practices regardless of their size. One-to-one communication has been explained to be characterized by challenges and other forms of misunderstandings. Purposeful communication and the focus on both results and relationships, organizations have the capacity to leverage effective communication hence realize solid results with various audiences. Both employees and customers are significantly affected the ensuing eventualities with communication barriers since efficiency within an organization's is never realized. For instance, without efficiency deadlines are never met, ideas will not grow, while companies never evolve. Communication breakdown may arise from barriers like different languages and abrupt change within an organizations structure. It's had been the desire of every one to have effective communication although we never consider the barriers that can be faced. Based on the existing barriers, there exists an opportunity for messed communication.

Competent administrators ensure there is adequate awareness on the communication barriers and even learn the relevant coping mechanisms. Principally, wrong mental attitudes, poor feedback, insufficient attention to occupational choices, inappropriate media and noise are some of the barriers of communication. As well, delays in message transmission, physical separation of both the sender and the receiver in addition to the lack of good relational behavior between the communicating parties affects communication. As usual the means of communication have to be selected since one may be beneficial in certain situations as compared to others. For effective functionality in communication, media avenues are combined and used in message delivery. As put forward by Douglas McGregor, often safe generalizations indicate the existence of communication difficulties in an organization as compared to mere symptoms characterizing the challenges within relationships. Student's attitudes, family backgrounds, teaching capabilities, availability of educational resources timetabling and even gender were concluded as significant factors impacting student's performance in all public secondary schools located in Masaba North Nyamira County. Increased involvement for the teachers, students and other stakeholders in the day-to-day activities with the school setting is observed as a core function that every player must play.

5.5.3 RECOMMENDATIONS

This study thus recommends that;

- i. Organizations develop communication strategies to guide messages, the respective audience, medium used and the feedback given. The questions characterizing the process are on the need of communication, the anticipated audience, the message to be relayed and when as well the manner through which the audience is reached.
- ii. An organization has to remain conscious of every challenge faced in communication and work towards reducing its impacts by constantly checking and understanding through the feedback offered.
- iii. Online engagements have become the behavior of many people regardless of their age and background with the search of new media for information and socializing purposes being core. For organizations to grow and remain relevant, then embracing social media in their communication becomes a beneficial approach.

iv Teachers and the management work on the students' attitudes through motivational talks and counseling sections.

v. Teachers' teaching skills be improved through seminars, workshops and other training set ups.

vi. Parents should have constant discussions with the children and understand the educational strains they may be having and find solutions together.

Vii. Based on the study and interrelated conclusion, the researcher recommends future studies to be conducted with the aim of exploiting the application of effective communication approaches as public relational tools.

WORK PLAN

Date	Activity
6 TH -8 TH April, 2019	Developing Questions and questionnaires
12 TH June -22 ND July, 2019	Carrying out research
20 TH -29 TH September, 2019	Data analysis and completion
1 ST – 3 RD November, 2019	Proofreading
4 TH -6 TH November, 2019	Printing
11 TH November ,2019	Submission

BUDGET

Activity	Inputs	Units	Cost(ks h)	Total (ksh)
Proposal preparation	• Reams of printing papers	6	500	3000
	• Copies of proposal binding	3	100	300
	• Printing cost	40	10	400
Actual research data collection and analysis	• Reams of printing papers	2	500	1000
	• Printing and photocopying of questionnaires	177	15	2665
	• Transport			1000
	• Phone calls			500
	• Contingencies			2000
Project writing	Printing	60	10	600
	Binding	4	100	400

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APPENDICES

Letter of Introduction and Consent to Participate in a Study.

JEREMIAH ORIOKI GICHORA

UNIVERSITY OF NAIROBI

P.O.BOX 30197,

NAIROBI.

Dear Respondent,

RE: LETTER OF INTRODUCTION AND CONSENT TO PARTICIPATE IN A STUDY

I am Jeremiah Gichora pursuing a Post Graduate Diploma in Education at the University of Nairobi. I am conducting research on factors affecting enrolment and performance in physics among secondary school students in Masaba North Sub-County in Nyamira County.

Therefore, this school has been one of the selected schools to participate in this research. I hereby request you to respond to the questionnaire items as honestly and transparently as possible and to the best of your knowledge. You have the right to consent or register non-participation in this study and your decision will be respected. The questionnaire is meant for this research only and your responses will be treated with utmost confidentiality. Therefore, you DO NOT need to write your name on the questionnaire.

Thank you

Yours faithfully,

Jeremiah

Jeremiah Orioki Gichora.

APPENDIX.

QUESTIONNAIRE FOR REGULAR TEACHERS

Dear Teacher,

This questionnaire consists of questions asking for general information about you.

The collected data will be solely used to formulate recommendations on how to improve the performance of physics and for research purposes. You are NOT required to write your name on this questionnaire because the data collected is confidential.

Instructions

Please indicate by putting a tick (V) next to the response that applies to you.

SECTION ONE

School Name:

Gender: Male () Female ()

1. Among the following age categories which one do you belong to? i) 15-25 ()

ii) 25-35 ()

iii). 35-45 ()

iv). 45-55 ()

2. What is your teaching experience?

(i) 0-5 years ()

ii) 6-10 years ()

iii) 11-15 years ()

iv) 16-20 years ()

v) Over 20 years ()

3. What is your highest professional qualification?

i) P2 ()

ii) (Diploma) ()

iii) Bachelor's degree ()

iv) Master's degree ()

v) Un-trained teacher ()

vi) Others (specify)

SECTION TWO

1. How would you rate the effects of administration practices on learners' performance in physics?

i) Very adequate ()

ii) Adequate ()

iii) Fairly adequate ()

iv) Not adequate ()

2. How would you rate the influence of the student's social-economic background towards their performance?

i) Very adequate ()

ii) Adequate ()

iii) Fairly adequate ()

iv) Not adequate ()

2. How would you rate the availability of teaching aids and instructional materials at your school in supporting the teaching of physics students?

i) Very adequate ()

ii) Adequate ()

iii) Fairly adequate ()

iv) Not adequate ()

3. Would you consider the classroom's physical environment which includes the chairs, desks, space, light, ventilation and acoustics comfortable enough to accommodate the students? Please tick the appropriate box below

i) Very Adequate ()

ii) Adequate

iii) Fairlyadequate ()

iv). Note Adequate ()

4. How would you rate the availability of textbooks and other physics resources at your school in supporting the learning experience of physics students?

i) Very adequate ()

ii)Adequate ()

iii) Fairly adequate ()

iv) Not adequate ()

5. Are the communication strategies used in the departments efficient?

i) Yes () ii). No ()

6. Do the various organizational departments use the best communication channels?

i) Yes () ii). No ()

7. Does communication barriers cause poor communication?

i) Yes () ii). No ()

SECTION THREE

Questionnaire filled by Support staff

This questionnaire consists of questions asking for general information about inclusive education at your institution. The information collected will be solely used for research purposes and to formulate recommendations on how to improve the performance of physics in public secondary schools in Masaba North Sub-County in Nyamira County. The information collected will be treated with confidentiality.

Please indicate by putting a tick (V) next to the response that applies to you.

1. What is your gender?

i) Female ()

ii) Male ()

2. How would you rate the availability of textbooks, manipulative and visual aids at your school in supporting the learning experience of student enrolled in physics?

i) Very adequate ()

ii) Adequate

iii) Fairly adequate ()

iv). Not adequate ()

3. How would you rate the availability of teaching aids and instructional materials at your school in supporting the teaching of children?

i) Very adequate ()

ii) Adequate ()

iii) Fairly adequate ()

iv). Not adequate ()

4. Would you consider the classroom's physical environment which includes the chairs, desks, space, light, ventilation and acoustics comfortable enough to accommodate the students?

i) Very adequate ()

ii) Adequate Fairly

iii) Adequate ()

iv) Not adequate ()

5. Are the communication strategies used in the departments efficient?

i) Yes ()

ii) No ()

6. Do the various organizational departments use the best communication channels?

ii) Yes () ii). No ()

5. Does a communication barrier cause poor communication?

ii) Yes () ii). No ()

6. Please indicate, the type of resources which are in short supply, starting with the one required most:

1.

2.

3.

7. How would you rate the effects of administration practices on learners' performance in physics?

i) Very adequate ()

ii) Adequate ()

iii) Fairly adequate ()

iv) Not adequate ()

SECTION FOUR

Questionnaire filled by Students

This questionnaire consists of questions asking for general information about inclusive education at your institution. The information collected will be solely used for research purposes and to

formulate recommendations on how to improve the performance of physics in public secondary schools in Masaba North Sub-County in Nyamira County. The information collected will be treated with confidentiality.

Please indicate by putting a tick (V) next to the response that applies to you. SECTION ONE

1. Gender () Female () Male

2. Are you enrolled physics?

i) Yes ()

ii) Not ()

3. Why are you taking or not taking physics?

i) Yes ()

ii) No ()

4. Does the administrative behavior of your school influence your performance?

i) Very adequate ()

ii) Adequatefairly ()

iii) Inadequate ()

iv) Not adequate ()

5. How would you rate the availability of teaching aids and instructional materials at your school in supporting the teaching of children?

i) Very adequate ()

ii) Adequate ()

iii) Fairly adequate ()

iv) Not adequate ()

6. Would you consider the classroom's physical environment which includes the chairs, desks, space, light, ventilation and acoustics comfortable enough to accommodate physics students?

i) Very adequate ()

ii) Adequate

iii) Fairly adequate ()

iv) Not adequate ()

7. How do you rate the teacher related factor towards your enrollment and performance in physics?

i) Very adequate ()

ii) Adequate ()

iii) Fairly adequate ()

iv) Not adequate ()

8. Does your social-economic background influence in one way or another towards your performance?

i) Very adequate ()

ii) Adequate ()

iii) Fairly adequate ()

iv) Not adequate ()

9. Please indicate, the type of resources which are in short supply, starting with the one required most:

1.

2.

3.

10. How does the teachers' teaching methodology influence your enrollment and performance in physics?

i) Very adequate ()

ii) Adequate ()

iii) Fairly adequate ()

iv) Not adequate ()

11. How do you rate the teacher handling the subject towards your enrollment and performance?

i) Very adequate ()

ii) Adequate ()

iii) Fairly adequate ()

iv) Not adequate ()

12. How do you rate the availability of resources such as physics text books towards your enrolment and performance?

i) Very adequate ()

ii) Adequate ()

iii) Fairly adequate ()

iv) Not adequate ()