ASSESSMENT OF THE CURRENT STATUS OF STUDENTS' ACADEMIC PERFORMANCE IN SCIENCE SUBJECTS IN RELATION TO THE INITIATIVES IMPLEMENTED IN SECONDARY SCHOOLS IN TANZANIA

A Case of Gairo District, Morogoro

BY

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CERTIFICATION

We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University, a dissertation entitled ASSESSMENT OF THE CURRENT STATUS OF STUDENTS' ACADEMIC PERFORMANCE IN SCIENCE SUBJECTS IN RELATION TO THE INITIATIVES IMPLEMENTED IN SECONDARY SCHOOLS IN TANZANIA, A CASE OF GAIRO DISTRICT, MOROGORO, In partial fulfillment of the requirements for an award of the degree of Master of Human Resource Management of Mzumbe University.

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DECLARATION

I, Samwel M.A. Masatu, declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other university for similar or any other degree award.

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DEDICATION

The book of Proverbs 4:13 states that "…Hold on to instruction; do not let it go; guard it well, for it is your life…"

I therefore honor you: Education. You have unfolded the world to me. Every one owes you. Upon you great nations rise.

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LIST OF ABBREVIATIONS

CAMFED - Campaign for Female Education

KCSE - Kenya Certificate Secondary School

MOEC - Ministry of Education and Culture

MDGs - Millennium Development Goals

NECTA - National Examination Council of Tanzania

NSGRP - The National Strategy of Growth and Reduction of Poverty

SEDP - Secondary Education Development Program

SES - Social Economic Status

SPSS - Statistical Package for Social Science

TACAID - Tanzania Campaign for AIDS

URT - United Republic of Tanzania

USA - United State of America

ABSTRACT

The study was about Assessment of the Current Status of Students' Academic Performance in Science Subjects in Relation to the Initiatives implemented in secondary schools in Tanzania A case of Gairo district, Morogoro. The central argument of the study was to assess the current status of students' academic performance in science subjects in relation to the initiatives implemented to improve students' academic performance in these subjects, a case of Gairo district, Morogoro.

The study reviewed some literature and came up with the following objectives: To examine the students' current status academic performance in science subjects, to identify the current factors contributing to students' poor academic performance in science subjects. Also was to examine initiative used to improve students' academic performance in science subjects and was to examine the possible measures to be taken to improve students' academic performance in science subjects.

The research conducted in Gairo's ordinary public secondary schools. The research is a case study and the researcher used two research techniques of data collection whereby face- to face-Interview was conducted to secondary schools' administrative leaders and questionnaires were distributed to science teachers and students. Statistical Package for Science (SPSS) software was used in data analysis.

It was found during the study that, students' academic performance in science subjects in ordinary secondary schools in Gairo district is poor. The state of students' academic performance in science subjects in Gairo District is contributed by some factors as analyzed by the study and some initiatives has been taken to improve students' academic performance in science subjects. In solving the problem of students' poor academic Performance in science subjects the study has suggested some measures to be taken.

Insightful conclusion was drawn from the results obtained and recommendations are made for future researchers and for Government. Researcher is in position to

recommend that, the government should modernize the available public secondary schools before continuing with constructing other public secondary schools.

Also the government should take motivation as the means of arising teaching and learning science subjects at any level of education.

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CHAPTER ONE

1.0 Introduction

This chapter gives the background information to the problem, and then gives the statement of the problem followed by the general and specific objectives. The research questions that will be used in this study are also given and the significance of the study is clearly shown. The part also focuses on the limitations and delimitation of the study.

1. 1 BACKGROUND OF THE STUDY

After independence Africa countries took some initiative to develop the foundation of science and technology education, this was the fact that during colonial era science and technology education was not emphasized. There are several measures taken by Africa countries for the purpose of making science and technology as strategy of fastening social and economic development. For instance Ghana after the independence in 1957 nursed the dream of the rapid social and economic development using knowledge and tools derived from Science and Technology education. In a speech which the founding Prime Minister of Ghana, Dr. Kwame Nkrumah delivered at the last meeting of the old legislative assembly on the 5th of March, 1957 he spelt that "Our whole educational system must be geared to producing a scientifically-technically minded people…" (Ghana national, science, technology and innovation Policy, 2009).

However, soon after independence of Tanganyika and Zanzibar, then Tanzania introduced various initiatives to enhance the growth and development of science and technology education. Mushi (2009) asserts that, knowing that, the country had inherited colonial education which was based on theoretically and segregate system in terms of religious ground and social status so fevered the children of chiefs and well doing families. Education policy introduced during post independence phase (1961-1966) was thus featured mainly with decentralization and nationalization of education.

This was going with reviewing the education curriculum to relate with African environment. These initiatives increased the number of Tanzanian children to access science education via secondary schools, universities, and technical colleges.

The initiative of developing science and technology education in Tanzania since independence goes with the economic, social and Political ideology changes occurred within and outside of Tanzania. In 1980 Tanzania formulated sectors policies as fulfillment of SAP which was demanding third world countries to change from social and economic government ownership to private ownership. It was 1985 Tanzania formulated National Science and Technology policy for Tanzania as recognition of the importance of science and technology education for the development of the nation. The policy intended to establish relative priorities of programs for generating new knowledge and determine strategies for application of science and technology for the development of the country (URT, 1996). In the same efforts of developing science technology education in 1995 the government formulated Education and Training policy for Tanzania. One of the major aims is *"To promote science and technology trough intensification of vocational education and training, rationalizing of tertiary institutions, including the establishment of polytechnics…."*

In the current years Tanzania is running The National Development vision 2025, The National Strategy of Growth and Reduction of Poverty (NSGRP), and Millennium Development Goals (MDGs) which all these emphasize the application of science and technology in its implementation. Therefore, Tanzania has been staged on by expanding accessibility of education from primary schools to high education with purpose of enhancing the citizen to involve in these programs and policies with science and technological knowledge and skills. In the side of secondary school as the case of our study Tanzania has been running Secondary Education Development Program (SEDP) since July 2004.

Osaki (2004) argue that, the formulation of Secondary Education Development Program aimed to increase its access and to cope with the continued high demands for secondary education in the country, and on the other hand, the demands of the modern world are no longer satisfied with the outputs of primary education alone.

1 .2 THE STATEMENT OF THE PROBLEM

The increase of secondary school education does not match with students' academic performance in science subjects since the establishment and implementation of Secondary Education Development Program (SEDP) in Tanzania. In the 25th April 2008 speech to the Members of Parliament (Pinda, 2008) the Prime Minister of the state said that, in the past three years (2005, 2006, and 2007) there has been a decrease in performance in science subjects with worse drop in mathematics. This was specifically in biology, physics and chemistry where by the decrease was said to range from 30% in 2005 to 25% in the year 2009 (NECTA, 2005; 2009 in Nyerenda 2012). In the same context Mabula (2012) indicated that, the students registered in Form Four National Examination of 2010, only 30.5%, 43.9%, 44.6% Biology, Chemistry and Physics respectively passed the exam and other percents remains they passed poor. The main mentioned factor contributing the decrease rate in performance in science subjects in secondary schools many students are performed poor in these subjects.

Some studies have identified some of the factors contributing to students' poor academic The study of Akinola (2006) and Askia (2010) mentioned student's environment, examination questions format, structuring of the curriculum, and foreign languages as the factors contributing to students' poor academic performance in science subjects while Mwajombe and Siwel (2012) and Mwinsheikke (2003) mentioned shortage of instructional material, lack of science laboratories, language of instruction, shortage of qualified science teachers and students' age and sex as factors contributing to students' academic performance in science subjects.

Until 2004 year Gairo district has one public secondary school, thus since 2004 there is multiple increase of public secondary schools up to eleven. Therefore, high increase of secondary school in Gairo district has greatly influenced the researcher to undertake this study and come up with the intention to assess the current status of students' academic performance in relation to the initiatives implemented to improve students' academic performance in science subjects.

1. 3 Objectives of the study

1. 3.1 General Objective

The general objective of the study was to assess the students' current status academic performance in science subjects in reference to the initiatives taken to improve students' academic performance in science subjects.

1. 3. 2. Specific objectives

(i) To examine the students' current status academic performance in science subjects.

(ii) To identify the current factors contributing to students' poor academic performance in science subjective.

(iii) To examine the present initiatives implemented to improve students' academic performance in science subjects.

(iv) To suggest the possible measures to be taken to improve students' academic performance in science subjects.

1. 4 Research questions

When conducting this study, the researcher was guided by research questions which are:

i. What is the students' current status academic performance in science subjects?

ii. What are the current factors contributing to students' poor academic performance in science subjects?

iii. What are the present initiatives used to improve students' academic performance in science subjects?

iv. What are the possible measures to be taken to improve students' academic performance in science subjects?

1. 5 THE SIGNFICANCE OF THE STUDY

Some studies have discussed the place of science subjects in the development of the society worldwide. This goes with students' academic performance in these subjects showing that there is high improvement in performance in some countries as well as worth performance in other countries especially in developing countries such as Tanzania. It is from that junction therefore, present study intend to assess the current

status of students' academic performance in science subjects in relation to the initiatives implemented to improve students' academic performance in ordinary public secondary in Tanzania with the special attention of Gairo district. From that juncture the study was intended to assess the current status of students' academic performance in science subjects in reference to the initiative taken to improve students' academic performance in these subjects specifically in ordinary public secondary schools.

This study will help educational planners, policy makers and educational stakeholders to in Tanzania to plan and educational stakeholders to see the status of students' academic performance in science subjects in ordinary public secondary schools in Tanzania and to plan science education according to the need of Tanzanian society. In other side, study will help the parents to see the importance of science education for the development of the nation and their children performance status in these subjects, thus to encourage them to study science subjects for the growth and development of the nation of Tanzania.

1.6 LIMITATION OF THE STUDY

In conducting this study, there were some anticipated limitations which I am thinking might be in one way or another were obstacles to my success. The limitations were as follows: First, geographical position of Gairo district was mountainous with poor communication infrastructures and some of the secondary schools which were sampled were not reached on time by the researcher. Second the element of time. I was trying to focus that if at all I want to have good results to my study I need more time to go everywhere in Gairo district collecting information but that was not possible to reach all eleven wards in the district, so the researcher was selected only few Wards which have public secondary schools to conduct the research according to budgeted fund and time.

1.7 DELIMINATION OF THE STUDY

Through a case study design in primary and secondary data correction the researcher restricted on his scope to the assessment of the current status of students' academic performance in science subjects in relation to the initiatives implemented in secondary schools in Tanzania and Gairo district was taken as the case study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter covered the theoretical and empirical literature reviews on the factors contributing students' poor academic performance in science subjects. The chapter started with theoretical literature by defining the terms of the study. Then the study surveyed on the importance of science and technological education. In theoretical review the study ended by looking on the related learning theories as well as the effective conditions of learning.

In empirical literature reviews the study surveyed on the environment influencing students' good performance in science subjects. Then part was looking related studies on the factors contributing to students' poor academic performance in science subjects. The part ended with finding the gap of the study as well as framing the conceptual framework of the study.

2. 1 Theoretical Review

2.1.1 Definitions of terms

(a) Science subjects in secondary schools

Science comprises the basic disciplines such a Physics, Chemistry, Mathematics and Biology. These are among of the core subjects which are required to be studied by all students from form one up to form four or six, but the students can leave them when they in form three. The students who supposed to study science subjects in form three to form four are those passed science subjects in National form two secondary school examinations. In the Certificate of Secondary Education Examination, the students are evaluated into practical and theoretical examinations.

(b) Secondary school

The term secondary schools in the Tanzania context refers to the post primary schools that offer "formal education to persons who will have successfully completed seven years of primary education and have met the requisite entry requirement" (MOEC, 1995: 6). Such schools are divided into two categories and these are: Ordinary Level Secondary Schools (4 years) and Advanced Level Secondary Schools (2 years). The purpose secondary school in national wide is to provide secondary education. According to the United Republic of Tanzania (1995: 6) states that secondary education refers to the post-primary formal education offered to individuals who have successfully completed primary education. The main objectives of secondary education are to provide opportunities for the acquisition of knowledge, skills, attitudes and understanding; to prepare individuals for further education and professional training; to inculcate a sense and ability for self study, self confidence and self advancement in the frontiers of knowledge and to prepare individuals to join the world of work. Lewin (2000) adds that secondary education holds the privileged position in all formal education systems. At the individual level, it is pointed out that, effective secondary schooling offers the individuals access to abstract reasoning and the kind of flexible thinking skills that are not offered at the primary level.

(c) Public/Government Secondary Schools

The term Government Secondary School is defined as a school directly maintained and managed by the ministry or a local authority. These are secondary schools that are owned and financed by the central government through the Ministry of Education and Vocational Training or Local Authority. Government schools consist of two categories, namely, the traditional national schools and community built secondary schools (ward secondary schools). The latter are the result of the education decentralization initiative (Mafuru 2011). Though they are built by the local communities, on the basis of the two broad categories of secondary school ownership in Tanzania, they are operated and managed by the government.

(d) Students' poor academic performance

According to Armstrong (2004) performance is often defined in output terms as the achievement of quantified objectives. The objectives can be resulted into better or worse performance at the end of the activities. According to Brumbach (1988) contends that performance refers to both behaviors and actions of works to achieve results or outcomes. Behaviors are outcomes in their own right and reactions to the product of mental and physical effort applied to task. Performance is the results of reaching the intended goal and objectives put by individual or organization. In school context Nsumba (2003) asserts that performance defined in terms of students' test scores, examination results, students' ability to socially apply what is learnt, and the rate at which students move to high institution of learning. He adds that performance is the ability of the school to transform students to requisite skills for survival.

Arem (2000) define students' academic performance as the case of our study as the performance that is adjudged by the examinee and some other significant as falling below an expected standard. The interpretation of expected or desired standard is appreciated from the perpetual cognitive ability of the evaluator of the performance. The author show the disadvantages of poor academic by asserting that, that academic failure is not only frustrating to the students and the parents, its effects are equally grave on the society in terms of dearth of manpower in all spheres of the economy and politics. Asikhia (2010) adds that students' poor academic performance is any performance that falls below desired standards. The study concludes that, the concept of poor academic performance is very relative and this depends on so many intervening variables.

2. 1. 2 The importance of science and technology education

Science and technology are keys to socio-economic development in an increasingly interconnected world. It is therefore imperative that developing countries like Tanzania embrace science and technology as a vital tool for accelerating the country's socio-economic development (URT, 1996).

Development of any country depends on how people posses science and technological knowledge and skills and using it to convert raw material to products. According to Hamilton et al (2010) rapid development of China, India, South Korea, Singapore, Malaysia and a few countries results from their efforts of investing more in science education. Every country sees Science and technology as one of strategy which should be applied in poverty fighting.

The recognition of science and technology education has been touched every nation especially third world countries and some measure have been taken. Watkins & Verma, (2008) quotes the president of Rwanda paul Kagame that, "We will continue to invest in our people and strive to open up the frontiers of science, technology, and research as we broaden our trade links with our neighboring countries and beyond" He call African countries to invest in science and technology education by saying that, "We in Africa must either begin to build our scientific and training capabilities or remain an impoverished appendage to the global economy". According to the resent World Bank publication in Utz and Aubert (2008) Tanzania still lacks 'the sound base of an adequately qualified and trained workforce to spur further innovation, technological and economic development. The study concluded that Tanzania will attain the Vision 2005 goals when investing more in science and technology education.

2.1. 3 LEARNING THEORIES

Explanations of what learning happen within learners constitute learning theories. According to Armstrong (2006) Learning theories describe in general terms on how people learn, but individual learners will have different styles – a preference for a particular approach to learning. Theories focus on increasing learner's motivation and performance by linking the outcomes that learners receive to the performance of desired behaviors and the attainment of goals.

Hammer (1974) defines learning as a relatively permanent change in person's knowledge or behavior that results from practice or experience. Learning takes place when learners are able to perform a certain behavior to receive certain outcomes.

Thus, provision of education is intended to enable learners or the whole society to take part on development in social economic, political and science and technology development. Honey (1998) concludes that learning is complex and various, covering all sorts of things such as knowledge, skills, insights, beliefs, values, attitudes and habits. Individuals learn for themselves and learn from other people. Individuals learn for themselves and learn from other people they learn as members of teams and by interaction with their teachers, peers and people outside the school. People learn by doing and by instruction. The ways in which individuals learn differ, and the extent to which they learn depends largely on how well they are externally motivated or self-motivated. Learning theories includes the following theories:

(i) Social learning theory

Social learning theory states that effective learning requires social interaction. Wenger (1998) suggested that we all participate in 'communities of practice' (groups of people with shared expertise who work together) and that these are our primary sources of learning. According to Jones (1993) social learning theory takes into account how learning and motivation are influenced by people's thoughts and beliefs and their observations of other people's behavior. The society beliefs, culture, traditions and attitudes towards education are agents of motivating learners in learning since they interact with the community member. In social learning theory good behavior shown by students are reinforced but the worse one are punished. Teachers and parents are encouraged to motivate children when show good performance in subjects and teachers are responsible to prepare conducive learning environment which motivating learners in interacting with the materials and learning methods.

(ii) Experiential Learning theory

People are active agents of their own learning (Reynolds *et al* 2002). Experiential learning takes place when people learn from their experience by reflecting on it so that it can be understood and applied. Learning is therefore a personal 'construction' of meaning through experience as Reynolds et al (2002) noted.

Rogers (1983) as 'Constructivists' believe that experiential learning will be enhanced through facilitation – creating an environment in which people can be stimulated to think and act in ways that help them to make good use of their experience. Armstrong (2006) concludes that, learning through experience can be enhanced by encouraging learners to refract on and make their better use of what they learn through their own work and from other performance. Self-directed learning and personal development planning activities with help from facilitators are also underpinned by experiential learning.

2. 1.4. Conditions or principles of effective learning

The learning theories and concepts cannot be applied if there are no conducive conditions for learning. Application of learning theories is applicable if the learner has some certain learning conditions. Armstrong (2006) has analyzed the following conditions for effective learning to take place for individual students in learning context.

(i) Motivation to learn

Individuals must be motivated to learn. Armstrong (2006) argued that they should be aware that their present level of knowledge, skill or competence, or their existing attitude or behavior, need to be developed or improved if they are to perform their work to their own and to others' satisfaction. They must, therefore, have a clear picture of the behavior they should adopt. To be motivated, learners must gain satisfaction from learning. They are most capable of learning if it satisfies one or more of their needs. Conversely, the best learning program can fail if they are not seen as useful by those undertaking them.

(ii) Self-directed learning

Armstrong (2006) argue that self-directed or self-managed learning involves encouraging individuals to take responsibility for their own learning needs, either to improve performance in their present job or to develop their potential and satisfy their career aspirations. It can be based on a process of recording achievement and action planning that involves individuals reviewing what they have learnt, what they have achieved, what their goals are, how they are going to achieve those goals and what new learning they need to acquire. The learning program can be 'self-paced' in the sense that learners can decide for themselves up to a point the rate at which they work and are encouraged to measure their own progress and adjust the program accordingly. Self-directed learning is based on the principle that people learn and retain more if they find things out for themselves. But they still need to be given guidance on what to look for and help in finding it. Learners have to be encouraged to define, with whatever help they may require, what they need to know to perform their job effectively.

They need to be provided with guidance on where they can get the material or information that will help them to learn and how to make good use of it.

(ii) Learning goals, direction and feedback

Effective learning is more likely to be achieved if learners have learning goals. They should have targets and standards of performance that they find acceptable and achievable and can use to judge their own progress.

They should be encouraged and helped to set their own goals. The learning outcome must be clear. Armstrong (2006) added that learners need a sense of direction and feedback on how they are doing. They should receive reinforcement of correct behavior. Self-motivated individuals may provide much of this for themselves, but it is necessary to have a learning facilitator, who is available to encourage and help when necessary. Learners usually need to know quickly how well they are doing. In a prolonged program, intermediate steps are required in which learning can be reinforced. The

content of the learning program may therefore need to be broken down into small modules or elements, each with an objective

(iv) Learning methods

The learning goals and the particular needs and learning style of the learner should indicate what learning method or methods should be used. Specific goals and understanding of individual needs help to select appropriate learning methods. It should not be assumed that a single learning method will do. A combination of methods is likely to produce better results. The use of a variety of methods, as long as they are all appropriate, helps learning by engaging the interest of learners. Learning is 'personal, subjective and inseparable from activity' (Reynolds, 2004). It is an active, not a passive process. As far as possible, therefore, the learning process should be active, although this may take more time than passive methods in which the learner is at the receiving end of some form of training such instruction. The more complex the skill to be mastered, the more the learning methods need to be active. Learning requires time to assimilate, test and accept. This time should be provided in the learning program.

(v) Levels of learning

Different levels of learning exist and these need different methods and take different times. At the simplest level, learning requires direct physical responses, memorization and basic conditioning. At a higher level, learning involves adapting existing knowledge or skill to a new task or environment.

Armstrong (2006) at the next level, learning becomes a complex process when principles are identified in a range of practices or actions, when a series of isolated tasks have to be integrated, or when the process is about developing interpersonal skills. The most complex form of learning takes place when learning is concerned with the values and attitudes of people and groups. This is not only the most complex area, but also the most difficult.

(vi) The role of memory in learning

According to Beardwell et al (2004) argues that memory plays a significant role in learning, and some understanding of it can therefore be used to make learning more effective. Memory involves three kinds of information storage: the storage of sensory memories, short-term or primary memory, and long-term or secondary memory. Unless transferred to short term memory, the sensory memory retains sense data for probably less than two seconds. Unless incoming is paid particular attention or rehearsed, short term memory holds it for up to 30 seconds and appears to have limited capacity, where as long term memory appears to have unlimited capacity and to hold information for years. What is therefore of concern for effective learning is the ability to transfer information to the long term memory.

2.2 Empirical review

2.2. 1 The environmental facilitation to students' academic performance

Some literatures have discussed the environment that influence students' good academic performance in science subjects by categorizing them into parental, school, teachers and students' environment**.**

a) Parental factors

(i) Parents' socio-economic status

Social economic status has been influencing students' academic performance in such away. The studies of Amato (1987) and Williams et al (1991) compared the performance of children from low social economic status and children from high social economic status.

They argue that children from low social economic status (SES) family have lower retention rates and difficulties with their studies and display negative attitudes to school compared to children from high economic status. The students from good social economic status will be enrolled in a good school and easy accessibility of learning resources such as various text books, and extra studies as student's influential towards

good performance contrary to the one come from poor social economic family. Mbugua (2012) argue that good parenting supported by strong economic home background could enhance strong academic performance of the child. They add that, high social economic status family predicts good academic performance of the child, where the child is properly counseled in the choice of his or her courses and vocation that matches his mental ability, interest and capability. The students from high social economic status studying science have a free choice based on their interests on the course under study since economic status allows financial stability for students' progression in his or her studies. On the other hand, the children from poor socio-economic parental status will find themselves roaming about the street laboring to make ends meet.

(ii) Family Educational Background

The family is the primary socializing agent of which a child is a member since it is in the family the child is born. One may rightly say that the family is the informal socializing agent since all its members are blood relations (Asikhia, 2010). The families differ vastly in terms of their significance in social order as some have more prestige, dignity, money and power than others. Within the family children are interacting with family members with different education inputs who promote better understanding to them.

The children have models in the family members who negatively or positively reinforce them for better or poor performance in their subjects.

(iii) Family sizes

The size of the family predicts the performance of the children in the schools. According to Asikhia (2010) the larger the family the less the attention and devotion of each child by the parents and the more the difficulties encountered by the parents in meeting the needs of the children both physically and emotionally. The large family size children have no equal chance to be enrolled/sent to school because it act as a burden to the parents in providing academic needs to the student starting with students' fees and other necessities that enhance learning, and the student from larger family size they sometime miss their essential rights to education especial the last born child they do not sent them

to school. Rich (2000) adds that parents with large family characterized with lower education and income to accommodate each child in their studies compared with parents with less family. This lead to poor performance to the students who had a chance to be enrolled to school since they do not meet their academic needs as their many and others stay at home without being sent to school as the parental ability to accommodate their children is low. Machin (1998) argues that family size is weakly variable to be associated with students' educational performance but many variables must be involved to influence students' performance.

b) The school factors

(i) School Location and Physical infrastructures

The school location and physical infrastructures influence students' performance. The school which has been located in conducive environment with good physical infrastructures motivates learners to involve more in learning. Isangedighi (1998) asserts that an entire unattractive physical structure of the school building could de-motivate learners to achieve academically.

School infrastructures involve teachers and learners accommodations, science laboratories, water citations, students discussion venue, and electricity source that meet the demand of both teachers and the students to make teaching and learning more effectively and successful. All these combined together to influence students' academic performance.

(ii) Type of the school

The types of the school the child enrolled influence his or her academic performance. Catherine and Yala (2011) reveal that the type of the school whether single sex or mixed or public or private has effects on the on the academic performance of students in mathematics. The type of school students enrolled has a great influence their performance in mathematics with other subjects because some of the schools have qualified teachers being paid good salaries and accommodations well as good learning environments to the students especially private or boarding school. According to

Sparkes (1999) asserts that, the researches in Britain show that schools have an independent effect on student While there is less data available in Australia, several studies using the Longitudinal Surveys of Australian Youth have found that students attending private non-Catholic schools were significantly more likely to stay on at school than those attending state schools (Long et al., 1999; Marks et al., 2000 in Considine and Zappala 2002).

(iii) Quality of teaching Staff

The quality of the staff involves teachers' qualification in their studies,skills, experience and observation of teaching methodology (pedagogical knowledge) as well as being (having a content knowledge) competence in subjects taken by those teachers. The study of Adeyemi (2008) on the relationship between teacher experience and students' performance in mathematics found that the teaching staff having with teacher with experience and competence predicts students' performance in all subjects in secondary schools in Ondo state Nigeria. Experience matters on every attempt even in studies as it provide a wide range of content knowledge to the teacher and easy transfer of knowledge to the students and predict their future tread of students' performance.

Jones (1997) observed that teachers are a key input and a force to reckon with in school and Sweeney (1998) made similar observation about schools in Mississippi, USA that students scored better in mathematics when taught by teacher with more years of teaching, considering the common saying that experience is the best teacher. He concludes that the quality of teaching staff in any school predicts students' performance in any subjects. In connection with the common say that experience matters, the experience teacher is more fluent and much exposed in various corners of teaching and students' learning environments and their behaviors.

In the same context the quality of the staff also includes teachers with different characteristics. Tayo and Adediwura (2007) identified teachers' characteristic influencing students' academic performance including teachers' knowledge of subject matter, teaching skills, attitude in the classroom, teachers, qualification and teaching

experience. Students are likely to be taught with skilled and qualified teachers than unskilled and qualified teachers since their lack some subjects presentation strategies although may be competent enough. On the side of teachers attitude toward subjects Catherine and Yala (2011) argue that, the attitudes of the teachers ….subjects have a very great influence in the academic performance of the students in mathematics.

(iv) Teaching and learning materials

Teaching and learning materials include textbooks, video and audio tapes, computer software and visual aids. Kitao (1997) argued that, materials influence the contents and the procedures of learning. Littlejohn and Windeatt (1989) strength that materials have a hidden curriculum that includes attitudes toward knowledge, attitudes toward teaching and learning, attitudes toward the role and relationship of the teacher and student, and values and attitudes related to gender, society, etc. Materials have an underlying instructional philosophy, approach, method, and content, including both linguistic and cultural information. The school where learning and teaching material are abundant students are likely to perform well in deferent subjects. Teaching and learning materials feats to all types of learners include auditory learners, visual learners and tactile learners. This facilitate easy understanding to the students and consolidation of their knowledge by creating a long term memory and easy to remember what they see, heard and touch during learning processes.

Teaching and learning material especial in science subjects should enable students to create concepts themselves that will easy to remember. Materials should be designed according to student's level of understanding, socio-cultural & economic positions/status and students' historical background.

The language used should be simple and known/popular to the most of the students. Complicated materials make learners to be bored with the subjects and they can fail the subject because of material complication.

(v) Class sizes

Class sizes have also been identified as determinants of students' understanding and academic performance in their subjects.

Studies have indicated those schools with smaller class sizes perform better academically than schools with larger class sizes since teacher has ability of controlling and organizing the students. Teacher with a lower class size have great access to his/her students by knowing their strength and weaknesses in terms of academic capabilities and their behaviors or attitudes.

Kraft (1994) in his study of the ideal class size and its effects on effective teaching and learning in Ghana concluded that class sizes above 40 have negative effects on students' achievement. Asiedu-Akrofi (1978) indicated that since children have differences in motivation, interests and abilities and that they also differ in health, personal and social adjustment and creativity generally good teaching is best done in classes with smaller numbers that allow for individual attention.

c) Teachers' factor

(i) Teachers' payment

The teachers' payment influence students' academic performance since teachers are motivated to teach. Shayo (2011) argues that unfortunately in developing countries teachers' wages were considerably below the level necessary to ensure their adequate motivation. The study adds that Low payment which not goes with price inflection in products has reduced science teachers' work commitment and increased hardship life for them but if teachers' payments are taken or not in consideration would influence students' academic performance.

(ii) Teachers' motivation and commitment to work (Working spirit)

Learning is a process of interaction between teachers and students as they both participate in the learning process, but with more weight given to teachers to show the way. Learning achievements can mainly "be determined in classroom by motivated

teachers who plan for teaching, put into practice what they have learned" (ADEA, 2006). A highly motivated person puts in the maximum effort in his or her job. Several factors produce motivation and job satisfaction. Young (1988) examined the job satisfaction of Californian public school teachers in the united state of America (USA) and found that one of the overall job predictors was the salary one earned from it. The study of Lockheed et al (1991) indicated that lack of motivation and professional commitment produce poor attendance and unprofessional attitudes towards students which in turn affect the performance of students academically. Ndawi (1994) argues that in Africa motivation is critically ignored factor in all level of policy choice. Motivation of teachers helps to retain teachers at their work places and it includes "materials and psychological needs.

(iii) d) Students' factors

(i) Student's individual inherent characteristics

Academic performance is individual inherent potentials in terms of intelligence combined with other sociological factors. Ojerinde (1981) in his study identified personality factors such as anxiety, achievement, motivation and level of interest as factors that influence students' academic performance. The consistence of these claims was asserted by Ford (1985), which claimed that student with high self-efficacy received higher grades than those with low self-efficacy and that student with negative self-concept have poor academic performance. Tella (2007) adds that student's individual characteristics such as intelligence, cognitive style, and personality play an important role in learning and instruction as does the context of learning.

(ii) Students' background knowledge in science subjects

Background knowledge is all about knowledge learners have when entering a learning environment that is potentially relevant for acquiring new knowledge. According to Kitao (1997) argues that background knowledge is students experience in the subject matter presented to them. Students learn more effectively when they already know

something about a content area and when concepts in that area mean something to them and to their particular background or culture.

Students' background knowledge in subjects influence performance since the students transfers the entire knowledge to learn new concepts

2.2.2 The factors contributing to students' poor academic performance in science subjects

The question of students' academic performance in secondary schools has already been studied by many researchers with different answers coming up. The only difference with this research is that here the researcher concentrates more on ordinary public secondary schools students' academic performance in science subjects. Below are some of the researcher managed to come across and picked up the important thing that might be similar to this study and will look the gap and see the possibility of additional things to them. Many ordinary public and private secondary schools are facing students' academic performance in science subjects within and outside of the school.

The study of Fonseca and Conboy (2006) on secondary student perceptions of the factors effecting failure in science subjects in Portugal, 71% students perceived that poor preparation has been contributing on their poor academic performance in science subjects examinations. The national board of examination in Portugal and schools administration do not provide enough time for preparation before sitting examinations.

The study conducted in Korea by Neathery (2010) in the Elementary and secondary students' perceptions towards science: Correlations with gender, ethnicity, ability, grade, and science achievement indicates that, the students in the high ability group performed with greater success than the average and low ability groups. The performance by the high ability group showed a 28.26 difference in mean scores from the performance of the low ability group. The study concluded that students' ability contributes on students' performance in science subjects whether poorly or better performance.

The study of Palmer (2009) on the factors that contributing to low achievement on science portion of the Ohio high school graduation test, the study identify demographic factors that affect student's attitudes as factor contributing to poor performance on the Ohio Graduation Test.

The study elaborates that students enter school with varying degrees of science and mathematics skills. Lower skills can be attributed to such factors as cultural/ethnic attitudes, socioeconomic status, and level of parental education as demographic factors pertaining to poor academic performance. The gap existing prior to entering school between lower achieving students and higher achieving students tends to carry, without narrowing significantly, throughout the entire educational process, hence should be improved prior to entering school, thus reducing the learning gap that exists between students of differing backgrounds.

The study of Akinola (2006) on causes of Mass Failure in senior secondary school Chemistry in Ijebu East Local Government Area of Oguna State the study reveals that causes of mass failure of students in senior secondary Chemistry Examination in Nigeria include teacher's methodology, structuring of the curriculum, and the concentration of examination questions on few topics and the inability of students to perform enough practical before their examination. He adds that most of the textbooks used in secondary schools are written by foreign authors. Languages used in some of the texts are complex and ambiguous. Hence, it becomes difficult for students to comprehend.

The study of Askia (2010) on Students and Teachers' Perception of the causes of poor academic performance in Oguno state secondary schools [Nigeria]: Implications for couselling for national development. 70% students respond that the students' environment contributes on their poor academic performance in science and other subjects. 26.3% students mentioned peer groups, divorce, and students' negative attitudes toward science subjects cause them to perform poorly in science subjects. In same study, 31.41% students perceive that teachers' qualification as having impact on their academic performance.

Okwelle and Wali (2010) on psychological factors influencing students performance in integrated science of junior schools certificate examination in Rivers State, Nigeria, the study reveals that 75% students of junior secondary schools view that lack of concentration in preparation for examinations, anxiety and restlessness in examination hall, emotional instability and poor recall of learned concepts and increase in common mistakes in response to examination questions are stress-induced variables which contribute to poor academic performance in Junior School Certificate Examinations in Integrated Science. In the same study 75% view that, fear of attending school, fear of school academic work, load, and poor social maladjustment in school and fear of failure in participating in classroom interactive questions are variables of phobia which contributes to poor performance of students in Junior School certificate Examination in Integrated Science.

The study support its finding by referring the study of Robert (2002) that school environment often create fear in the mind of students leading to poor concentration in their studies, poor participation in classroom learning and poor performance in examinations.

The study of Mbugua et al (2012) on the factors contributing to students' poor performance in Kenya certificate secondary education in Kenya identified that the social economic including students' parents/guardian education background, source of income and cultural practices factors are contributing on students' poor academic performance in science subjects in Kenya Certificate Secondary Education. The results indicate that most parents/guardians in Kenya (66%) do not have education beyond secondary school education, 27.5% have college education and only 6.2% have university education. Thus they may not be good role models for their children in academic matters. The study continue indicating that the source of family income as faming (39.9%), salary (38%), business (16.8%) and casual labor (5.3%) and students whose parents rely on them are likely to get inadequate learning resources, and other essential requirements. Study concluded that, parental social-economic status associated with diminished resources has contributing to lower academic achievement.

The study of Mwajombe and Siwel (2012) on preferences on science subjects: Does this affect their performance?A Case of Udzungwa secondary school, Kilolo, Iringa, Tanzania, the study reveals those students' characteristics such as age, sex, together with biological changes contribute on students' poor academic performance in science subjects. The study shows that, the majority of students (76.7%) interviewed were the age of 14- 16 years (adolescent age) in such age need high guide, the absence of it students always ends in poor academic in their study. The findings reveal that both students and teachers agree that sex has influence of academic performance in science subjects.

In supporting students' age affect students' subjects performance, Mbilinyi et al (1986) asserts that school performance to most school girls at such age felt that, after completion of school they would find a husband who will provide them with economic support hence reluctant in their study.

The study of Mabula (2012) on promoting Science subjects choices for secondary school students in Tanzania: Challenges and opportunities, asserts that, students' poor academic performance in science examinations in Tanzania is contributed by the problems facing public secondary schools such as lack of laboratories, shortage of qualified science teachers and shortage of instructional materials. In the study one of the science teacher responded that "Science teaching in Tanzania is currently facing a serious shortage of teaching facilities, this condition reduce the motivation in the teaching process due to difficulties in the process of teaching some abstract science concepts. In fact classroom teaching environment is so discouraging due to lack of teaching science teaching materials. This inadequacy is forcing us to teach all aspects of science in theory and leave out the more difficulty aspects which are difficult to teacher without a practical session". The study concludes that teaching science subjects in such environments predicts that the students are ending in poor academic performance in science subjects

2.3 Research gap

Many studies have tried to their level best to identify or assessing some factors which contributing to students' poor academic performance in science subjects and they have

came up with different answers on the problem. The discussion on the factors contributing to students' academic performance in science subjects elsewhere the world should be linked with the initiatives taken by the institutions themselves ,and government to tackle the problem in order to improve students' academic performance in science subjects in all level of education. Some countries' governments have tried implementing some initiatives to improve students' academic performance in science subjects in deferent level of education.

For instance from 2009 the government of Malaysian abandon English language as language of instruction of sciences subjects in all level of education. In United state of America the falling students' performance in science, technology, engineering and mathematics education, one of the initiative taken was to put force on workforce development and college readiness and regularly involving cooperation among the K-12, postsecondary and business sectors.

Therefore the present study intended to assess the current status of students' academic performance in science subjects in relation to the initiatives implemented to improve students' academic performance in science subjects, a case of Gairo district, Morogoro.

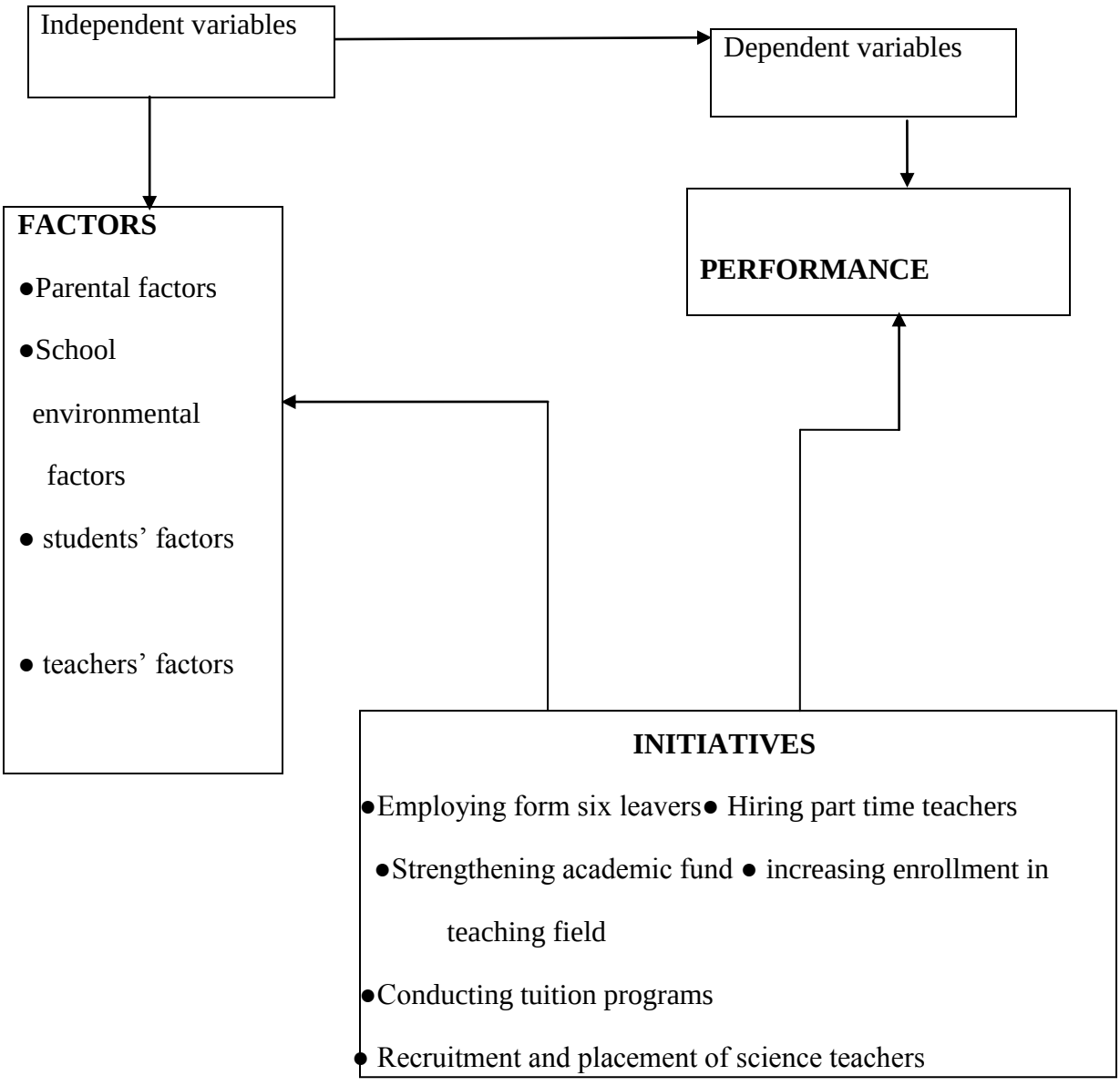
2.4 The conceptual framework

The status of students' academic performance in science subjects has been explained by different studies in different ways in every level of education. Sometimes some studies have shown the raise or down falls of students' academic performance in science subjects in every level of education such as secondary school. They mentioned that the factors that facilitate students' academic performance in science subjects sometimes are the factors which contributing to students' poor academic performance in science subjects in every level of education such as secondary school level. The factors which facilitate or hinder students' academic performance in science subjects in secondary schools have been divided by different studies as parental factors, school environmental factors, students' factors and teachers' factors.

When students' academic performance in science happens some initiatives have been taken to overcome the problem. Some initiatives implemented to overcome the state of students' poor academic performance in secondary school depend on the environment of institutes, districts, regions or the nation itself.

The conceptual framework displays the relationship of factors contributing on students' academic performance in science subjects, and the initiatives implemented to improve students' academic performance in science subjects, a case of Gairo district. The the factors and the initiatives implemented are independent variables while students' performance as dependent variable.

Figure 1: Conceptual Framework



Source: Developed by the researcher 2013

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter covers research design, units of inquiry, sampling procedures and sample size, types of data to be collected, data collection techniques, data processing, analysis and presentation.

3.1 Research Design

This study employed a case study to undergo in depth assessment of students' academic performance in science subjects in ordinary public secondary schools. The study preferred to employ case study to other research designs since the case study allow the researcher to concentrate in a single organization that is Gairo District than others research designs which concentrate more than one organization such as survey research design.

3.2 Area of the Study

This study was conducted in Gairo district, in Morogoro region, focusing on ordinary public secondary schools where the respondents were employed public schools science teachers, students and school administrative leaders.

Gairo district is among of the seven districts of Morogoro region having a total of eleven public schools, all of them being community based secondary schools. The area of Gairo district is covering 1851.3sq Km with two divisions that is Gairo and Nongwe. The district comprises eleven wards with thirty six villages. The main native tribes are Kaguru being the largest tribe, Nguu, Masai, Gogo etc. The main economic activities is agricultural production in which maize is the main crop cultivated at large, potatoes, beans, sun flower millet groundnut and others in low density.

Topography of the area includes mountains, plains and other physical features. Ninety percent of Gairo district population is agriculturalists and pastoralists engaging in small and medium production. The researcher was familiar with area in teams of its geographical position and economic activities carried within the area.

3.3 Population of the study

The population of the study comprised six out of eleven ordinary public secondary schools which have sixty four employed science teachers, eighteen (headmasters, academic teachers and second masters) and two thousands and two hundred forty nine students from sampled secondary schools.

3.4 Sample and Sampling Procedures

Randomly sampling was used to get **six** ordinary public secondary schools out of eleven public secondary schools. It was only employed science teachers from sampled secondary schools through purposive sampling were used to get thirty science teachers from six sampled secondary schools. Then Purposive sampling was also used to get **10** administrative leaders. In another hand randomly sampling was used to get **50** students from six sampled secondary schools, at least eight students were sampled in each school. Total of **90** respondents were expected to be used in providing the data on the study.

3.5 Data Collection Methods.

The methods employed for the collection of both primary and secondary data in this study were be questionnaire, guided interview and documentary review whereby both primary data and secondary data will be collected**.**

3.5.1 The Primary Data Sources

Primary data was collected by means of questionnaire and guided interview. Regarding these, the researcher was guided by the general and specific objectives of the study.

(a) Questionnaire.

The researcher preferred to use questionnaire with the facts that, the questionnaire is low cost, it is free from bias of the respondents and large samples were reached for short time and thus the results can be made more dependable and reliable . The questionnaire was provided only to science teachers and students of ordinary public secondary schools sampled.

(b) Interview

This was a face to face conversation between interviewer and interviewee, which was aimed at gathering data from the sample sized. The method was applied only to school administrative leaders such Headmasters, Second Masters and Academic teachers.

3.5.2 Secondary Data Source

It was important for case study research to use multiple sources of data to get as a broad view as possible about the specific issues under the study. Secondary data sources included documentary review whereby various files, reports were surveyed; also the collection of data was based on other documents such as journals and other relevant materials to factors contributing to students' poor academic performance in science subjects in ordinary public secondary schools.

3.6 Data Processing, Analysis and Presentation

Data processing was the process of converting data into a form that can be processed by computer. It also means the storing or processing of data by a computer. In data processing stage, the data were defined as number or characters to represent measurements from observable phenomena. After all these processes then the data were processed using the Statistical Package for Social Science software package.

Data analysis can simply be explained as a systematic process which involves working with data, organizing, breaking them into manageable units, synthesizing them, searching for patterns, discovering what is important and what is to be learned and then deciding what to tell others. For the case of Quantitative data as used in this work, Statistical Package for Social Science (SPSS) software method was used in data analysis

where by questionnaires were coded and be applied in the SPSS software and then be interpreted or explained to give the meaning since this is a scientific package for social science research. For Qualitative data analysis content analysis was used. The format used in presentation of the findings included tables

CHAPTER FOUR

4.0 PRESENTATION, ANALYSIS AND DISCUSION OF FINDINGS

4.1 Introduction

The data were analyzed, coded and tabulated as initial stages for analysis as it will be shown in the coming sections. The research findings are analyzed based on research objectives /questions, the findings are drawn on the responses acquired from the administered questionnaires and interviews conducted to various respondents, science teachers, administrators and students in Gairo District.

4.1 Description of Respondents

4.1.1 The sex of the respondents

As being indicated in the table (4.1) bellow, the finding indicates that most of respondents were male that is 71.0% where as females were 29.0%.

Table 4.1: Sex of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	44	71.0	71.0	71.0
	Female	18	29.0	29.0	100.0
	Total	62	100.0	100.0	

Source: Research findings computed from collected data July, 2013

4.1.2 Marital status of the respondents

This study involved two different groups. The first group was a group of students who are automatically single and the second group was a group of Teachers who were 16. Out of these 16 teachers 68.8% were single and 31.2% were married.

Table 4.2: Marital status of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	11	68.8	68.8	68.8
	Married	5	31.2	31.2	100.0
	Total	16	100.0	100.0	

Source: Research findings computed from collected data July, 2013

4.1.3 The age of respondents

The majorities (72.6%) of the respondents were aged 10-20 years who all most are secondary school students and 27.4% respondents were science teachers and secondary's administrators as indicated in the table below.

Table 4.3: Age of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10-20	45	72.6	72.6	72.6
	20-30	12	19.4	19.4	91.9
	30-40	4	6.5	6.5	98.4
	40-50	1	1.6	1.6	100.0
	Total	62	100.0	100.0	

Source: Research findings computed from collected data July, 2013

4.1.4 Forms of respondents (student)

All most students' respondents involved were in form two, three and four as indicted in table 4.3.

Table 4.4: Forms of respondents (students)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Form two	7	11.3	15.2	15.2
	Form three	16	25.8	34.8	50.0
	Form four	23	37.1	50.0	100.0
	Total	46	92	100.0	
Missing	System	4	8		
Total		50	100.0		

Source: Research findings computed from collected data July, 2013

4.1 .5 Educational Level of Respondents (science teachers and School administrators)

As being shown in the table (4.5) 16.1% of respondents were diploma holders where by 9.7% are degree holders and those are science teachers and school administrators.

Table 4.5: Educational Level of Respondents (science teachers and School administrators)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Diploma	10	16.1	62.5	62.5
	Degree	6	9.7	37.5	100.0
	Total	16	25.8	100.0	
Missing	System	46	74.2		
Total		62	100.0		

Research findings computed from collected data 2013

4.1.6 Status of teachers at their work station

Out these 16 respondents who were teachers, 6 were administers and 10 were science teachers. Furthermore, 1 was a second master and the rest five administrators were

headmasters from different public school. In this study 37.5% were administrators and 62.5% were science teachers.

Table 4.6: Status of teachers at their work station

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Administrator	6	9.7	37.5	37.5
	Science teacher	10	16.1	62.5	100.0
	Total	16	25.8	100.0	
Missing	System	46	74.2		
Total		62	100.0		

Research findings computed from collected data 2013

4.1.7 Years of experience

Table (4.6) indicates years of working experience of science teachers and schools administrators. The findings reveal that many science teachers have less than five years being teaching science subjects in public secondary schools.

Table 4.7: Years of experience of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 year	4	6.5	25.0	25.0
	2 years	1	1.6	6.2	31.2
	3 years	5	8.1	31.2	62.5
	4 years	1	1.6	6.2	68.8
	6 years	2	3.2	12.5	81.2
	7> years	3	4.8	18.8	100.0
	Total	16	25.8	100.0	
Missing	System	46	74.2		
Total		62	100.0		

***Source**: Research findings computed from collected data July, 2013*

4.2 Current status of students' academic performance in science subjects

The analysis table 4.7 indicates the current status of students' academic performance in science subjects in Gairo district.

It seen 75.8% respondents said that the current status of students' academic performance in science subjects is poor. They argued that always few students scored C and D credit compared with those get F credit during form four national examinations and interschool examinations. The findings reveal that, the major way of evaluating students' academic performance in science subjects is through tests, terminal, midterm, annual examinations and external examinations such national examinations, therefore the method is being used to recognize ongoing students' academic performance in these subjects. The researcher observed that all initiatives taken and implemented to improve students' academic performance in these subjects in this district are the result of interschool and external examinations which rank students' academic performance in science subjects.

During the interview between the researcher and the headmaster of Chakwale secondary school, he said that has five years in that school as the head of the school but no any student who have scored A or B credit in science subjects in Form Four National Examination but few students get C and D credit, and the majority fail extremely. This reveals that students' poor academic performance in science subjects is persistence phenomenon in public secondary schools in Gairo district.

Table 4.8: Current status of students' academic performance in science subjects

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Good	2	3.2	3.2	3.2
	Poor	47	75.8	75.8	79.0
	Average	13	21.0	21.0	100.0
	Total	62	100.0	100.0	

Source: Research findings computed collected data July, 2013

The researcher was not satisfied only with the findings in assessing the current status of students' academic performance in science subjects but also decided to review recently

examinations results documents. The aim of reviewing these examinations results documents is to prove if there is a problem of students' poor academic performance in science subjects in ordinary public secondary schools in Gairo districts. One of the recent years' examinations results documents reviewed by the researcher is National Form two secondary examination results Eastern zone, from two sample secondary schools. As can be seen in table 4.8 the students' academic performance in science subjects generally poor. The number of students performed with A, B, C and D credit are few compared with number of students scored F credit in reviewed examinations results.

Table 4.9 National form two examinations results for science subjects

A.M. SHABIBY					Gairo Secondary		
Subjects	Grade	2010	2011	2012	2008	2009	2010
Physics	A	1	0	0	0	0	0
	B	4	0	0	7	5	2
	C	31	6	0	24	16	4
	D	73	24	1	70	22	29
	F	55	79	24	48	108	58
Total		164	209	25	149	151	93
Chemistry	A	5	0	0	0	o	0
	B	25	0	0	4	3	4
	C	42	6	0	32	41	14
	D	32	46	3	63	56	16
	F	60	155	23	50	51	58
Total		164	207	26	149	151	93
Biology	A	0	0	0	0	0	0
	B	7	0	0	5	5	3

	C	21	16	1	18	31	5
	D	21	39	3	72	82	13
	F	115	154	22	54	36	72
Total		164	209	26	149	151	93

Source: Source: The united Republic of Tanzania Ministry of Education and Vocational training: Form two secondary examination results Eastern zone: Shabiby secondary school and Gairo secondary school, computed by the researcher July 2013.

4.3.1 Current factors contributing to students' poor academic performance in science subject

From the analysis table 4.9 it seemed that, 56 respondents that is equal to 90.3 % recognized the presence of current factors contributing to students' poor academic performance in science subjects, in public secondary schools, a case of Gairo district, Morogoro. The least was 6 respondents that are equal to 9.7% were not aware with the presence of factors contributing to students' poor academic performance in science subjects and were not responded on the questions demanded them whether there are any factors contributing to such situation in secondary school in Gairo district

Table 4.10 response on the presence or absence of factors contributing to students' academic performance in science subjects, a case of Gairo District, Morogoro

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	56	90.3	90.3	90.3
	No	6	9.7	9.7	100.0
	Total	62	100.0	100.0	

Source: Research findings computed from collected data July, 2013

During the research, the researcher managed to conduct interview between schools administrators and to distribute questionnaires to science teachers and students. From school administrators the researchers observed that the administrators recognize the problem of their students' poor academic performance in science subject, therefore they

try to solve this problem to their level best by employing form six leavers and part time teachers to teach science subjects in their secondary schools. When analyzing the questionnaires and the interview notes, the analysis revealed that, the major current factors contributing to students' poor academic performance in science subject for the case of public secondary schools found Gairo District are indicated in the table and followed with explanation.

Table 4.11 the factors contributing to students' poor academic performance

Poor teaching and learning methods	5	8.1
Lack of motivation to science teachers	8	12.9
Students' parents poverty	3	4.8
The role of language of instruction	7	11.3
Frequency changes of science subjects syllabuses and examination for NECTA	4	6.5
Science teachers absenteeism	6	9.7
Shortage of science teachers	10	16
Students' negative attitudes toward science subjects	4	6.5
Lack of hostels	3	4.8
Poor appreciation and recognition from school and government leaders	2	3.2
Nil	6	9.7
Poor enrollment criteria of primary school leavers	4	6.5
Total	62	100

(i) Shortage of science teachers

The researcher during findings analysis observed that, out of 62 respondents who where schools administrators, science teachers and students, 10 respondents which is equal to 16.13% said that shortage of science teachers in public secondary schools in Gairo district is highly contributing to students' poor academic performance in science subjects compare to art subjects. To overcome the problem of shortage science teachers, the findings reveal that all most sampled secondary school administrations employ Form

six Leavers who were taught science subjects in their education career to teach science subjects to these schools and are paid through students' parents contributions. During the research, the researcher was able to review sampled secondary schools monthly reports to see the presence and requirements of science teachers in these public secondary schools in Gairo district.

From the table 4.10 analysis, it shows that there is high shortage of science teachers in ordinary secondary schools in Gairo district. This enforce science teacher to teach one or two subjects to all classes available in certain schools. It encouraged that one science teacher should teach one stream of forty five students only for effective teaching and learning but in public secondary schools in Gairo this is impossible. Jones (1997) observed that teachers are a key input and a force to reckon with in school and Sweeney (1998) made similar observation about schools in Mississippi, USA that students scored better in mathematics when taught by teacher with more years of teaching, considering the common saying that experience is the best teacher. He concludes that the quality of teaching staff in any school predicts students' performance in any subjects.

Table 4.12 Number of teachers' availability and requirements in ordinary public secondary schools in Gairo district

		Kibedya secondary school	Shabiby secondary school	Gairo secondary school	Rubeho secondary school	Sekwao secondary school	Chakwale secondary school
available	Chemistry	1	1	2	-	1	_
	Physics	-	1	2	1	-	1
	biology	1	1	1	1	-	_
total		2	3	5	2	1	1
Requirement	Chemistry	3	3	2	2	3	4
	Physics	4	3	2	2	4	2
	biology	3	3	3	2	4	4
total		10	9	7	6	11	10
Total of students		312	570	600	315	550	400

Source: Tanzania secondary schools statistic form, computed by researcher July 2013

In other hand the findings revealed science teachers' turnover is one of the factors contributing to shortage of employed science teachers in Gairo district.The findings revealed that, district receive few science teachers from Ministry of education and Vocation training but these few teacher some of are quite their posted stations and the main reason to quite their posted secondary schools in Gairo districts is the hardship environment of the district in which some of the schools are in remote areas which they think can't attract them. Science teachers' turnover increase shortage of science teachers in Gairo district hence reducing the efforts of the schools and the district to improve students' academic performance in science subjects. The table 4.14 indicates the trend of science teachers' turnover in Gairo district for recent years.

The table 4.16 indicates the tendency science teachers' turnover in the recent years

Year	Kibedya secondary school	Shabiby secondary school	Gairo secondary school	Rubeho secondary school	Sekwao secondary school	Chakwale secondary school
2010	2	1	2	1	1	3
2011	1	_	_	1	2	1
2012	2	_	_	1	_	1
2013	2	1	3	2	_	2

Source: secondary schools visitors' book, computed by researcher July 2013

(ii) Shortage of teaching and learning materials

It was realized that, out of 62 respondents from sampled secondary schools, 9 respondents which are equal to 14.52% said that, students' poor academic performance in science subjects is contributed by lack of teaching and learning materials in public secondary schools found in Gairo district. On teaching and learning materials Kitao **(**1997) has argued that, materials influence the contents and the procedures of learning. Littlejohn and Windeatt (1989) strengthen that materials have a hidden curriculum that includes attitudes toward knowledge, attitudes toward teaching and learning, attitudes toward the role and relationship of the teacher and student, and values and attitudes related to gender, society, etc. Materials have an underlying instructional philosophy, approach, method, and content, including both linguistic and cultural information. Therefore the school which has shortage of important learning and teaching materials leads to its students to perform academically poor.

The finding revealed that public secondary schools especially community based secondary school that are found in Gairo district have high shortage of teaching and learning science materials compared with public boarding secondary schools. The findings revealed that, the students have been sharing one science book, whether

chemistry, physics, or biology book from three to six students who want to read that book; in that context the student decide to read it by exchanging one by one**.**

During the interview between the researcher and academic teachers of sampled secondary schools the academic showed the researcher the shelves of science books, and other teaching and learning materials. The researcher wondered to see small science subjects materials shelves situated in academic offices only and the researcher observed that students are not allowed to borrow science books since are few and academic teachers fear lose of such books which can be done by students. Through researcher observation, recognized that, in public secondary schools in Gairo district there is shortage of science materials such as science charts, books, journals and other related materials hence shortage of teaching and learning materials to be one of the factors contributing to students' poor academic in science subjects in Gairo district. Littlejohn and Windeatt (1989) concluded that, the school where learning and teaching material are abundant students are likely to perform well in deferent subjects. Teaching and learning materials feats to all types of learners include auditory learners, visual learners and tactile learners.

The table 4.11 shows the availability and requirements of science books in six sampled secondary schools. The table 4.11 reveals that, in ordinary public secondary schools in Gairo district there is no ratio of one science book to one student as indicated bellow.

Table 4.13 availability and requirement of science subjects in ordinary public secondary schools in Gairo District.

	Science books	Kibedya secondary school	Shabiby secondary school	Gairo secondary school	Rubeho secondary school	Sekwao secondary school	Chakwale secondary school
available	Chemistry	150	100	120	80	40	30
	Physics	150	20	70	80	25	60
	biology	12	20	40	80	15	25
total							
Requirement	Chemistry	162	470	480	400	510	370
	Physics	162	550	570	400	525	340
	biology	300	550	560	400	135	375
total							

Source: Tanzania secondary schools statistic form, computed by researcher July 2013

(iii) Poor schools' teaching and learning science subjects infrastructures

The researcher during the study observed that, out of 62 who were interviewed and collected their data through questionnaires, 7 respondents which is equal to 11.3% argued that public secondary schools in Gairo district have not school infrastructures such as science laboratories, libraries, electricity, water and other scientific infrastructures to support effective teaching and learning science subjects, therefore better students' academic performance in science subjects can happen in such situation.

During the interview between the researcher and some of the secondary school administrative larders wondered the researcher why is interviewing and disseminating the questionnaires to the respondents since through researcher observation is enough to recognize that the school' environment itself does not support to teach and learn science subjects in that schools since the schools have no laboratory, library, electricity, accommodations and other teaching and learning facilities to support teaching and

learning science subjects, thus it is right of the students to perform poor in science subjects.

The table 4.12 indicates the availability and requirements of schools' infrastructures which facilitate or hinder teaching and learning science subjects in Gairo districts.

From the table4.12 researcher observed that government through Secondary Education Development Program is investing more resources on classrooms construction rather than science laboratories, libraries, and teachers' accommodation. It is encouraged by findings that learning science subjects within poor schools infrastructures is a way of promoting inequality in Tanzania children therefore; the government should make sure every secondary school children be provided better learning environment for science subject.

Table 4.14 availability and requirement of some schools infrastructure

	laboratory	Library	Source of power	classrooms		Administrative brocks		Accommodation| houses		Source of water
				available	needs	available	needs	available	needs	
Kibedya Secondary school	_	_	_	9	_	1	_	_	10	_
Gairo	1	_	✓	18	_	1	_	5	15	_
Rubeho	_	_	_	10	_	_	1	1	9	_
Sekwao secondary school	_	_	_	12	_	1	_	1	15	_
Chakwale secondary school	_	_	_	12	_	1	_	2	10	_

Source: Tanzania secondary schools statistic form, computed by researcher July 2013

(iv) Poor teaching and learning methods

Out of 62 respondents, 5 respondents that is equal to 8.1% responded that students' poor academic performance is contributed by poor teaching and learning methods of science subjects in public secondary schools found Gairo district. The findings reveal that science teachers prefer to use non-participatory methods such as lecture method, this is due to the circumstance of shortage of science teachers, learning and teaching materials and the classes are so bigger compared the number of teachers available in public secondary schools in Gairo district.

The preferred teaching and learning methods for science subjects is participatory methods such as practical, research, discussion, project and others related to participatory methods. In participatory methods students are interacting with teacher during teaching and learning process and are involved more in the in the subjects than non-participatory methods in which the main actor is the teacher and the students are the only hearer. In the same context Asikhia (2010) sees teaching method as the strategy or plan that outlines the approach that teachers intend to take in order to achieve the desirable objectives. It involves the way teachers organize and use techniques of subject matter, teaching tools and teaching materials to meet teaching objectives. A teacher teaching methods choice may motivate or de-motivate learners in learning teacher's subject.

(v) poor motivation for science teachers

The study of Lockheed et al (1991) indicated that lack of motivation and professional commitment produce poor attendance and unprofessional attitudes towards students which in turn affect the performance of students academically. The study findings agreed the study of Lockheed at al (1991) after 8 respondents who are equally 12.9% out of 62 respondents said that lack of motivation to science teachers has contributing to students' poor academic performance in science subjects in public secondary schools in Gairo district. From the findings reveal that science teachers are paid low salary without teaching allowance and other working remunerations regarding many public secondary schools in Gairo district are situated in remote areas with poor working environment, therefore they do not invest their time, efforts and competence in teaching students science subjects as the result students' poor academic performance in science subjects

From the findings the respondents proposed some motivation mechanism which the government should provided to sciences teachers as indicated in the table. The researcher suggest that if the proposed motivation mechanisms are provided would help to arose science teachers' morale of teaching science subjects to students and retain them to their working stations without engaging in unnecessary personal activities.

Table 4.15 motivation mechanisms

Motivation Mechanisms	Frequency	percentage
Enough salary scale and other benefits	3	4.8
Modernizing teaching environments	1	1.6
Accommodation and other social service (water, electricity, transport means)	1	1.6
Total	5	8.1

Source: research findings computed by researcher July 2013

(vi) Science teachers and students' absenteeism

From the findings, out of 62 respondents, 6 respondents that are equal to 9.7% said that, absenteeism practice of science teachers and students is one of the factors contributing to students' poor academic performance in science subjects in ordinary public secondary schools. The findings reveals that, the few available science teachers in their school are practice absenteeism which hinder to science subjects topic completion on times, this is due the fact that sometimes science teachers are engaged in individual activities during school hours. From the findings the researcher observed that, the science teachers in the Gairo district are few with lorded periods of teaching science subject in every class, thus sometimes are dogging because of tiredness of the previous day.

In the side of students' absenteeism practices, the findings reveal that, the parents have negative attitudes toward education; hence the parents do not encourage their children to attend to school. During the interview between the researcher and the second masters of Shabiby and Gairo secondary schools, they showed the list of students who were absent for long time ago, and they said that those students who are absent for long time they adding the number who failed poorly in science subjects.

The researcher was failed to review attendance rejecters to prove the reality but satisfied with secondary schools administrative leaders and the findings, this was due the time limit.

(vii) Poverty of students' parents

The most economic activities of the natives in Gairo district is food crop production depending yearly rainfall which results to the natives to have low income and fail to support their children's study. Out of 62 respondents, 3 respondents that are equal to 4.8% argued that, students' poor academic performance is contributed by poverty of students' parents in which they fail to support their children in their studies. From the findings the researcher observed that, some of the initiatives taken and implemented under schools level depend on the contributions of students' parents but the findings reveal that one of the challenge facing these initiatives to be implemented in time is the low income of the students since are not contributing on time.

During the interview with the secondary schools administrative leaders they mentioned the low income of the students' parents is one of the constraint hindering the exercise of hiring part time qualified science teachers and form six leavers since the schools depends on parents' contribution to pay these hired teachers since the schools themselves can't afford to pay them, therefore, the students to miss to study effectively science subjects.

The findings reveal that, there some Non-governmental organizations which sponsor the students who their parents fail totally to pay school fees and other contributions. Some of the Non-governmental organizations which sponsor students from disadvantage families and orphans include Tanzania Campaign for AIDS, COMPASSION and Campaign for Female Education (CAMFED). Thus this sponsorship done due to poverty of the parents until to fail to pay school fees and other contribution for their school children

(viii) The role of language of instruction

Language of instruction is the media communicating between the students and teachers or the students communicating with the materials during the process of teaching and learning. Effective learning happens when the learner is able to understand the language used to present the subject to him or the learner is able to read what is in the materials

used. Out of 62 respondents, 7 respondents that are equal to 11.3% said that, the language of instruction has been contributing to students' poor academic performance in science subjects. From the findings the researcher observed that almost secondary schools sampled in Gairo district have not some initiatives or programs to improve students' ability in language of instruction that is English language since all schools are received primary school leavers who were instructed with Kiswahili. Sometimes these students their mother tongue languages are native languages, hence the schools should start with foundation courses to enhance students to be capable in language of instructions first. Although the schools can have good programs of building students capacity in language of instruction, but these secondary school also have shortage of human and non-human resources in English and become the barrier of implementing that program.

During the interview between the researcher and the academic teacher of Sekwao Secondary School, the academic teacher revealed that, they are enrolling primary school leavers with poor language background to start form one classes. She argued that, such kinds of students are not able to study science subjects hence they end in poor academic in science or other subjects whether interschool or external evaluations.

During the research researcher was lucky to meet one of the biology teacher of Kibedya secondary school marking biology terminal examinations of form three and four, the research observed how the students failed to explain biology easy questions. Therefore, through this short observation the researcher recognized that, the language of instruction is the barrier for students to learn science subjects effectively in public secondary schools in Gairo district.

(ix) Frequency changes of syllabus and examinations format for NECTA

The researcher during analysis of the findings observed that, out of 62 respondents who interviewed and provided questionnaires, 4 respondents that are equal 6.5% said that frequency change of syllabus and examination format for National Examination Council

of Tanzania has been contributing to students' academic performance in science subjects.

The experienced science teachers in teaching arena who were interviewed and provided questionnaires ascertained that, always curriculum changes do not go parallel with provision of capacity building and training on new introduced science syllabuses. In contrary, teachers continue to apply old knowledge and skills to implement the new one. Therefore, sometimes students fail because of being taught new topics which demand new knowledge, skills and learning strategies in the accustomed fashion.

All public secondary schools in Gairo district exempt Gairo secondary school were established since 2004. According to SEDP II (2010- 2015) ordinary secondary schools have been using improved syllabuses since 2005. Therefore the researchers observed that, the government might not be conducted in service training on the improved syllabuses to science teachers who were in work in that years that is why there complains from these teachers since they see there some knowledge gap in implementation of improved science syllabuses.

According to SEDP II (2010- 2015) reveals that the government has been improving certificate secondary education examination formats. There was examination formats improvisation in 2009 and the recently of 2012. The findings revealed that, the changes of examinations formats of NECTA come abruptly since students sometimes were not prepared for new formats. In the same context, during the interview between the Second Master of Gairo secondary school and the researcher, the Second Master referring to the results of Form four 2012, he blamed NECTA to change the pass grade criteria without prior information to both teachers and candidates, hence NECTA must be pointed as one of the factors contributing to students' poor academic performance in science subjects to some extent.

(x) Students' negative attitudes toward science subjects

In data collection through questionnaire the students were asked how viewed science subjects and 21.0% respondents viewed science subjects as subjects that are difficult although they were against with those 33.9% and 17.7% respondents who viewed science subjects as somehow simple and somehow difficult as shown in table 4.15.

From researcher view point observed that, students' individual differences such as cognitive ability, attitudes toward science subjects, personality, and parents' economic might lead to view science subjects differently as shown in the table 4.15.

Also during the findings analysis, out of 62 respondents who interviewed and provided questionnaires, 4 respondents that are equal 6.5% said that the students have bad notion on science subjects since they believes that science subjects are difficult subjects compared to science subjects. They argued that since the students believe that science subjects are difficult, therefore they are not interested to learn these subjects, hence lead poor performance in these subjects. From the findings, the researcher observed that, the bad notion of students towards science subjects are created by teaching and learning situation science subject such as shortage of science teachers, materials, poor science infrastructures and other teaching facilities which can't interest students to learn science subjects.

Table 4.17 students how viewed science subjects

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Simple	1	1.6	2.2	2.2
	Difficult	13	21.0	28.3	30.4
	Somehow simple	11	17.7	23.9	54.3
	Somehow difficult	21	33.9	45.7	100.0
	Total	46	92	100.0	
Missing	System	4	8		
Total		50	100.0		

Source: Research findings computed from collected data July, 2013

(xi) Lack of hostels

Unfortunately all public secondary schools in Gairo district are community based secondary schools with no students' accommodations. Students are attending the school sessions since morning to 2.00 pm then depart to home. Out of 62 respondents who interviewed and provided questionnaires, 3 respondents that are 4.8% asserted that all public secondary schools found in Gairo district being day schools is one of factors contributing to students' poor academic performance in science subjects.

The findings revealed that, the students are consuming time after school time table in engaging domestic activities instead spending extra time in studying as used boarding public secondary schools, thus students not maintain chronological science subjects concentration. Also the findings reveal that, day or community based secondary schools have providing high democracy to students since there are no laws or regulations to safeguard them to concentrate on studying when where at homes, but the students are used that democracy for spending a lot of time for engaging in unnecessary social activities and the all community life style. Therefore, if hostels are built to all public secondary schools in Gairo district the students' academic performance in science subjects will be improved since students will be a lot of time of concentration on study.

(xii) Poor appreciation and recognition from government leader

The researcher during the findings observed that, out of 62 respondents who are interviewed and provided questionnaires, 2 respondents that are equals 3.2% were said that lack of recognition and appreciation from the government for whatever work done. In the same context, they argue that, the teachers' contribution to the growth and development of the nation has not yet seen by the government at all since teachers are paid salary with no fringe benefit like other field like health and agricultural field. This has lead teachers lose of patriotism to their nation and to help the students for better performance.

For the case of science teachers the researcher observes that science teachers need a sense of appreciation and recognition for whatever job done considering they are few

with subjects lorded. This would help to raise their teaching morality for better students' academic performance in science subjects for the national prosperity.

(xiii) Poor enrollment criteria of primary school leavers

The researcher during the findings observed that, out of 62 respondents who are interviewed and provided questionnaires, 4 respondents that are equals 6.5% argued that, the high increase rate of public secondary schools has changed some the enrollment criteria in enrolling primary school leavers in which are enrolled basing the catchment areas and few students are undergo boarding schools. It almost every ward in Tanzania has community based secondary school hence the primary leavers who are enrolled to join these secondary schools are those only living in the appropriate wards. The cutting pass mark point is lowered to 101 marks for five subjects in the same sitting in Primary School Leaver Examinations.

The findings reveal that in the current years of high increase of public secondary schools have led to enroll students with poor academic background to penetrate in secondary school education. During the interview with secondary school leaders and the researcher, they said that, in the current years is not wonderful to meet with form one student, who doesn't know to read even a single Swahili sentence, hence no expectation to such student to perform well in science subjects in his or her career ordinary education.

Also argued that, the enrollment criteria have reduced competition in studying among students since they come in the same area and sometime the process has led imbalance in which some schools situated in remote areas have few students than schools situated town areas. They suggested that, in order to improve students' academic performance in science subjects and others the government should rethink to enroll few Primary school leavers who can be accommodate with few human and non-human materials available.

4.4 The present initiative used to improve students' academic performance in science subjects in Gairo district

In the table 4.16 analyses indicates the presence of some initiatives taken and implemented by the public secondary schools, the district and the government to

improve students' academic performance in science subjects in Gairo district. Out of 62 respondents, 50 respondents that are equal to 80.6% are appreciating the efforts of the schools administration, the districts and the government for taking and implementing some initiatives for improving students' academic performance in science subjects in Gairo district. The least 12 respondents that are equal to 19.4% were not aware if there some initiatives implemented to improve students' academic performance in science subjects in Gairo district.

Table 4.18 initiatives in press to improve students' academic performance in science subjects

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	50	80.6	80.6	80.6
	No	12	19.4	19.4	100.0
	Total	62	100.0	100.0	

Source: Research findings computed from collected data July, 2013

During data analysis the researcher found the following initiatives to be implemented in Gairo district to improve students' academic performance in science subjects. The findings indicated that initiatives taken and implemented is due to the facts that public secondary schools in Gairo are experienced shortage of science teachers, lack of learning and teaching materials, poor schools infrastructures and other problems which hinder effective students' academic performance in science subjects. The initiatives implemented in the Gairo district to improve students' academic performance in science subjects include the following bellow.

4.4.1 Initiative under schools level

Public secondary schools in Gairo district have been trying to improve students' academic performance in science subjects by implementing various initiatives. From the findings the researcher observed the following initiatives are in press to all public secondary schools in Gairo district.

(i) Employing form six leavers.

Before the implementation of Secondary Education Development Program which lunched since July 2004 Gairo district had one secondary school, until 2013 Gairo district have eleven communities based secondary schools. The increase of public secondary schools since 2004 to 2013 is being faced with shortage of science teachers because these schools are not receiving many science teachers from the central government which is responsible with employing and retaining science and arts teachers, therefore to contributing shortage science teachers to these schools in Gairo district. From that juncture the schools themselves resort to solve the problem of shortage of science teachers by employing form six leavers who had studied science subjects in their education career.

The findings reveal that, these employed form six leavers enable the students to learn science subjects to some extent are enable to sit different interschool and external examinations although their performance is still low. This reveals that although public secondary schools in Gairo have used this as initiative of improving students' academic performance in science subjects but the initiative has low contribution to enable the students to perform better science subjects**.** The table indicates the presence of form six leavers as used as science teachers in ordinary public secondary schools in Gairo.

(ii) Hiring part time qualified science teachers

The problem of shortage of science teachers in public secondary schools in Gairo district is high, thus the efforts of school administration has not ended with employing form six lever to overcome the problem of shortage of science teachers but also hiring part time qualified science teachers during school vacations.

This hired qualified teachers are paid through academic fund which strengthened by parents' contribution of twenty thousand shillings per year.

Although the efforts of hiring part time teachers as initiative of improving students' academic performance in science subjects, the findings reveal that students' academic performance in science subjects has not changed as the schools expected. The researcher

observe that, this initiative of hiring qualified science teachers is conducted for short time and for classes having national examinations hence viewed as the way of enabling the students to cover all science topics which had not taught during the school normal studies. Also the researcher observes that, the students are taught through theoretically to cover all science topics than practically and no time to evaluate them if have understood what have taught. In this initiative, also the students can't practice all what have taught by these hired science teachers since were taught many science topic for shortly time.

The researcher suggest that, this initiative to bring efficiency for improving students' academic performance in science subjects should be implemented to all classes than prepared classes for National examinations since due to shortage of science teachers as the findings have revealed the researched believes that there possibility of incompletion some science topics to the least classes.

(iii) Conducting tuition programs after school normal time table

Continuation of students' poor performance in science subjects in ordinary public secondary schools in Gairo district year to year has led to secondary schools administration to implement tuition programs as one of the initiatives of improving students' academic performance in science subjects.

Tuition programs are conducted after schools time table and weekends and few students with ability to pay the tuition fees are attending the evening programs. From the findings the researcher observed that some students are living far from schools to them to attend this tuition program become difficult although can have ability to pay for it.

Although the initiative is implemented to improve students' academic performance in Gairo district has contributed little on the improving students' academic performance in these subjects regarding the time conducted and students' home environments. The findings reveal that, after school hours many students are engaging more in home economic activities than concentrating on studying. This reveals that, there is different

science subjects' understanding among students within the same classes since some of have attended every day and others were not attended the sessions.

(iv) Strengthening academic fund

Public secondary schools in Gairo district with cooperation of secondary schools' boards are committed to improve students' academic performance in science and other subjects by introducing academic fund contribution. Every student is required to pay ten thousands per year. In data analysis observed that, Gairo secondary school has six hundred students and if all students paid academic contribution is expected to get six million shillings. The findings reveal that, the agreement between the schools' administration and boards is 50% of academic contribution should by science teaching and learning such as books, charts, demonstrative figures and simple laboratory equipment, 25% is for schools administrative matters and the least 25% is used for buying learning and teaching materials for arts subjects.

The researcher observes that, this academic fund is not used effectively on the intended goals since the fund has failed to fill the gap of shortage of science learning and teaching materials and not seen as initiative of improving students' academic performance in science subjects in Gairo district.

4.4.2. The present initiatives used by the government to improve students' academic performance in science subjects

The government is not behind in the improvement of students' academic of science subjects. It has been taking some initiatives to improve it although are few and other not known with the respondents. According to the findings, the common known initiatives in press implemented by the government to improve science subjects in public secondary schools including schools found in Gairo districts involve the following:

(i) Recruitment and placement of science teachers in public secondary schools

The government has been recruiting and placing science teachers' graduates from teachers colleges and universities whether private or government institutions to reduce

the shortage gap of science teachers in public secondary schools. The findings reveal that, every year the schools received one or two science teachers. During the interview between the researcher and schools administrators, the schools administrators said that, although the intention of the government is to ensure that every public secondary school should get at least one science teacher for every cycle of teachers employment however, the plan is hampered by district education officers or district human resource officers who post new science teachers more in town based secondary schools at the disadvantage of rural secondary schools.

Table 4.19 indicates the availability and requirements of science teachers in public secondary schools in Gairo district.

		Kibedya Secondary school	Shabiby Secondary school	Gairo Secondary school	Rubeho secondary school	Sekwao Secondary school	Chakwale secondary school
available	Chemistry	1	1	2	-	1	_
	Physics	-	1	2	1	-	1
	biology	1	1	1	1	-	_
total		2	3	5	2	1	1
Requirement	Chemistry	3	3	2	2	3	4
	Physics	4	3	2	2	4	2
	biology	3	3	3	2	4	4
total		10	9	7	6	11	10
Total of students		312	570	600	315	550	400

Source: *Source: Tanzania secondary schools statistic form, computed by researcher July 2013*

(ii) Increasing enrollment of form six leavers in teachers' colleges and universities

The study revealed that, the respondents recognize the effort of the government through ministry concerned with education and administration of teachers' colleges and university to increase enrollment in educational programs. According to Secondary Education Development Programme II (July 2010-June 2015) states that until 2005 Tanzania had one university training teachers (The university of Dar Es Salaam) the number increased to more than 10 public and private universities and colleges offering education courses by 2009, in the same 2010 year alone, 11,000 had been registered for education degree in both public and private university among the candidates registered were undertaking science education programs. The increase of students undertaking education has increased year to year.

Although the government has committed to improve students' academic performance in science and other subjects in public secondary schools, the numbers of teachers graduate and employed by the government are still few to solve the problem of shortage of science and arts teachers in public secondary schools. This reveals that students' academic performance can't be improved if the government could not take other faster measures of improving students' academic performance in secondary subjects.

The researcher observe that the increase of teachers graduates from colleges and universities has been benefiting more private schools who have not shortage teachers since they retain them with better salary and fringe benefits compared by the government.

(iii) Funding the public secondary schools through Secondary Education Development Program

The findings reveal that, all public secondary schools in Gairo district have been receiving capital grant from central government through district counsel. During the interview between the schools administrators and researcher, the schools administrators revealed that, the schools have been receiving capitation grants which used for buying learning and teaching materials including science subjects' materials and other capitation grants used in improving school infrastructures.

The secondary schools are directed by the government to spend 50% for buying science teaching and learning materials, 25% construction and the least 25% for administrative matters. The table indicates amount of the capitation grant received by some sampled secondary school starting 2013 to July 2013. From the findings the researcher observed that, although the government has been funding its secondary schools through capitation grants, the grant is not enough to solve all schools matters. That is the reason that many initiatives taken and implemented depends on students' parents' contributions.

Each secondary school has capitation grant bank account and approved signatories ensured by schools' boards and district accountant to ensure value for money.

4.5 Measures to be taken to improve students' academic performance in science subjects

The findings revealed that, secondary schools administration, the district leadership and the government have been showing commitments to improve students' academic performance in science subjects by implementing some initiatives. Although some initiatives have taken and implemented year to year but the status of students' academic performance in science subjects still poor.

During data analysis the researcher observed some of measures proposed by the respondents believing that if would be taken and implemented effectively the students' academic performance in science subjects would be improved in Gairo district. The table 4.10 shows the measures that should be taken to improve students' academic performance in science subjects in Gairo districts followed with detailed elaboration.

Table 4.21: measures to improve students' academic performance in science subjects

Training and retaining many science teachers	10	16
Building scientific laboratory in each school	8	12.9
Introduction multimedia methods in teaching and learning	7	11.3
Increasing teaching and learning materials	4	6.5
Intercourse training	4	6.5
Motivating teachers and students	12	19.3
Nil	6	9.7
Prioritization of science subjects than art subjects	6	9.7
Early specialization	5	8.1
Total	62	100

Source: research findings computed by the researcher July 2013

(i) Training and retaining many science teachers

The findings revealed that in Gairo district there is the shortage of science teachers in public secondary schools and be one of the factors contributing students' poor academic performance in science subjects. Out of 62 respondents who are interviewed and provided questionnaires, 10 respondents that are equal to 16 % suggested that, the government should train and retain many science teachers.

The government should find strategies which encourage form six and others to undertake teaching training in science education and retain them in working stations. The findings suggest that in order to encourage many young people to study science subjects in different level of education government should remove fees, students should be given high priority in education field, high salary and fringe benefits when where in

teaching field. Through these motivation mechanisms the government must get many science teachers and retain them at working stations.

(ii) Building scientific laboratory in each school

Science subjects are practical subjects in the process of teaching and learning. From the findings the researcher observed that it Gairo secondary school only out of six public secondary schools sampled in Gairo district has scientific laboratory. The findings revealed that, numbers of students in Gairo district learn science subjects theoretically than practically because of the absence of scientific laboratories in their public secondary schools. Out of 62 respondents interviewed and provide questionnaires, 14 respondents that are equally to 22.5% suggested that, building scientific laboratories in each public secondary school would encourage practical learning to students. The presence of laboratory in each school would be one of the motivation mechanisms to science teachers and students in the process of teaching and learning.

(iv) All secondary schools should be boarding schools

The environment of Gairo district is not supportive all secondary schools to be day or community based secondary schools due to the facts that the villages which composed each ward are more scattered , thus many students are walking long distance to school. The students spend four hours per day going and returning home during school days. Long distance from their home to school lead the students not to concentrate more on studies since were tired with long walking. In the same context social learning theorists believe that children are learning by interacting with the community which sounding them but sometimes this community can have negative impacts to children's performance in any activities within the society. In the case of Gairo districts the finding revealed that, some of the community members have negative attitudes toward education that is why are not encouraging their children to concentrate in study but forcing them to engage in family economic activities.

Out of 62 respondents, 5 respondents that are equal to 8.1% suggested that, all public community based secondary schools in Gairo district should be boarding schools in

order to provide students enough time for studying. This would reduce from various homes social influences that absolute have negative impacts to their study. The findings revealed that, the students are spending a lot of time for doing home economic activities for increase the family income or for the purpose of finding school fees instead of spending time for studying or engaging school activities. Therefore boarding schools program if implemented in Gairo district would improve students' academic performance in science subjects.

(v) Introduction of Multimedia technology approach

With the development of computer technology, multimedia methods are been increasingly used in teaching practice. Multimedia methods reinforce the students to retain what they see and hear, as the use of multimedia technology gives students more information than just writing on the blackboard, and increase the chance of active learning. Although multimedia methods are very expensive and require electricity service at schools but in the shortage of science teachers and teaching and learning materials are very usefully in improving students' academic performance in science subjects since the students can learn and get materials without depending on few science teachers present. Out of 62 respondents, 7 respondents whom are equal to 11.13% suggested that, the introduction of multimedia technology in teaching and learning would simplify the process of teaching and learning science subjects and encouraging students to be interested with science and technology still young.

Although the measure has suggested by the respondents, the researcher observes that, secondary schools' environment in Gairo is not supportive to be used since these secondary schools are characterized with the absence of electricity and computerized infrastructures. In order to be used the secondary school administrative, the community and the government should sit together to see how can be implemented.

(iii) Increasing teaching and learning materials

The findings have revealed that, students' poor academic performance in science subjects in Gairo has been contributed by shortage of science teaching and learning materials. Teaching and learning is facilitated with the availability of the materials in the schools concerned. Therefore out of 62 respondents, 4 respondents that are equal to 6.5% suggested that, the government should provide enough science materials to public secondary schools. The availability enough science material in the schools would reduce students' dependence to their science teachers since the students may study what have been directed alone.

In the same context the researcher suggests that, the government should have short plan and special science materials budget since the absence of these materials in public secondary schools in Gairo district is high and have been hindering effective teaching and learning for better students' academic performance in science subjects.

(iv) Motivating teachers and students

From the findings, the researcher observed one of factors contributing to students' poor academic performance is the lack of motivation for teachers and students. Out of 62 respondents, 12 respondents that are equal to 19.3% suggested that the government should motivate science teachers by providing them better salary, fringe benefits and improving teaching environment. For the case of Gairo district motivation mechanisms are needed to attract science teachers to be employed in the district since the district' environment does not attract science and other teacher to work in the districts. The district's environment characterized with mountainous, plains, high slops, and poor communication, thus the implementation of motivation mechanisms such as provision of difficult environment allowance and transport means would attract many science teachers to be employed in Gairo with regarding hardship of the environment.

For the side of the students they suggest that, the students should be motivated through supplied enough science materials and sufficient facilitating situation trough

competition, science clubs, and other situations where awards and prizes are be provided for the achievers. Motivation should be considered by the government in any educational policy, program and strategy as catalyst to improve students' academic performance in science subjects.

(v) Early specialization

From the findings the researcher observed that, the respondents appreciated that, the secondary school curriculum is overloaded in which all most the number of subjects required to studied by the students are nine subjects from form one to four, instead the students are specialized in science and art subjects when are form three. Out of 62 of respondents, 5 respondents that are equal to 8.1% suggested that, the students who interested with science subjects should specialize in science subjects early as when enrolled in form one. This would enable the students to study science subjects in deep for future effective performance in their academic career. From researcher's view point see that there is no importance of studying nine subjects while the students is needed to pass three science subjects for form six career. Therefore early specialization in science subjects would improve students' academic performance in science subjects in public secondary schools.

(vi) Intercourse training

Out of 62 of respondents, 4 respondents that are 6.5% said always science teachers need to update their knowledge and skills of teaching science subjects since every time there some changes of science subjects syllabus done by the government. Also as the time goes new concepts of science are rise despite the facts that this millennium is controlled by high growth and development of science and technology, thus intercourse training is required in the process of teaching science subjects. The findings revealed that, some of the science teachers have five years without undergoing intercourse training as updating their science knowledge, skills and getting new strategies of teaching science subjects.

From the researcher point of view, intercourse training for science teachers can be one of the strategy of motivating science teachers since would enable them to change ideas themselves of teaching science subject and when come back to their working stations

have new ideas and challenges of teaching science subjects. Therefore, this would enable to improve students' academic performance in science subjects.

(vii) Prioritization of science subjects than art subjects

The respondents appreciating with the fact that science subjects in every level of education are the source of the growth of science and technology wherever in the world. Out of 62 respondents, 6 respondents that are 9.7% suggested that, there should be educational policy that prioritize science and technology first in every level of education as the government in the recent year come with "Kilimo Kwanza" in order to make agricultural sector to be the axis of all sectors in Tanzania. Thus, science subjects in every level of education should be pronounced as science subjects first and given high priority in every education policy, strategies and programmes planned.

CHAMPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The general objective of the study was to assess the students' current status academic performance in science subjects in press to the initiatives implemented to improve students' academic performance of science subjects. The previous chapter is concentrated on analyzing and discussing the findings on the students' current status performance in science subject, the factors contributing to students' academic performance, the initiatives implemented to improve students' academic in science subjects and examining and suggesting some measures to be taken to improve students' academic performance in science subject in secondary schools, a case of study Gairo district. This chapter seeks to summarize the study, draw final conclusion and make concrete recommendations on the best practices on improving students' academic performance in science subjects.

5.2 Summary of the Findings

This part the researcher intended to discuss the objectives of the research and their findings as follows;

The first objective was to examine the students' current status performance in science subjects**.** Under this the findings reveal that, the students' current status performance in science subject in public secondary schools, a case of study Gairo district is poor. Out of 62 respondents, 47 respondents that are equal to 75.8% responded that, the students' current performance in science subjects is poor since they argued that always few students are scored C and D credit and the least scored F credit during form four national examinations and interschool examinations. From the researcher document reviews revealed that in the current years the students' academic performance is highly poor.

The second objective was to assess the current factors contributing to students' poor academic Performance in science subjects.

The findings revealed that, the current factors contributing to students' poor academic performance in public secondary schools, a case of Gairo are shortage of science teachers, poor school infrastructures, lack of science teaching and learning materials, poor teaching and learning methods, lack of motivation to science teachers, students' parents poverty, language of instruction, the frequency changes of science subjects syllabus and examinations format for National Examination Council of Tanzania. The findings proceeding analyzing the current factors contributing to students' poor academic performance in public secondary schools, a case of Gairo district including science teachers turnover, bad notion of students toward science subjects, the schools system and lack of appreciation and recognition of science teachers from government.

The third objective of the study was to examine initiative in press to improve students' academic performance in science subjects. The study found some initiatives implemented by the schools including employing form six leavers, hiring part time qualified science teachers, conducting tuition programs after school normal time table, and strengthening academic fund. These initiatives are implemented by the schools with the aim improving students' academic performance in science subjects to their level best.

The government is not aside to the ensue of improving students' academic performance in science subjects in its secondary schools found in Gairo district and countrywide since has been implementing initiatives such as recruitment and placement science teachers in public secondary schools, increasing enrollment of form six leavers in teachers' colleges and universities and funding the public secondary schools through Secondary Education Development Program goals.

The fourth objective of the study was examine and suggest some measure to be taken to improve students' academic performance in science subjects. From the findings the respondents proposed that, there is a need to take some measures of improving students' academic performance in science subjects in public secondary schools considering the situation is persisting year to year.

The measures that suggested by respondents can be seen as descriptions of present and future actions which can be taken educational policies planners, stakeholder, educational donors and the government towards students' academic performance changes.

The respondents through the findings suggest some of the measures to be taken such as Training and retaining many science teachers, building scientific laboratory in each school, the government should stop to building many public secondary schools, all secondary schools should be boarding schools, introduction multimedia methods in teaching and learning, increasing teaching and learning materials, intercourse training, Motivating teachers and students, prioritization of science subjects than art subjects, employing laboratory and librarian technicians, early specialization. The respondents and the researcher believe that, all these measures if taken and implemented, students' academic performance in science subjects in public secondary schools would be improved and developing science and technology in Tanzania.

5.3 Conclusion

The growth and development of science and technology is passing every level of education such as secondary school level. Thus, the persistence of students' poor academic performance in science subjects in secondary schools in Tanzania needs some efforts of researchers to be involved in analyzing some factors contributing to the situation since the situation may hinder the growth and development of science and technology in our country.

During data analysis the researcher's findings revealed that, students' current status academic performance in science subjects in public secondary schools, a case of Gairo district is highly poor since the number of students performed science subjects is all most few contrary to the number of performed poor.

The findings reveal that there are some initiatives implemented to improve students' academic performance in science subjects but it are faced by some challenges such as lack of fund to facilitated them**.**

From the findings the researcher observed that the state of students' poor academic performance in science subjects is widening year to year. From the findings the researcher observed the situation of students' poor academic performance is widening as the government increase the accessibility of secondary school service to the citizens. From the findings the respondents said that the increase of secondary schools in the recent years is one of the factors contributing to students' poor academic performance in science subjects sine the government has failed to fund them and the increase has allowed even students' with poor academic performance in primary schools level to be enrolled in secondary school education who can't perform better in science subjects when they were in secondary school level.

From this study, the researcher observed that the trend of students' poor academic performance in public secondary school, a case of study Gairo district, there some factors contributing to such situation. The findings revealed that, some of the factors contributing to students' poor academic performance in science subjects, a case of Gairo district include the shortage of science teachers, lack of teaching and learning materials, and poor teaching and learning methods. Also the findings revealed that, another factors contributing to students' academic performance in science subjects in secondary schools, a case of Gairo district include science teachers turnover due to the facts that Gairo district' geographical location is mountainous, and cool air condition which can't attract some teachers including science teachers.

The study continue to analyze the data and found that when talking the factors contributing to students' poor academic performance in science subject, a case of Gairo district also include bad notion of students toward science subjects, the system of the schools that all schools in Gairo district is day or community Secondary schools, poor school infrastructures, lack of motivation to science teachers, the role of language of instruction, the students' parents poverty, frequency changes of science subjects' syllabus and examination formats for National Education Council of Tanzania and lack of science teachers' appreciation from government.

Also the study observed that, there is a need to suggest measures to be taken by government cooperating with education stakeholders and educational donors to improve students' academic performance in science subject in public secondary schools as the findings have revealed the current status of students' academic performance in science subjects is poor.

5.4 Recommendations

The study provides the recommendations which the government should do in order to improve students' academic performance in science subjects in public secondary schools. These recommendations if clearly are worked upon; the researcher expected that students' poor academic performance in public secondary schools would be reducing if not perished forever.

First of all, in order to improve students' academic performance in science subjects in public secondary schools the government should stop with policy of building more public secondary schools everywhere in Tanzania in which the researcher see the increase of public of secondary schools in Tanzania has correlation with students' poor academic performance in all subjects especially science subjects since the government has failed to fund all newly constructed and old public secondary schools. sometimes high increase of public secondary schools has allowed even slow learners children join secondary schools education, hence contributing to the rate of students' poor academic performance in science subject to be high.

Also the researcher observed that, the high increase of public secondary schools in Gairo district as well as in Tanzania in general has increased the problem of shortage of science teachers, shortage of teaching and learning materials and important infrastructure such laboratories, teachers and learners' accommodation, and social facilities such electricity, and water distribution to all public secondary schools, hence contributing to students' poor academic performance in science subjects. Therefore the government should first to focus on modernizing the available public secondary schools before proceeding with the policy of construction of mushrooming public secondary

schools countrywide with the aim of improving students' academic performance and teachers' life.

Secondly motivation to all science teachers, students, and the candidates who wish to join science teaching field should be given highly motivation regarding science subjects is the source of growth and development of science and technological knowledge and skills for the development of the nation. Historically developed countries such as British, China, Germany, United State of America, Japan to mention a few were developed economical and socially when made science and technology as main strategy of production, hence there were invested more it and motivated all who were engaged in science and technology growth and development. It necessary to government to find some means of motivating those engaged in science and technological education, this well help to get interested persons to teach and study science subjects in deferent level of education. In the same thinking the research suggests that, science and technology education should be the tie, song and one of the national symbols representing Tanzanian humanity. Therefore through motivation, appreciation and recognition of science and technology genres students' academic performance in science subjects should be improved.

Moreover, the researcher suggests that, the government should redefine the goals and objective of secondary school education in Tanzania since would help the improvement of students' academic performance in science subjects. The present science secondary education is not preparing the students to have science and technological knowledge and skills for being self- reliance after school completion but aim to prepare the students to join high level since all students are not join high education as the aim of the government.

What needed is to prepare science secondary school students to acquire science and technological knowledge and skill which enable themselves to be employed, hence this would interest many students to study science subjects with efforts since they know that have something to value when they return in normal life after school completion.

The citizen should be educated on the importance of science and technology. The students enrolled in secondary schools come from the community that a lot of members do not know the importance science and technological education and their children sometimes have not heard the importance of science and technology from their parents even their tertiary teachers. Therefore in the process of improving students' academic performance in science subjects in every level of education the society should be educated on the importance of science and technology for the growth and development of the nation in every sectors and the community in all.

Therefore, all will be possible if the government will have short, medium and long plans in ensuring science and technology is grown and developed within the society. The government should have vision and mission of becoming the centre of science and technology in African as was the centre of nationalism.

5.5 Future Research

To conclude this study on Assessment of the Current Status of Students' Academic Performance in Science Subjects in Relation to the Initiatives implemented in secondary schools in Tanzania, A case of Gairo district, Morogoro, it is good to say that this research will give room to future researchers who will wish to find the effects of students' poor academic performance in science subjects in Tanzania. This study will act as the base for the study to be conducted since the real picture to the existing problem has shown.

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APPENDICES

APPENDIX I

Interview Guide for Secondary School Administrators

Dear school administrators

My name is Samwel M.A. Masatu, a student at Mzumbe University (MU). I am conducting a study on the factors contributing on students' poor academic performance in science subjects in secondary schools in Tanzania, a case study of Gairo District.

This research is purely for academic purposes. It is a partial of fulfillment of the requirement of Master's degree in Science Human Resource Management (MSC-HRM). Therefore, your information would remain confidential and your name is not asked anywhere in this interview guide.

The success of the research depends on heavily your willingness to cooperate by providing correct and objective answers.

I look forward to receive your cooperation,

1. Sex: 1 Male 2. Female [ ]

2. Marital status: 1. Married 2. Single [ ]

3. Age: 1. 20- 30 years

2. 30- 40 years [ ]

3. 40- 50 years

4. 50- 60 years

4. Level of education: 1. Diploma. 2. Degree 3. Masters 4 PHD [ ]

5. What is the current status of students' performance in science subjects at your school?

……

6. Are their current factors contributing to such performance mentioned above in science subjects?

……

7. If yes, what are the current factors contributing to such performance in science subjects in your school?

……

8. Does increase of public secondary schools one of the contributing to performance that you said in (Qn7) in science subjects in Gairo district?

……

9. Are there any defined measures in place to improve students' performance in science subjects at your school and national level?

…….

10. What measure should be taken to improve students' academic performance in science subject?

……

11. What is your suggestion students' academic performance in science subjects?

……

Thank you for your kind consideration and much favor on this interview

APPENDIX II:

QUESTIONER FOR SCIENCE TEACHERS

Dear science teachers.

My name is Samwel M.A. Masatu, a student at Mzumbe University (MU). I am conducting a study on Assessment of the current status of students' academic performance in science subjects in relation to the initiatives implemented in secondary schools in Tanzania, a case of Gairo district, Morogoro. This research is purely for academic purposes. It is a partial of fulfillment of the requirement of Master's degree in Science Human Resource Management (MSC-HRM). Therefore, your information would remain confidential and your name is not asked anywhere in the questionnaire.

The success of the research depends on heavily your willingness to cooperate by providing correct and objective answers.

I look forward to receive your cooperation,

Thank you.

Note: choose the number to fill in the box and give explanation in the spaces provided.

1. Sex: 1. Male 2. Female [ ]

2. Marital status: 1. Married 2. Single [ ]

3. Age: 1. 20- 30 years

   2. 30- 40 years [ ]

   3. 40- 50 years

   4. 50- 60 years

4. Level of education: 1. Diploma. 2. Degree 3. Masters 4 PHD [ ]

5. Your teaching subjects……

6. How long have you been teaching science subjects?

…….....

7. What is the current status of students' performance in science subjects at your school?

1. Good 2. Poor 3. Average [ ]

Explain your answers

……

8. Are their current factors contributing to such performance chosen above in science subjects?

1. Yes 2. Not [ ]

9. If yes, what are the current factors contributing to such performance in science subjects?

……

10. Does the increase of public secondary schools contributing to performance chosen (7) in science subjects in Gairo district?

1. Yes 2. Not [ ]

11. If yes, how has it contributing to the current status of students' academic performance in science subjects?

……

11. Are there any defined initiatives implemented by your school and the government to improve students' performance in science subjects at your school and national level?

1. Yes 2. Not [ ]

12. If yes, what are the defined initiatives implemented by your school and government to improve students' academic performance in science subjects?

a) School

……

b) Government

……

13. What kind of measures should be taken by the nation to improve students' academic performance in science subjects?

……

14. What is your suggestion on the current status of students' performance in science subjects in public secondary schools?

……

Thank you for your kind consideration and much favor on this questionnaire.

By Samwel M.A Masatu (MSc. HRM - Mzumbe University)

APPENDIX III:

QUESTIONNAIRE FOR STUDENTS

Introduction

Dear students,

My name is Samwel M.A. Masatu, a student at Mzumbe University (MU). I am conducting a study on Assessment of the current status of students' academic performance in science subjects in relation to the initiatives implemented in secondary schools in Tanzania, a case of Gairo district, Morogoro. This research is purely for academic purposes. It is a partial of fulfillment of the requirement of Master's degree in Science Human Resource Management (MSC-HRM). Therefore, your information would remain confidential and your name is not asked anywhere in the questionnaire.

The success of the research depends on heavily your willingness to cooperate by providing correct and objective answers.

I look forward to receive your cooperation.

Thank you.

1. Sex: 1. Male 2. Female [ ]

2. Form: 1. Form one 2. Form 3. Three 4. Form four [ ]

3. School's system: 1. Day/community school 2. Boarding school [ ]

4. What you see science subjects?

1. Simple 2. Difficult [ ]

3 Somehow simple 4. Somehow difficult

6. What is your current performance in science subjects in this secondary school?

1. Good 2. Poor 3. Average [ ]

Explain your answer

……

7. do you think that there some factors contributing such performance chosen in question number six (6) above?

1. Yes 2. Not [ ]

8. If yes, what are the current factors contributing such performance that you have chosen in number six (6) above?

……

9. Does the increase of public secondary schools contributing to performance chosen (7) in science subjects in Gairo district?

1. Yes 2. Not [ ]

10. If yes, how has it contributing to the current status of students' academic performance in science subjects? 1. Yes 2. Not [ ]

……

11. Are there any defined initiatives implemented by your school and the government to improve students' performance in science subjects at your school and national level?

1. Yes 2. Not [ ]

12. If yes, what are the defined initiatives implemented by your school and government to improve students' academic performance in science subjects?

a) School

……

b) Government

……

13. What kind of measures should be taken by the nation to improve students' academic performance in science subjects?

……

14. What is your suggestion on the students' academic performance in science subjects?

……

Thank you for your kind consideration and much favor on this questionnaire.

By Samwel M.A Masatu