**EFFECT OF TEACHING METHODS ON STUDENTS’ PERFORMANCE IN TANZANIAN EDUCATION INSTITUTIONS: A CASE OF PUBLIC SECONDARY SCHOOLS IN NYAMAGANA DISTRICT - MWANZA**

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF HUMAN RESOURCE MANAGEMENT OF THE OPEN UNIVERSITY OF TANZANIA**

**2014**

# CERTIFICATION

The undersigned certifies that, he has read and hereby recommends for acceptance by the Open University of Tanzania a dissertation titled: ***“Effect of Teaching Methods on Students’ Performance in Tanzanian Education Institutions: A Case of Public Secondary Schools in Nyamagana District - Mwanza”*** in partial fulfillment of the requirements for the Degree of Master of Human Resource Management of the Open University of Tanzania.

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………………………….………………

Date

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# DECLARATION

**I, Mwanahamisi R. Kitti**, do hereby 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 a similar or any other degree award.

……………………………..……

Signature

…………….……………………

Date

# DEDICATION

I would like to dedicate this work to my beloved husband Juma O. Mangu and my beloved children Baraka, Hamza, Hajira and Fatumasheymaa for their care, support and love.

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# ABSTRACT

The main concern in education sector is how teaching methods affect students’ performance. This study examined teaching methods on performance of students in public secondary schools (A-level) in Tanzania where Nyamagana District in Mwanza was used as a case of study. The study was guided by three specific objectives: To identifying teaching methods used in instruction of science subjects in public secondary school, to assess students’ perception of the appropriateness of teaching methods used in teaching in public secondary school and to determine the level of relationship between teaching methods and students’ performance in public secondary schools in Nyamagana District, Mwanza. The study applied descriptive research designed that incorporated qualitative and quantitative approach. The sample of teachers 78, students 129 and inspectors 9 was surveyed using in-depth interview and questionnaire. Qualitative data was analyzed descriptively using SPSS while thematic analysis was used to analyzed qualitative data. The study findings revealed that most effective teaching methods were demonstration followed by question and answers and then brainstorming, teachers should know the value and impact of different teaching methods and regular training/workshop should be conducted on teaching methods. The study recommended that traditional methods like lecture should not be used. The study also suggested other areas for further research as the same study should be carried in other district before generalization is done and similar research also should be conducted in private schools to know the teaching conditions.

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# LIST OF ABBRIVIATIONS AND ACRONYMS

A-level Advanced Level

BRN Big Results Now

CBG Chemistry, Biology and Geography

CBN Chemistry, Biology and Nutrition

EGM Economic, Geography and Mathematics

MIE Malawi Institute of Education

O-level Ordinary level

PCB Physics, Chemistry and Biology

PCM Physics, Chemistry and Mathematics

SPSS Statistical Package for Social Sciences

TIE Tanzania Institute of Education

URT United Republic of Tanzania

# CHAPTER ONE

# 1.0 INTRODUCTION

# 1.1 Introduction

This chapter presents the background of the study, statement of the problem, objectives of the study, significance of the study, scope and limitations of the study. It also gives the conceptual framework and definition of key terms.

# 1.2 Background of the Study

Teaching methods are used to impart knowledge to students they are the means by which the teacher attempts to impart the desired learning or experience (Ndirangu, 2007). The choice of a particular method of teaching by the teacher determined by number of factors which includes the content to be taught, the objectives which the teacher plans to achieve availability of teaching and learning resources and the ability and willingness of the teacher to improvise if convectional teaching aids are not available, evaluation and follow-up activities and Individual learner differences (Ndirangu, 2007).

The methods used in teaching vary from one country to another, depending on the information or skills that is being taught and also be influenced by the aptitude and enthusiasm of the student. Various studies had been conducted concerning teaching methods, for example Asikhia (2010), found that, qualification of teachers and students’ environment factors do not influence students poor performance but teachers’ methods of teaching influence poor academic performance. Furthermore, the methods of teaching are dictated by the medium of instruction for example, where English is used, the method of instruction has to be more interactive than passive (Pillar and Skilling, 2005). It also argued that classroom teachers urgently need to know more about effective strategies for teaching English learners (Thompson, 2004). The commonly used teaching methods especially in developing countries are teacher centered (Guloba, Wokodola, and Bategeka, 2010), which are viewed to be somewhat ineffective in the impartation of knowledge.

These methods are no longer used in other counties. Problem-life learning as a teaching method is becoming increasing popular in education institutions as a tool to address the inadequacies of tradition teaching methods since its approaches do not encourage student to participate in the learning process (Teo and Wong, 2000). However, more recently there is an argument in education industry to adopt a learner- centered paradigm shift (Ndirangu, 2007), while other schools of thought are advocating participatory methods of teaching (Sajjad, 2011).

Despite these arrays of teaching methods being advocated in literature there is no one universally accepted method. The question still remains is which of these teaching methods contribute to failure or success of students’ performance especially in developing countries like Tanzania where the causes of poor performance in secondary schools is not well understood.

# 1.3 Statement of the Research Problem

Students’ performance in Tanzanian secondary schools has been poor, and one of the reason cited is the type of methods of learning-teaching used. Education in Tanzania especially in community (ward) secondary schools, the majorities of students have failed or have not shown good performance in the examination results in summative evaluation (Laddunuri 2012). Marikinyo (2003), believes that the falling level of academic performance is attributed to teachers non-use of verbal reinforcement strategy. Several studies have been conducted about teaching methods in secondary schools in many parts of the world on students’ performance, for example in USA (Haas 2002), Pakistan (Sajjad 2011), Nigeria (Barneka 2012), (Asikhia 2010), Uganda (Guloba, Wokadala and Bategeka, 2010) and Kenya (Njoroge et al., 2014). These studies indicated that the type of teaching methods used by teachers have an impact on students’ performance.

Most of the studies conducted in Tanzania concentrated on factors affecting students performance and policy making rather than how teaching methods influence the Students’ performance example (Laddunuri 2012), (Kkairuki, 2009) and (Kat ram, 2007). Another study by Mruma (2013) examined motivation of teachers in Secondary Schools. None of these studies have specifically examined the effect of teaching methods on student performance. This study bridges the gap and it examined effects of teaching methods on students’ performance in Tanzanian education institutions in public secondary schools in Nyamagana district –Mwanza, Tanzania.

# 1.4 Objectives of the Study

# 1.4.1 General Objective

The general objective of the study is to examine the effect of teaching methods on student performance in Tanzanian education in public secondary school in Nyamagana District-Mwanza, Tanzania.

# 1.4.2 Specific Objectives

The specific objectives guided this study were as follows;

1. To identify teaching methods used in instruction of science subjects in public
2. Secondary schools in Nyamagana District- Mwanza.
3. To assess students’ perception of the appropriateness of teaching methods used in teaching in public secondary schools in Nyamagana –District, Mwanza.
4. To determine the extent to which teaching methods impact on students’ performance in public secondary schools in Nyamagana District, Mwanza.

# 1.4.3 Research Questions

The study answered the following questions

1. What are teaching methods used in science subjects in public secondary school?
2. What are students’ perceptions on the appropriateness of teaching methods use to teach Science subject in public secondary school in Nyamagana district?
3. To what extent teaching methods impact on students’ performance in public secondary schools in Nyamagana district?

# 1.5 Significance of the Study

The study is worth of academic research on the following grounds:

First, the study was expected to reveal the impact of teaching methods on students’ performance in secondary schools and contributes to the body of knowledge. Second, the study expected to provide a foundation for future researchers on literature for the topic of effects of teaching methods on student performance in science subject in secondary schools. Third, the study findings expected to beneficial to policy makers especially the Ministry of education and vocational training to put forward policies that would greatly encourage fair distribution of resources in public institutions if better results are to be obtained. Fourth, the findings also expected to benefit teachers of Secondary Schools in Nyamagana district since it gave the ideas of most suitable teaching methods for use in science subjects. Finally, the findings of this research expected to add the body of knowledge on teaching methods and also basis for future research.

# 1.6 Scope and Delimitations

The study was focused on teaching methods used and their effect on students’ performance in public secondary schools in Nyamagana district. The targeted population was students taking science subjects for at least one year. Two other categories are science teachers and school inspectors. Since teaching methods are so many in numbers the study was only concentrated on 7 of them which are citation, brainstorming, discussion, demonstration, lecture, presentation and seminar.

# 1.7 Definitions of Key Terms

Teaching methods is defined as a way of carrying actual teaching in the classroom (Ndirangu 2007). Teaching method refers to the variety of ways in which a learning task is managed to facilitate the learning process (Kimweri 2004). Participatory methods are methods which enable learners to be active involve in the learning process either as individual or group (Musuko 2010). Teacher –centered method of teaching is the process of communication where very little or no room for active participation of learners (Kimweri 2004). Performance is the degree to which individuals achieve job or organization’s goals with effectiveness and efficiency. (Utuoh, and Mowo, 2000).

# CHAPTER TWO

# 2.0 LITERATURE REVIEW

# 2.1 Introduction

This party presents literature review which is divided into two parts namely theoretical and empirical literature**.**

# 2.2 Teaching Methods

# 2.2.1 Definition of Teaching Method

Teaching methods has been defined as in different ways depending on the philosophical situation taken by the researcher as discussed hereunder, Kimweri (2004) teaching method refers to variety ways in which a learning task is managed to facilitate the learning process. This means the way of organizing the participants and the type of methods to be used will be determined by different factors i.e. number of students, age and the topic to be taught.

The study taking the definition which is teaching methods is the means or strategies employed by the teachers in attempt to impart knowledge to the learners (Asikhia 2010). It also defined as the strategy or plan that that outline the approach that teachers intend to take in order to achieve the desirable objectives (Osokoye, 1996) in ibid this involves the way teachers organize and use technique of subject matter, teaching tools and teaching material to meet teaching objectives.

# 2.3 Different Teaching Methods

There are two categories of teaching method namely, teacher-centered method and learner-centered methods of teaching (MIE 2004) Learner-centered instruction refers to the students’ construct their own understanding of content, develop a personal feeling that the knowledge is their own (Jacobson and Kauchak, 2009). Therefore student centeredness implies the heavy emphasis on enquiry and problem-based learning involves on making student as the centre point of learning and group work. Each of this method is discussed in detail below:

# 2.3.1 Learner (Student) Centered

**(i) Question and answers (citation) method**

Question and answers defined as a method both for teaching and oral testing based on the use of questions to be answered by the pupil (Mtunda and Safuli, 1997) in (MIE, 2004) Questioning techniques is one of the basic and successful ways of stimulating students thinking and learning (Ndirangu, 2007) it is applicable to all teaching approaches and methods.

**(ii)**  **Discussion method**

Discussion method is an important component for any teaching or learning situation which allows students to share their ideas (Ndirangu, 2007). It can be used at the beginning of a topic to ascertain students’ pre conceived notion of the subject matter or toward the end of a sub topic by presenting student with a new situation and asking them to explain it in terms of what they have just learned. Discussion group method entails a teaching and learning strategy through sharing and exchange of ideas, experience and opinion takes place, accompanied by active learning with all member of the group participating in it (Kimweri, 2004). Strengths of discussion method are; increases the depth of understanding and grasp of the subject matter, enhances motivation and generates greater involvement of the learners, promotes leadership role skills, develops skills of organizing and presenting ideas to others in a logical form and develops a spirit of cooperation among learners. In spite of the strengths there is also limitations of discussion method which includes time consuming, can be used effectively with a limited number of learners, if not well handled some extrovert learners may dominate the discussion.

**(iii)** **Brainstorming**

Brainstorming is a teaching techniques in which every pupil’s response that applies to a given topic is acceptable (MIE, 2004). The strengths of brain storming are ; promotes exploration, analysis and problem solving skills, develop the sense of cooperation and group cohesiveness in problem solving, encourages the generation of creative ideas, promotes the generation of initiatives in searching solutions to problems. The limitations of brainstorming are; it is time consuming if not planned, more useful to a limited number of learners and need through preparation.

**(iv) Demonstration method**

Demonstration is a practical display or exhibition of a process and services to show or point out clearly the fundamental principles or actions involved (Kimweri, 2004). Teaching by demonstration is a useful tool available to teacher and plays an important part in the teaching of skills; however for a demonstration to be effective it should immediately be followed with a practical session in order to reinforce procedures (Kimweri, 2004). The strengths of demonstration include learners get the actual experience of what they are learning and interesting to learners and thus promote their attention and retention. The limitations of the demonstration method are; time consuming and expensive, needs through preparation in practice and rehearse before the session, enough teaching and materials are required to successfully conduct a demonstration, it is more appealing when used with a group that has a limited number of learners. Other methods of teaching are role play method, case study, buzz group, and field trips.

# 2.3.2 Teacher-Centered

Teacher - centered methods of teaching are the one - way communication where by the teacher delivers the material orally while the learner listens or takes down notes (Kimweri, 2004). The method is autocratic in form and allows very little or no room for active participation of the learners and thus providing little feedback to the teacher as to how effective the presentation has been.

**(i) Lecture method**

Lecture is one way communication where teacher talks to students in an autocratic way and in its pure form, the student have no opportunity to ask questions or offer comments during the lesson (MIE, 2004). The strengths of a lecture method are, it is useful when introducing new subject matter or presenting over view summaries to student, , it can be used for teaching group of any size and the teacher to cover a lot of content in short space of time. Despite of strengths of lecture method it has limitations, it does not take into account the individual needs, feeling or interest of students, no feedback from students is required third, if not properly planned can led to boredom, it is difficult to assess whether or not learning through lecture is poor and to what extent, the quality of learning through lecture is poor and not permanent finally, the teacher spend a lot of time preparing detailed notes which are rarely learned by the student.

**(ii)** **Presentation method**

Presentation method of teaching involves motivation listeners to accept a new idea, alter an existing opinion or act on a given premises (Hamm, 2008). The strengths of the method includes mastery of the topic by the students, increases confidence among students, is good way to learn for only one student who is presenting, student search a lot of books to collect material and teacher or supervisor is very important.

**(iii) Seminar method**

Seminar method is structured group discussion that may follow after a formal lecture or some sort of experience (Kimweri, 2004). The strengths of the seminar method are to stimulate and test learners’ ability of comprehension and evaluation promotes learners’ ability of understanding and questioning, develops learner’s sense of self - reliance cooperation and responsibility and ability in report writing and presentation to fellow learners for exchange of view and decision making. The limitations of seminar method are need enough time preparation for the leaner or presenter to plan, write, consult the teacher produce and present material, some learners especially who are shy and reserved may not be able to participate effectively during discussion time and some learners, particularly the vocal ones might dominate the discussion.

The teaching methods discussed above are used in teaching and learning, none of these methods is the best one for all situations for teaching to be more effectively, the combination of these methods should be employed since education has many different types of approach and context Ji-Ping and Collis (1995) in (Faraday, Overton and Cooper, 2011).

# 2.4 Factors that Influence the Choice of Teaching Method

The choice of methods of teaching depends on different factors for example knowledge of the teacher and flexibility. MIE (2004) in order to make an informed choice of teaching method(s) in the teaching and learning process the teacher must know; the teaching methods available, the strengths and weakness of each method, the purpose of each can save and how each method can be used in practice. Other considerations during choosing a method of teaching are number of students to be taught, age, time and prior knowledge of the learner.

# 2.5 Medium of Instruction

There are several media of instruction at schools English has been used as the medium of instruction in many countries; some countries use English language as native language while others use it as the second language. The evident in one study that allowed for comparisons with native English –speaker norms, the gap between English learners and native speakers is increase across grade level (Sunders, Goldenberg and Marcelletti, 2013). Namibia, South Africa and Tanzania are some countries which used English as the medium of instruction while the language is their second language. Several obstacles in English being the medium of instruction, claims are that students’ level of proficiency in English is not high enough to meet the learning requirements and also problem with proficiency of teacher’s (Wolfaardt, 2001).

Another Tanzanian writer suggested that, the key success to English is not in using it as a medium of instruction but rather in improving the teaching of English as a subject (Qorro, 2004). It is through the medium of instruction that successive generations are supposed to benefit from experience through language which each generation shares disputes, resolves and refines its experience however the speaker and writers must be competent in, familiar and comfortable with it (Senkoro, 2004). Therefore the study by Cantoni (2007) found that together with other factors i.e. teachers authority and their methods of teaching, the use of English as a medium of instruction hinders the full participation of the students because it does not seem to provide comprehensible input, does not work as a tool constructing knowledge in the content subject and an obstacle for the leaner centeredness.

# 2.6 Theories in Eaching

Concepts of teaching derived from theories of learning, some teaching theories are learning theories especially the mechanistic model other are analyses from teaching behavior and its consequences and from experiments.

# 2.6.1 Dewey’s Theory

Dewey’s Theory; the theory was proposed by John Dewey (1938) he concentrated his basic principle with those of traditional education. Dewey’s system is organized around several key concepts the central concept is experiment where all education comes about through experience. The central problem of an education based upon experiences is to select the kind of present experiences. The second concept is democracy where Dewey (1938) beliefs that democratic social arrangements promote a better quality of human experience Dewey (1938). The third concept is continuity which means that every experience both takes up something from those which have gone before and modified in some way the quality of those which come after for example growth and development Dewey (1938). The fourth concept is interaction which refers to interpreting experience in its education, force and assigns equal rights to both factors in experience- objective and internal conditions. In a certain sense every experience should do something to prepare a person for later experiences of a deeper and more expensive quality.

# 2.6.2 Inquiry Theory

The idea of the inquiry theory is taken from Dewey’s especially his formulation of scientific thinking and in those of cognitive theorists is variously referred to as discovery method, the inquiry method, self directed learning or problem-solving learning. The approach to teaching through inquiry was proponent Bruner (1966). It is process of constructing a theory of instruction that will meet these four conditions; it should specify effectiveness of individual bias toward learning, structure of the knowledge by the learner, effective sequences of presenting material and the nature and space for rewards and punishments. The two theories discussed above applied mostly in developed countries.

# 2.6.3 Modeling Theory

Teaching through modeling; is the most elaborate system of thought on imitation, identification or modeling as concepts of teaching, it has been developed by Albert Bandura (1977), Social learning. In teaching by modeling the teacher behaves in the ways he wants the learners to imitate, the teacher’s technique is role modeling. The theory is mostly used in developing countries like Tanzania.

# 2.7 Education System in Tanzania

The system of education in Tanzania consists of preschool two years, primary school seven years, O-level secondary education four years, A-level two years and university education. The current issues affecting education in Tanzania include English language as a medium of instruction, poor planning and administration, corruption and misappropriation of public fund, frequent changes in curriculum and lack of trained teachers. The current education policy could be viewed as dominated by political influence where the policy mission, vision and goals are well stated and geared to solve problem of insufficient in infective education services in the country, but the objective had never been realized since inception of the policy in 1995 (Ngungat, 2008).

Big Results Now (BRN) was unveiled by President Kikwete in February 2013 as a system of development implementation described as a fast-track people – centered growth ‘marathon” focuses on six priority areas articulated in Tanzania National Development Vision 2025: energy and natural gas, agriculture, water, education, transport and mobilization of natural resources. The education sector is among six priorities which has developed nine key initiatives to improve the quality of basic education and thereby increasing the pass rates in primary and secondary schools (TIE, 2013). Before these initiatives can be realized the core causes of poor education system in Tanzania must be addressed.

# 2.8 Performance Measurement

Performance measurement refers to the process of evaluating how well organizations are managed and value they deliver for customers and other stakeholders (Moulin, 2007), Performance measurement is a process of collecting, analyzing and reporting information regarding the performance of individual, group, organization system or component.

Student performance plays an important role in producing the best quality graduates who will become greater leader and manpower for the country’s economic and social development (Ali *et al.,* 2009) in (Asikhia, 2010). Student academic performance can be affected by different factors like class schedules, class size, English text books, homework, environment of the class technology used and financial. Another study by (Laddunuri, 2012) found many factors contributing to the student’s failure in form four examinations in Tanzania including lack of competence trained teachers, poor infrastructural facilities in school, insufficient books in the school library, high cost of books and frequency changes in curriculum.

# 2.9 Teaching Methods and Students’ Performance

Studies have shown that there is a relationship between teaching methods and students’ Performance as for example it has been found that teachers who used a specific style of evidence-based teaching and operate within a developmental learning paradigm had an increase effect on student learning outcome (Griffin, 2007) thus teaching methods play an important role in producing good students’ performance.

Furthermore, several studies conducted on teaching methods in many parts of the world have demonstrated that teaching methods impact students’ performance. For example in USA (Haas, 2002), Nigeria (Asikia, 2010, Bategeka, 2012), and (Luntungan, 2012). These studies clearly indicate that teaching methods used by the teacher have an impact on students’ performance and medium of instruction also impacts on students’ performance (Senkoro, 2004 and Canton, 2007).

# 2.10 Empirical Literature Review

Several studies have been conducted on the subject of effects of teaching methods on students ‘or school performance. Next is a discussion of some of the relevant studies done in different countries. The study conducted in USA by Haas, (2002) about Teaching Methods on Students Achievement. This study looked on teaching methods used in all subjects, while the proposed study examined teaching methods used in science subjects at A-level. The study found that teaching methods influence student learning.

Another study on teaching method was carried by Gulobia, Wokadala and Bategeka (2010) in Uganda. This study analyzes the link between educational inputs; teaching methods and pupils’ performance in primary schools while the proposed study examined the teaching methods used in secondary schools (A-level). The findings showed that teaching and learning strategies contribute to better school performance.

Sajjad, (2011) conducted a study in Karachi Pakistan on effective teaching methods at higher education level. The study determined the effectiveness of the various teaching methods used for teaching student at graduate level from the faculty of arts while the proposed study examined the effects of teaching methods on students’ performance in science subjects in public secondary schools at A-level.

The research found that lecture method was the best teaching method followed by group discussion, other teaching methods rated are individual presentation, seminars, workshops, conferences, brain storming and case study. Students’ perception and ratings about the interesting and effective teaching methods is a way to suggest improvement on teaching or learning process.

# 1.11 Conceptual Framework

The conceptual framework explains either graphically or in narrative from the major issues in the study, including the constructs or variables and presumed relationship among them (Kombo and Tromp, 2006). Figure 2.1 is a conceptual framework which shows the relationship between three sets of variables in this research. Independent variables are conceptualized as the participatory methods (recitation, brainstorming, group discussion and presentation) and non-participatory methods of teaching lecture, seminars, presentation while dependent variables are conceptualized as the academic and non academic which in turn have effect on students’ performance.

**Independent Variables Depended variables**

**Students’ performance**

**(a) Academic**

* good result
* repeat of exercise
* debate
* goal achievement

**(b) Non –academic**

* student attendance
* Discipline
* -sports

**Teaching methods**

**(a) Participatory methods**

**(Learner centered methods)**

* recitation
* brain storming
* group discussion

(b**)** **Non participatory methods**

 **(Teacher- centered)**

* Lecture
* presentation
* seminar

B

**Intervening Variables**

* Economic condition
* Government Policy
* Classroom Environment

Figure 2.1: Conceptual Frameworks

**Source:** Developed for this research (2014)

However both participatory and non-participatory methods of teaching are important in learning (MIE, 2004), (Haas, 2002), and (Globa, Wakadala and Bategeka, 2010), and each is appropriate depending on the environment within which they are used. Intervening variables are conceptualized as the economic conditions, government policy and classroom environment which moderate the effect of independence variables on dependence variables.

# 2.12 Research Gap in Literature

As noted in the discussions in section 2.8, most of these studies have been done outside of Tanzania. Furthermore, most of these studies used either qualitative (interview and focused group discussions) or quantitative (questionnaire). Little or no research has been conducted on this topic in Tanzania. This research fills this knowledge gap and examined the effects of teaching methods on students’ performance in public secondary schools in Nyamagana District Mwanza, Tanzania.

# CHAPTER THREE

# 3.0 RESEARCH METHODOLOGY

# 3.1 Introduction

This chapter deals with the explanation of methods that were expected to be applied in carrying out this research which includes research design, area of study, targeted population, and sample size, data collection methods of data analysis and validity and reliability of the study.

# 3.2 Research Design

Research design is a mapping strategy or the choice of the researcher about components of his/ her project (Singh, 2006). It has also defined by Gimbi in Mbogo *et al*. (2012) as a plan for collecting and utilizing information by interviewing or administering a questionnaire to a sample of individuals, (Orodho, 2003) in Kombo and Tromp (2006). This study composed descriptive survey design which helped to obtain more information about the study. The design is also purposefully selected due to condition for collection and analysis data that is relevant to the targeted population, data sources and instruments like questionnaire. The design can be used when collecting information about people’s attitudes, opinions, habits or any of the variety of the education or social issue, (Orodho and Kombo, 2002) in (Kombo and Tromp. 2006).

# 3.3 Geographical Area of Study

Geographically Mwanza city shares border with Ukerewe District to the North –East. Magu District to the South –East while on the South-West is Misungwi District and to the North-West is Lake Victoria. It covers an area of 1,325 square kilometers of which 425 is dry land and the remaining 900 square kilometers is covered by water, United Republic of Tanzania (URT) 2005). Throughout the year, Lake shore communities engage in agriculture (crop farming and animal keeping), industrial like fishing activities as their mainstay in the area. Other economical activities are trade, manufacturingand education.

# 3.4 Targeted Population

The research was conducted in five public secondary schools (A-level) in Nyamagana District of Mwanza Region Tanzania. It includes Pamba, Nganza, Nsumba, Mwanza and Mkolani secondary schools. The area was selected because it is situated near the researcher and residence the researcher would have easy access to the required data. There are three categories of participants in this research which are teachers, students and inspectors, details of each categories in targeted population is shown in Table 3.1.

**Table 3.1: Distribution of Targeted Population of Study**

|  |  |  |  |
| --- | --- | --- | --- |
| **School/ Categories of Participants** | **Level** | **Population** | **Total Population** |
| Mwanza Secondary School | F.V | 106 | 243 |
| F.VI | 137 |
| Pamba Secondary School | F.V | 20 | 75 |
| F.VI | 55 |
| Msumba Secondary School | F.V | 214 | 457 |
| F.VI | 243 |
| Nganza Secondary School | F.V | 96 | 267 |
| F.VI | 172 |
| Mkolani Secondary School | F.V | 45 | 120 |
| F.VI | 75 |
| School inspectors |  | 09 | 09 |
| Science subject teachers |  | 78 | 78 |
| **Total** |  | **Total** | **1250** |

Source: Schools Administration Information (2013)

# 3.5 Sample Size

Sample size refers to the number of items to be selected from the universe to constitute sample (Kothari, 2004). Technically, the size of the sample depends on the type of research design being used, desired level of confidence in the result the amount of accuracy wanted and the characteristics of the population of interest. Thus, it is important to note that there is no single best way that can be used to determine sample size (Singh, 2006). Regardless of the used method to determine the size, sample size should be large enough and representative.

The study used Toro formula of 1967 as elaborated bellow:

n = $\frac{N}{N+N\left(e\right)2}$

Where

n = sample size

N= total population=1250

 e= sampling error =0.005

n=$\frac{1250}{1+1250\left(0.005\right)2}$

n=1250/1+1250(0.005)2

n=1250/1+4.8

n=1250/5.8

n=215.517~ 216

n=216

Sample size =216

# 3.6 Sampling Procedure

The study used stratified random sampling method for selecting students. This approach is preferred because it involves dividing the population into homogeneous subgroups and then taking a simple random sample in each group (Kombo and Tromp, 2006). The procedure of drawing a stratified random sample included all advanced level students and teachers of science subjects in secondary schools in Nyamagana district and school inspectors and each group as unique identified according to the data given from administration system. This list is subjected to Microsoft for random statistical calculations to get the percentage equivalent of 216 expected to sample. Therefore, stratified simple random sampling will be adopted in this study for selecting respondent.

# 3.7 Data Sources

The study obtained its data from two major sources of data namely primary and secondary sources.

# 3.7.1 Primary Data

Primary data is information gathered directly from respondents through questionnaire, interview, focused group discussions, observation and experimental studies, (Kombo and Tromp, 2006).

# 3.7.2 Secondary Data

Secondary data are not data collected directly by the user nor specifically for the user, analysis of published material or information from internal sources that can be documented or electronically stored information, they often referred to as desk research, (Kombo and Tromp, 2006).

# 3.8 Data Collection Instruments

There are two methods which was used to collect data namely questionnaire and in-depth interview.

# 3.8.1 Questionnaire

The first instrument used to collect primary data was questionnaire, it consist of number of questions printed or typed in definitive order on a form or set of forms Kothari (2004). The questionnaire which is composed mostly multi choice closed questions were expected to be used, and were given to targeted sample population by the researcher. The questionnaire technique has chosen because it reduces cost, free from the bias, respondent has adequate time to give their feelings. The format of questionnaire consisted of lirkert scale and multiple choices the questionnaire distributed by the researcher not emailed or posted that were possible because the researchers’ residence is near by the area of the study. The sample of questionnaire are appendices I and II.

# 3.8.2 In-depth Interview

The second primary data collection method was interview guide protocol designed and administered to key informants to capture qualitative information. The key informant for in- depth interview were 9 school inspectors, and these was purposely chosen to get more information about the effects of teaching methods on students’ performance in comparisons with information given by teachers and students. Appendix III is sample of interview protocol.

# 3.9 Data Analysis

Two different ways of analyzing data were used. First quantitative data was analyzed using descriptive statistics with the help of SPSS and excel and presented as percentages and figures, the percentage number of respondents according to descriptive variables. It was represented as frequency table. Second qualitative data involved explanation direct quotation from the interviewees and description of findings, content analysis techniques was used and presented as themes and ethics.

# 3.10 Reliability and Validity of Data

# 3.10.1 Validity

Validity is the extent to which the instruments used during the study measure the issue they are intended to measure (Amin, 2005). To ensure validity of data instruments developed under close guidance of the supervisor. Pre tested of the questions with ten teachers and students in the sample after designed was very important to identify ambiguous questions in the instruments and be able to re-align to the objectives.

# 3.10.2 Reliability

Reliability is measure of how consistent the result from a test is, example if you administer a test to a subject twice do you get the same score in the first and second administration (Kombo and Tromp, 2006). This means the degree of consistency demonstrated in the study. The reliability was guaranteed by carrying out a pre- test of the questionnaire in a pilot study with participants from targeted population; their comments were incorporated in the final version.

# 3.11 Unit Analysis

The unit of analysis is the major entity that is being analyzed in a study. In this study the unit of analysis is the teaching methods and students and teachers are unit of observation.

# 3.12 Ethical Considerations

Ethics affect the rights of the researcher and participants (Emory and Cooper, 1991). It therefore was important to address ethical issues, prior the start of data collection as well as during data analysis. This study addressed these issues as follows: first, obtain permission from The Open University of Tanzania and from the heads of school seeking consent from the respondent second, confidentiality of the information and providing data without manipulation was adhered to. Data collected was presented as a group rather than individual, (Borg and Gall, 1989). In brief, by adopting above strategies the researcher was able to attain appropriate data which insured quality research.

# CHAPTER FOUR

# 4.0 FINDINGS AND DISCUSSION

# 4.1 Introduction

This chapter presents research findings and discussion based on collected information from Nyamagana District Secondary School students, teachers and inspectors. The main objectives of the study were on Effects of Teaching Methods on Students’ Performance A Case of Public Secondary Schools in Nyamagana District –Mwanza. Research questions which respondents answered were related to objectives under here:

1. To identify teaching methods used in instruction of science subjects in public secondary schools in Nyamagana District- Mwanza.
2. To assess students’ perception of the appropriateness of teaching methods used in teaching in public secondary schools in Nyamagana –District, Mwanza
3. To determine the extent to which teaching methods impact on students’ performance in public secondary schools in Nyamagana District, Mwanza

# 4.2 Background Information of the Respondents

# 4.2.1 Categories of Respondents

There were three categories of respondents in this study First, teachers to whom 78 questionnaires were distributed and only 70 were returned and usable. This represents 89.7% response rate. Next, were students to whom 129 questionnaires were distributed and 124 were returned and usable. This represents 96.1% response rate. Third, were inspectors to whom 9 were expected to be interviewed only 6 were interviewed and usable? This represents 66.7% interviewee rate. In general the above response rates are above the industry standard of 40 - 60% (Mugenda and Mugenda, 2003).

# 4.2.2 Characteristics of Respondents

# 4.2.2.1 Sex of Respondents

Table 4.1(a): Gender of Respondents (Students)

|  |  |  |  |
| --- | --- | --- | --- |
| **Sex** | **Frequency** | **Percent** | **Cumulative Percent** |
| Male | 77 | 62.1 | 62.1 |
| Female | 47 | 37.9 | 100.0 |
| **Total** | **124** | **100.0** |  |

Source Field Survey (2014)

Table 4.1(a) indicates that 62.1% of respondents (students) are male and 37.9% are female. This shows that the student’s populations in A- level secondary schools in Nyamagana District are skewed towards the male population.

|  | **Sex** | **Frequency** | **Percent** | **Cumulative Percent** |
| --- | --- | --- | --- | --- |
|  | Male | 46 | 65.7 | 65.7 |
| Female | 24 | 34.3 | 100.0 |
| **Total** | **70** | **100.0** |  |

Table 4.1(b) Gender of Respondents (Teachers)

Source: Field survey (2014)

Table 4.1(b) indicates that 65.7% of the respondents (teachers) are male and 34.3% are female. These results suggest that teaching staff in Nyamagana District Secondary schools are dominated male teachers.

# 4.2.2.2 Current Level of Education

Table 4.2(a): Respondents (Students) Level of Education

|  | **Level of Education** | **Frequency** | **Percent** | **Cumulative Percent** |
| --- | --- | --- | --- | --- |
|  | Form V | 61 | 49.2 | 49.2 |
| Form VI | 63 | 50.8 | 100.0 |
| **Total** | **124** | **100.0** |  |

Source: Field survey (2014)

Table 4.2(a) shows that 50.8% are Form VI and 49.2% are Form V. These results suggest that students are evenly distributed in both classes.

Table 4.2(b) Respondents (Teachers) Level of Education

|  | **Level of Education** | **Frequency** | **Percent** | **Cumulative Percent** |
| --- | --- | --- | --- | --- |
|  | Master’s degree | 6 | 8.6 | 8.6 |
| Postgraduate  | 2 | 2.9 | 11.4 |
| First Degree | 39 | 55.7 | 67.1 |
| Diploma Course | 23 | 32.9 | 100.0 |
| **Total** | **70** | **100.0** |  |

Source: Field Data (2014)

Table 4.2(b) indicates that 55.7% of the teachers are first degree holders, 32.9% are holders of Diploma 11.4% have a master’s degree/ post graduate qualification. This result suggests that secondary schools in Nyamagana District are staffed with qualified teachers.

# 4.2.2.3 Science Subject Combination of the Respondents

Table 4.3: Respondents (Students) Combination of Science Subject

|  | **Combination** | **Frequency** | **Percent** | **Cumulative Percent** |
| --- | --- | --- | --- | --- |
|  | PCM | 32 | 25.8 | 25.8 |
| PCB | 54 | 43.5 | 69.4 |
| CBG | 31 | 25.0 | 94.4 |
| EGM | 6 | 4.8 | 99.2 |
| CBN | 1 | .8 | 100.0 |
| **Total** | **124** | **100.0** |  |

Source: Field Data (2014)

Table 4.3 shows that 43, 5% of the respondents (students) are taking PCB, 25.8% are taking PCM, 25.0% are taking CBG, 4.8% are taking EGM, and 1(0.8%) are taking CBN. The results suggest that chemistry is a popular subject taken by most students in the studied schools and therefore it should be one of the subject to be given most attention when adopting different methods of teaching.

#  4.2.2.4 Name of school

Table 4.4: Respondents (Teachers) Name of School

|  | **School Name** | **Frequency** | **Percent** | **Cumulative Percent** |
| --- | --- | --- | --- | --- |
|  | Mwanza | 10 | 14.3 | 14.3 |
| Pamba | 11 | 15.7 | 30.0 |
| Nsumba | 18 | 25.7 | 55.7 |
| Ngaza | 21 | 30.0 | 85.7 |
| Mkolani | 10 | 14.3 | 100.0 |
| **Total** | **70** | **100.0** |  |

Source: Field Data (2014)

Table 4.4 shows that 30.0% of the respondents (teachers) are from Nganza secondary. School, 25.7% are from Nsumba, 15.7% are from Mwanza, 14.3% are Pamba sec. school and 14.3% are from Mkolani. The results suggest that teachers in secondary schools in Nyamagana district are fairly distributed.

# 4.1.2.5 Working Experience of Respondents

As shown in Table 4.5, 65.7% of the respondents (teachers) have experience of less than 5 years, 24.3% are in 5-10 group, 1.4% are in 10-15 group, 4.3% are in 15-20 group, the rest 4.3% are above 20 years.4.

Table 4.5: Respondents (Teachers) Working Experience

|  | **Year** | **Frequency** | **Percent** | **Cumulative Percent** |
| --- | --- | --- | --- | --- |
|  | Less than five years | 46 | 65.7 | 65.7 |
| Between 6 and 10 years | 17 | 24.3 | 90.0 |
| Between 11 and 15 years | 1 | 1.4 | 91.4 |
| Between 16 and 20 years | 3 | 4.3 | 95.7 |
| Above 21 years | 3 | 4.3 | 100.0 |
| **Total** | **70** | **100.0** |  |

Source: Field Data (2014)

# 4.3 Research Objectives

This research had three objectives and the results of each objective are discussed next.

#  4.3.1 Teaching Methods Used in Instruction of Science Subjects in Public Secondary Schools

# 4.3.1.1 Teaching Methods Used in Teaching Science Subjects

Table 4.6: Teaching Methods Used in Teaching Science Subject

|  | **Teaching Methods** | **Strongly Agreed** | **Agree** | **Neutral** | **Disagree** | **Strongly Disagree** |
| --- | --- | --- | --- | --- | --- | --- |
|  | Question and Answer | 31(44.3%) | 26(37.1%) | 8(11.4%) | 2(2.9%) | 3(4.3%) |
| Brainstorming | 36(51.4%) | 14(20.0%) | 10(14.3%) | 8(11.4%) | 2(2.9%) |
| Group discussion | 37(52.9%) | 18(25.7%) | 11(15.7%) | 3(4.3%) | 1(1.4%) |
| Presentation | 29(41.4%) | 25(35.7%) | 11(15.7%) | 3(4.3%) | 2(2.9%) |
| Lecture | 11(15.7%) | 16(22.9%) | 15(21.4%) | 16(22.9%) | 12(17.1%) |
| Seminar | 9(12.9%) | 20(28.6%) | 16(22.6%) | 16(22.6%) | 9(12.9%) |
| Demonstration | 16(22.9%) | 25(35.7%) | 11(15.7%) | 6(8.6%) | 12(17.1%) |

Source: Field Data (2014)

As indicated in Table 4.6, question and answers method was identified by teachers as the most used method in teaching science subjects (81.4%) followed by group discussion (78.6%), presentation (77.1%), brainstorming (71.1%), demonstration (58.6%), seminar (41.5%) and the least being lecture method (38.5%). The result suggests that science subject should use at least three teaching methods one of them should be question and answers because it is the excellent way of teaching and oral testing, stimulating student thinking and learning. The results are summarized by a comment from respondents (teachers) “I have found that student understand and grasp science concept better, students have the opportunity to ask for clarification as opposed to dormant methods such as seminars and lecture.

# 4.3.1.2 Teaching Methods Considered to be Effective

Table 4.7: Effectiveness of Teaching Methods

|  | **Teaching Methods** | **Strongly Agreed** | **Agree** | **Neutral** | **Disagree** | **Strongly Disagree** |
| --- | --- | --- | --- | --- | --- | --- |
|  | Question and Answers | 40(57.1%) | 23(32.9%) | 5(7.1%) | 0 | 2(2.9%) |
| Brainstorming | 25(35.7%) | 25(35.7%) | 13(18.6%) | 6(8.6%) | 1(1.4%) |
| Group Discussion | 41(58.6%) | 19(27.1%) | 5(7.1%) | 1(1.4%) | 4(5.7%) |
| Presentation | 24(32.3%) | 30(42.9%) | 9(12.9%) | 3(4.4%) | 4(5.7%) |
| Lecture | 15(21.4%) | 17(24.3%) | 16(22.9%) | 11(15.7%) | 11(15.7%) |
| Seminar | 9(12.9%) | 20(28.6%) | 16(22.9%) | 16(22.9%) | 9(12.9%) |
| Demonstration | 37(52.9%) | 21(30.0%) | 9(12.9%) | 1(1.4%) | 2(2.9%) |

Source: Field Data (2014)

As noted in Table 4.7 the question and answers method selected by teachers as effective method in making students understand the science subjects followed by group discussion, demonstration, presentation, brainstorming, lecture and list effective method being the use of seminar. These results suggest that question and answers, group discussion and demonstration are the excellent ways of giving students an opportunity to voice their opinion/views in light of what they have been taught or are aware of.

Group discussion also demonstrated as a good way of engaging students in active learning or students centered approach. The idea also summarized by one of the interviewee that:

*“Some skills in science subjects cannot be attained easily by students unless teaching methods that involve different activities during learning process used”*

The choice of which teaching method to be used, depends on factors like, availability of teaching/ learning materials, appropriate number of students, nature of the subject and flexibility of the teacher. Generally the teaching methods identified as the most used in instructions of science subject in public secondary schools in Nyamagana District are question and answers followed by group discussion. Other methods are presentation, brainstorming, demonstration seminars and the list being lecture method.

# 4.3.2 Assessment of Students’ Perception of the Appropriateness of Teaching Methods

# 4.3.2.1 Teaching Methods that Help Students to Understand Subject Matter

Table 4.7 indicates that 56.5% of the respondents (students) to some extent, 31.5% to large extent, 9.7 to very large extent and 2.4% I do not know. The results clearly shows great number of students respondents that they do not really grasp the subject matter most of the time during instruction from their teachers probably because of the methods used in teaching when introduce new concept.

Table 4.8: Easiness of Understanding

|  | **Understanding** | **Frequency** | **Percent** | **Cumulative Percent** |
| --- | --- | --- | --- | --- |
|  | To very large extent | 12 | 9.7 | 9.7 |
| To large extent | 39 | 31.5 | 41.1 |
| To some extent | 70 | 56.5 | 97.6 |
| I do not know | 3 | 2.4 | 100.0 |
| **Total** | **124** | **100.0** |  |

Source: Field Data (2014)

# 4.3.2.2 Teaching Methods Used by Teachers and their Effect in Aiding Understanding of Science Subject

As shown in Table 4.9 the question and answers, demonstration and group discussion methods were selected by students as they help them understand the science subjects, other methods are brainstorming, presentation, seminar and lecture. These results suggest that science subjects should use methods that involve participation of students because science subjects involve many calculations and diagrams which need physical practice.

Table 4.9: Teaching Methods that Helps Students Understand Science Subjects

|  | **Teaching Methods** | **Strongly Agreed** | **Agree** | **Neutral** | **Disagree** | **Strongly Disagree** |
| --- | --- | --- | --- | --- | --- | --- |
|  | Question and Answers | 71(57.3%) | 42(33.9%) | 7(5.6%) | 4(3.2%) | 0 |
| Brainstorming | 18(14.5%) | 61(49.2%) | 32(25.8%) | 6(4.8%) | 7(5.6%) |
| Group Discussion | 75(60.5%) | 30(24.2%) | 18(14.5%) | 0 | 1(0.8%) |
| Presentation | 29(23.4%) | 44(35.5%) | 32(25.8%) | 17(13.7%) | 2(1.6%) |
| Lecture | 22(17.7%) | 21(16.9%) | 41(33.1%) | 22(17.7%) | 18(14.5%) |
| Seminar | 6(4.8%) | 29(23.4%) | 22(17.7%) | 28(22.6%) | 39(31.5%) |
| Demonstration | 72(58.1%) | 34(27.4%) | 9(7.3%) | 6(4.8%) | 3(2.4%) |

Source: Field Data (2014)

The findings are different from the study by Sajjad, (2011) found that lecture method was rated the best teaching method, followed by group discussion because of more participation of students and they do not rely on rote learning, other methods rated are individual presentation, seminars, workshop, conferences, brainstorming and case study. These controversies implies that suitable methods are cultural dependant that is, for African students who get exposure to new concept the first time needs a different approach as opposed by students in Western Societies where science concepts are learnt and experienced in everyday life.

In general, students’ perception of the appropriateness of teaching methods used in teaching is teachers should use methods that involve participation of students because science subjects need full participation of students especially in introducing new concepts.

# 4.3.2.3 Ranking of Teaching Methods

Table 4.10: Ranking of Teaching Methods

|  | **Teaching Methods** | 1st Most | **2nd Most** | **3rd Most** | **4th Most** | **5th Most** | **6th Most** | **7th Most** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Question and Answers | 23 | 61 | 20 | 8 | 4 | 4 | 4 |
| Brainstorming | 71 | 35 | 8 | 5 | 2 | 1 | 2 |
| Group Discussion | 60 | 22 | 18 | 10 | 5 | 6 | 3 |
| Presentation | 20 | 41 | 32 | 22 | 4 | 3 | 2 |
| Lecture | 25 | 11 | 24 | 17 | 25 | 11 | 11 |
| Seminar | 6 | 13 | 20 | 31 | 31 | 14 | 9 |
| Demonstration | 78 | 21 | 9 | 8 | 5 | 1 | 2 |

Source: Field Data (2014)

As noted in Table 4.10 demonstration method (78%) was ranked by students as the most effective method in making them understand the science subjects because it involve “feel and show” the next most effective method was brainstorming followed by question and answers, group discussion, presentation, lecture and the least being use of seminars. These results suggest that science subject teachers should use at least two teaching methods one of them should be demonstration, because in science subject students learn and remember better when they physically see an activity being performed by their instructor.

These results disagree with findings of Sajjad, (2011) who showed that lecture method was rated as the best teaching method, the second teaching method rated as the best teaching method is group discussion, and other teaching methods rated are individual presentation, seminars, workshops, conferences, brain storming and case study. In brief, this controversy implies that suitable methods of teaching are cultural dependant and general environment of providing education.

# 4.3.3 The Extent to which Teaching Methods Impact on Students’ Performance in Public Secondary Schools

# 4.3.3.1 Methods Used in Preparation for Assessments

As shown in Table 4.11, group discussion (88.6%) and combination of strategies (88.6%) are selected by students as the best methods that help and prepare them for assessments (exercises, tests and exams). Other methods followed are question and answers (87.1%), brainstorming (84.3%), demonstration (80.0%) lecture (71.4%) presentation (60.0%) and the use of seminars (47.1%) being the least.

These results clearly demonstrate that group discussion, question and answers or combination of strategies are superior teaching methods not only in introducing new concepts but also in revising the taught subject matter. These results agree with previous studies by J-Ping and Collis (1995) in (Faraday, Overton and Cooper, 2011) who showed that at least two teaching methods ought to be used to make teaching effective.

Table 4.11: Teaching Methods Preferred in Preparing Students for Assessments

|  | **Teaching Methods** | **Strongly Agreed** | **Agree** | **Neutral** | **Disagree** | **Strongly Disagree** |
| --- | --- | --- | --- | --- | --- | --- |
|  | Question and Answers | 41(58.6%) | 20(28.6%) | 6(8.6%) | 2(2.9%) | 1(1.4%) |
| Brainstorming | 35(50.0%) | 24(34.3%) | 7(10.0%) | 0 | 4(5.7%) |
| Group Discussion | 28(40.0%) | 34(48.6%) | 4(5.7%) | 1(1.4%) | 3(4.3%) |
| Presentation | 16(22.9%) | 26(37.1%) | 13(18.6%) | 6(8.6%) | 9(12.9%) |
| Lecture | 28(40.0%) | 22(31.4%) | 14(20.0%) | 2(2.9%) | 4(5.7%) |
| Seminar | 17(24.3%) | 16(22.9%) | 14(20.0%) | 8(11.4%) | 15(21.4%) |
| Demonstration | 31(44.3%) | 25(35.7%) | 8(11.4%) | 4(5.7%) | 2(2.9%) |
|  | Combination of strategies | 43(61.4%) | 19(27.1%) | 6(8.6%) | 0 | 2(2.9%) |

Source: Field Data (2014)

In summary, the teaching methods used in teaching in public secondary schools in Nyamagana District have high impact on students’ performance as shown by students that group discussion, combination of strategies, question and answers and brainstorming have high percentages to show effectiveness. At least more than one method should be used to make teaching effective. These results agree with previous studies by J-Ping and Collis (1995) in (Faraday, Overton and Cooper, 2011).

# 4.4 Issue from Interviews

The research interviewed 6 inspectors and the following are issues raised from the interviews. First the inspectors commented that teaching methods including participatory (question and answers, brainstorming, group discussion and demonstration) and non-participatory methods (lecture, seminar and presentation) influence performance of students especially in teaching science subjects. Participatory (learner - centered) methods are important in teaching science subjects and they help student to perform different activities in the class during teaching/ learning process and make students to have long memory. Some science skills cannot be obtained easily by students unless demonstrated by the teacher and lecturing is done they also need full participation of students because involve much calculations and diagrams which need to be demonstrated, discussed in groups and brainstorming questions should follow so as to enable teachers know to what extent the students have understood what they have taught. They also commented that learner centered methods enables students to share their views and what they know about the subject matter and contribute to the topic as they are motivated and need to know more about the topic taught/ discussed.

Second, inspectors justified that teacher centered method are used in teaching because the students are being introduce to new concept and if used properly they can improve academic performance of students. Teacher centered methods are helpful in coverage of syllabus, they should be used for the purpose of clarifying information to a large group in a short period of time, useful in situations where the aim is to provide frame work of idea and theories, these include lecture and seminars.

Third, as which methods are commonly used, they were identified by inspectors as demonstration, brainstorming, group discussion, field trip, lecture, presentation question and answers extra, the choice of which method to use depend on the knowledge of the learners, classroom environment, teaching and learning materials, experience of the teacher and flexibility and nature of the topic or subject matter to be taught. They stressed that teaching methods are very important and can influence performance of the student thus the proper choose and use of these methods can lead to better performance of students.

Fourth, other factors raised by interviewees in terms of their influences on students’ performance were good infrastructures, good administration and proper number of students in the classroom and presence of teaching/learning materials. The interviewees also commented that, poor performance in Tanzanian education system is caused by frequent changes in curriculum and lack of competent trained teachers, lax in the seriousness of students (i.e. students do not take their education seriously). The current policy of education need to be reviewed in order for the challenges to be addressed for the better students’ performance. Finally, regarding choice of teaching methods inspectors commented that factors such as teachers’ flexibility, availability of teaching/learning materials, classroom environment and the topic to be taught need to be considered in selecting the appropriate teaching method.

# CHAPTER FIVE

# 5.0 CONCLUSION AND RECOMMENDATIONS

# 5.1 Introduction

This chapter presents conclusion recommendations and suggestion for further research based on collected and analyzed information in chapter four.

# 5.2 Conclusion

This study had three objectives as elaborated under here:

# 5.2.1 Research Objective One: To Identify Teaching Methods Used in Instruction of Science Subjects in Public Secondary Schools in Nyamagana District- Mwanza

The study revealed that teaching methods identified by respondents (teachers) as the most used in teaching science subjects are question and answers, group discussion, presentation, brainstorming, demonstration, seminars and lecture. These methods make students understand and grasp science concepts better. Learner-centered methods are thus emphasized because they provide opportunity to ask for clarification compared to teacher- centered methods such as lecture and use of seminars which place the students at the receiving end.

# 5.2.2 Research Objective Two: To Assess Students’ Perception of the Appropriateness of Teaching Methods Used in Teaching in Public Secondary Schools in Nyamagana –District, Mwanza

The study revealed that a great number of students do not really understand and grasp the subject matter most of the time during instruction when new concepts are introduced. Question and answers, demonstration and group discussion were selected by students as most effective method of understanding new concepts in science subjects. However it was revealed that the suitable methods of teaching are cultural dependent but science subject teachers should use at least two teaching methods and demonstration method should be one because in science subject’s student learns more and remember better when they physically see an activity being performed by their instructor.

# 5.2.3 Research Objective Three: To Determine the Extent to which Teaching Methods Impact on Students’ Performance in public secondary schools in Nyamagana District, Mwanza

The study revealed that question and answers, group discussion, or combination of these strategies were selected by students as superior methods that prepare them for assessment either in their tests or final examination. The same teaching methods were preferred by students when teachers are introducing new concepts. Thus at least more than one teaching method should be used to make teaching effective.

The study also revealed that there is greater impact on teaching methods and student performance as it demonstrated that teaching methods such as group discussion, question and answer and combination of strategies are excellence ways of teaching which in turn have positive impact on students’ performance. Students often have little expertise in knowing if the method selected by an individual instructor was the best teaching method or just “a method” or simply the method with which the teacher was most comfortable.

This study has demonstrated that types of teaching methods used by teachers have impacts on students’ performance. This agrees with the previous studies of Haas, (2002), Gulobia, Wokadala and Bategeka (2010) and Sajjad, (2011).

Generally, the study revealed that teaching methods which were most effective are demonstration the next is brainstorming followed by question and answers, other methods are group discussion, presentation, lecture and the use of seminar being the least effective. Teacher’s choice of teaching strategy or model to enable effective teaching and learning is affected by context in that, for example, it would be difficult to do ‘role play’ or whole class ‘questioning’ in a noisy workshop within confined space. In brief the type of teaching methods has an impact on students’ performance. Question and answers method has the greatest impact in teaching of science subjects compared to other teaching methods and this agrees with previous with the study by J-Ping and Collis (1995) in (Faraday, Overton and Cooper, 2011) and contribution to the body of knowledge.

# 5.3 Recommendations

The results of this study revealed several areas of concern the following are recommendations to address each of that concern. First, the findings of the study also revealed that the choice of what teaching method to be used by the instructor depend on flexibility of the teacher. This may led the students fail to grasp the subject matter. The heads of schools should showed on regular basis, find out from students on which methods is helping them to understand and their request the relevant teachers to apply the methods leads to better students’ understanding. That way high students’ performance will be insured.

+Second, the study revealed that teachers seem not be aware of value and impact of different teaching methods on students’ performance. This has lead to inappropriate application of ineffective and often outdated teaching methods (such as teacher-centered approach). The heads of schools in confliction with Ministry of Education and Vocational training should regular conduct training/ workshops on teaching methods in both science and art subjects. This will help teachers to appreciate and learn the best teaching practices particularly new teaching methods. It will also help to improve students’ performance and go along a way to meeting new government agenda of Big Results Now (BRN).

# 5.4 Areas for Further Research

The study identified areas for further research first, looked at the effects of teaching methods on students’ performance in public secondary schools in Nyamagana District, the learning condition in private secondary schools are different, thus there is need to conduct a similar research in private schools in Nyamagana Distict. Second the research concentrated on public schools in one district of Nyamagana; however before generalization can be made extensive, research in other District public secondary schools need to be performed.

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# APPENDICES

Appendix 1: Research Questionnaire

Dear respondent

My name is Mwanahamisi R. Kitti; I am a student of Open University of Tanzania doing Masters Degree in Human Resource Management (see attached letter). I am currently doing my research on ***effects of teaching methods on student performance*** in Nyamagana District Secondary schools - Mwanza. It is for academic purpose only, your assistance in providing the information is kindly requested by completing the attached questionnaire. There is no wrong or right answer.

I only need your opinion/ views on each question in the questionnaire about teaching methods.

Please be assured that the information that you provided in survey will be treated confidential

Thank you for your assistance.

Kitti, Mwanahamisi R.

MHRM,

Cell/ mobile 0755312774

Appendix 2: Questionnaire (Students only)

**Instructions:**

Choose the correct answer from the multiple choices in the box by ticking the option that best suits your experience/view .If you feel you need extra information to be filled attach plane paper at the back of the questionnaire. Other instructions are indicated as per requirement of the question.

 **A: GENERAL INFORMATION**;

Tick the appropriate answer

1. Gender of respondent

 Male

 Female

 2. Current level of education

 Form V

 Form VI

3. Which combination of science subject are you taking?

 PCM

 PCB

 CBG

 EGM

 CBN

4. Name of the school

 Mwanza secondary

 Pamba secondary

 Nsumba secondary

 Nganza secondary

 Mkolani secondary

B**. Research objective two: To assess students perception of the appropriateness of teaching methods used in teaching**

Tick the number of the specific item in the following statement that reflects your view/ opinion

5. Normally I understand well my science subject teachers during teaching in the classroom

 1) To very large extent 2) to large extent 3) to some extent 4) I do not know

|  |  |  |  |
| --- | --- | --- | --- |
|  1 |  2 |  3 |  4 |
|  |  |  |  |

6. Which teaching method used by teachers that helps you to understand in your science subjects.

 1= strongly agree, 2= agree, 3= neutral, 4= disagree, 5= strongly disagree.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  **Teaching methods** | 1 |  2 |  3 |  4 |  5 |
| (i) Question & answers |  |  |  |  |  |
| (ii) Brainstorming |  |  |  |  |  |
| (iii) Group discussion |  |  |  |  |  |
| (iv) Presentation |  |  |  |  |  |
|  (v) Lecture |  |  |  |  |  |
| (vi) Demonstration |  |  |  |  |  |
| (vii) Seminar |  |  |  |  |  |

7. Please select teaching methods bellow which you feel are most effective in teaching/ learning in preparing you for exercises, tests and final examination Use the following scale to make your selection.

 1= the most effective, 2= the second most effective 3=the third most effective,

 4= the least effective, 5= the least most effective

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Teaching methods** | 1 | 2 | 3 | 4 | 5 |
|  (i). Question & answers |  |  |  |  |  |
|  (ii). Brainstorming |  |  |  |  |  |
|  (iii). Group discussion |  |  |  |  |  |
|  (iv). Presentation |  |  |  |  |  |
|  ( v). Lecture |  |  |  |  |  |
|  (vi). Seminar |  |  |  |  |  |
|  ( vii). Demonstration |  |  |  |  |  |
|  (viii).learner-centered methods are more effective in learning/ teaching |  |  |  |  |  |

8. In general, please rank the following teaching methods in accordance to the effectiveness in helping the students to learn and perform well in science subjects. Use the following scales.

1=most important 2= second most important 3=third most important 4= fourth most important 5=fifth most important 6= sixth most important 7= the least important

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Teaching methods** | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|  (i) Question & answers |  |  |  |  |  |  |  |
|  (ii) Brain storming |  |  |  |  |  |  |  |
|  (iii) Teaching method |  |  |  |  |  |  |  |
|  (iv) Presentation |  |  |  |  |  |  |  |
|  (v) Lecture |  |  |  |  |  |  |  |
|  (Vi) Seminar |  |  |  |  |  |  |  |
|  (Vii) Demonstration |  |  |  |  |  |  |  |

**9.** Please indicateany other comments about the topic of teaching methods on school performance, write your comments below

…………………………………………………………………………………………

…………………………………………………………………………………………

Thank you for your time and assistance

Dear respondent,

My name is Mwanahamisi R. Kitti; I am a student of Open University of Tanzania doing Masters Degree in Human Resource Management (see attached letter).

I am currently doing my research ***on effects of teaching methods on student performance*** in Nyamagana Secondary schools - Mwanza. It is for academic purpose only, your assistance in providing the information is kindly requested by completing the attached questionnaire. There is no wrong or right answer. I only need your opinion/ views on each question in the questionnaire about teaching methods.

Please be assured that the information that you provided in survey will be treated confidential

Cell/ mobile 0755312774

Thank you for your assistance.

 Kitti, Mwanahamisi R.

 MHRM,

Appendix 3: Questionnaire (for Teachers Only)

**Instructions:**

Choose the correct answer from the multiple choices in the brackets (tick one)

If you feel need extra information to be filled attach plane paper at the back of the questionnaire

Other instructions are indicated as per requirement of the question.

**SECTION ONE: GENERAL INFORMATION;**

 **Tick only one**

1. Gender of respondent

 Male

 Female

2. Level of education reached

 Advance level Secondary education (A-Level)

 Diploma course

 Postgraduate diploma

 First degree

 Masters’ degree

3 Name of the secondary school

 Mwanza secondary

 Pamba secondary

 Nsumba secondary

 Nganza secondary

 Mkolani secondary

4. Number of years you have been working in this school

 Less than five (5) years

 Between 5 and 10 years

 Between 11 and 15 years

 Between 15 and 20 years

 Above 20

**SECTION TWO;**

  **A. RESEARCH OBJECTIVE ONE: To identify teaching methods used in instruction of science subjects**

5. Which teaching methods you use most in your teaching of science subject

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Teaching method** | 1 |  2 |  3 |  4  | 5 |
| (i) Question & answers |  |  |  |  |  |
|  (ii)Brainstorming |  |  |  |  |  |
|  (iii)Group discussion |  |  |  |  |  |
|  ( iv) Presentation |  |  |  |  |  |
|  (v) Lecture |  |  |  |  |  |
|  (vi) Seminar |  |  |  |  |  |
|  (vii)Demonstration |  |  |  |  |  |

Why? ………………………………………………………………………

6. Select the following teaching method and also indicate the extent you agree or disagree in terms of their effectiveness in making student understand the subject matter. Use the following scalesbelow:

1= strongly agree, 2= agree, 3= neural, 4= disagree, 5= strongly disagree.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Teaching method** | 1 |  2 |  3 |  4  | 5 |
|  (i)Question and answers |  |  |  |  |  |
| (ii) Brainstorming |  |  |  |  |  |
| (iii)Group discussion |  |  |  |  |  |
|  (iv) Presentation |  |  |  |  |  |
| (v)Lecture |  |  |  |  |  |
| (vi)Seminar |  |  |  |  |  |
| (Vii) Demonstration |  |  |  |  |  |

**C. OBJECTIVE THREE:** **To determine the extent to which teaching methods impact on students’ performance in public secondary schools**

 **Tick which you feel is appropriate.** Use the following scalesbelow:

1= strongly agree, 2= agree, 3= neural, 4= disagree, 5= strongly disagree.

7. Students taught using the following methods of teaching usually perform better in the exercises, tests or examinations

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  **Teaching method** | 1 |  2 |  3 |  4  | 5 |
| (i). Question & answers |  |  |  |  |  |
| (ii). Brainstorming |  |  |  |  |  |
| (iii)Group discussion |  |  |  |  |  |
| (iv). Presentation |  |  |  |  |  |
| (v). Lecture |  |  |  |  |  |
| (vi). Seminar |  |  |  |  |  |
| (vii).Demonstration |  |  |  |  |  |
|  (viii).using a combination of question & answers, group discussion, and demonstration  |  |  |  |  |  |

8. Please indicate any other comments on the effects of teaching methods on students school performance, write your comment below

………………………………………………………………..………………………

…………………………………………………………………………………………

Thank you for your time and assistance

Respondents

My name is Mwanahamisi R. Kitti; I am a student of Open University of Tanzania doing Masters Degree in Human Resource Management (see attached letter).

I am currently doing my research ***on effects of teaching methods on student performance*** in Nyamagana Secondary schools - Mwanza.

 It is for academic purpose only, your assistance in providing the information is kindly requested by completing the attached questionnaire. There is no wrong or right answer. I only need your opinion/ views on each question in the questionnaire about teaching methods.

Please be assured that the information that you provided in survey will be treated confidential.

Thank you for your assistance.

 Kitti, Mwanahamisi R.

MHRM,

 Cell/ mobile 0755312774

Appendix 4: Interview (for Inspectors Only)

1.Please tell me the story of your experience about the effect of teaching methods on students’ Performance in schools.

2. Which methods are commonly used in learning /teaching? Why/ how?

3. How do you link teaching methods with the performance of the students?

4. To what extent teaching methods impacts on students’ performance?

5. What are other factors that can influence student performance?

6. From your experience as school inspector which teaching methods do you recommend for use in secondary schools especially for science subjects? Why?

Thank you for your time and corporation.