

**THE EFFECT OF TEACHING METHODS ON THE
PERFORMANCE OF THE PUPILS IN SCIENCE
SUBJECT IN KITGUM DISTRICT
THE CASE OF LAGORO
SUB-COUNTY.**

BY

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DECLARATION

I here by declare that this research proposal is truly original work of my own, based on the real findings and that it has never been presented to any institution before for the award of any academic qualification

Researcher's Signature 

Date 19/10/2011

Name: Akena Maxmillan Olaa

APPROVAL

This research work has been under my supervision and is now ready for submission to the University Authority.

Supervisor

Mr. Odongo Mike

Signature


Date
19/10/2011

DEDICATION

This book is dedicated to my beloved:

Mr. Odongo Mike

Mr. Ocen David Aboda.

Mr. Lokoel Bosco Otto.

Mr. Bwonyo Bosco Acup.

ACKNOWLEDGEMENT:

I would like to express my special thanks to:-

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May God Bless You All!

ABSTRACT

This is a study about the effect of teaching methods on the performance of the pupils in science subjects.

A case study of Lagoro Sub-county in Kitgum district, the teaching methods in science to the pupils.

It was both qualitative and quantitative to give better ideas of the study. The sample size was small and the methods of sampling included purposive stratified and random sampling on how science was taught in primary schools. The study sought to establish the analysis on teaching methods in science.

The study was across sectional survey based on random sampling design which facilitated the achievement of the study objective that includes:

To examine how role play affect academic achievement of pupils in science.

To find out how group discussion affect performance of science pupils.

To assess the effect of demonstration method on the performance of pupils in science.

To examine the extent to which discovery method affects performance of science pupils in primary schools.

To assess the effects of expository methods on the academic achievement of science pupils in primary schools.

CHAPTER ONE:

1.0 Introduction:

This chapter shall look at the background of the study, problem statement, the purpose of the study, specific objective, research questions, scope of the study, significant of the study, limitation, definition of terms and conceptual frame works.

1.1 Background of the study:

Science and technology have become a yard stick for measuring the rate of economic development and advancement of the Countries. Scientific advancements are reflected in various aspects of their national cultures and practices, including political stability.

In trying to emulate the developed Countries of the world, developing nations including Uganda, have made vigorous attempts aimed at scientific and technological advancement. For instance, the objective of science education in Nigeria, as far back as 1947 education policy has been to introduce the child to the understanding of nature. In the era of regional government in Nigeria, science in terms of nature studies, agriculture and hygiene were emphasized. In the National Policy of Education, one of the cardinal goals of science includes the development of scientific literacy among the citizens.

Presently, primary science is one of the two subjects in primary system which is taught by specialist teachers. The other is the English language. Indeed, the Nigerian government places so much emphasis on inclusion of scientific literacy in the primary school pupils that teaching of primary science features prominently in the annual workshops organized for primary science teachers in Nigeria. Such case and attention by government justify the assertion by (Ahiakwo, 2005) that the solution to scientific and technological take-off of Nigeria must start from primary school since it is the foundation of our educational system on the whole. Nigerian government, be it military or civilian attaches much importance to science and technology in the modernization process. This is evidence in Government policy, for

instance, a special ministry of science and technology is erected. Moreover the federal government has yielded the ratio of

60:40 in favour of science for admission into all forms tertiary institution in Nigeria.

The National policy on Education, FRN, 2004 emphasized the importance of primary science by making one of the objectives of primary education to be the laying of a sound foundation for scientific and reflective thinking. The policy also speaks volumes on the appropriate use of instructional strategies in teaching and learning of primary science, which is meant to be practical, explanatory and experimental. Despite these efforts by government, pupils' achievement in primary science is not always commendable. Most often, the blame is leveled on the primary science teachers who are said to use wrong approach in teaching primary science particularly the expository method.

Achievement and better attitude towards science can only be achieved through a paradigm shift from tradition method to such an approach that would enhance the development of science process skills and scientific attitude.

Such approach is the constructivist strategy. The strategy, according to Agulana and Nwachu-Kwu (2004), focuses on meaning-making and knowledge construction and not mere memorization. In this approach, the learner learns by personally and uniquely developing an understanding and making sense of information. The constructivist strategy is considered a veritable tool for shifting science teaching from traditional chalk and talk method, which is teacher centered, to the hand on method, which is learner centered. The constructivist strategy focuses on problem solving, constructing and reconstructing ideas and methods.

The constructivist strategy fits into the model called "experiential designs" (Etuk and Afangide, 2008). The instructional strategies subsumed under this model involve the learners as active participants in the learning process. Attention is shifted from the subject matter content to the method used in imparting the knowledge.

Cognitive skills are expectedly acquired in the course of interactions. The learning skills so acquired would remain life-long while the specific intellectual skills are likely to be forgotten with time (Bigge, 1971).

Advantage of the constructivist instructional strategies include enhancement of Childs natural curiosity, development of creative and manual skills, utilization of the child's environment for teaching and learning and holistic development of the child. These provide basic tools for educational advancement of the child for useful living in the society, within the limits of an individual's capacity.

Most works done on the use of constructivist strategy was at the secondary school level. Hence, this study investigated the constructivist strategy and pupils' achievement in primary school science and attitude towards science.

1.2 Problem statement:

Poor teaching methods by primary teachers have resulted to poor performance and negative attitudes towards science in the later school lives.

They teach science without the necessary facilities, often times with chalk and talk method. When such kind of teaching happens, pupils would be deprived of possible successful science and technology experts.

The solutions offered for the above problem was that the teaching of science must lay much emphasis on development of science process skills, information search and learning how to learn.

Despite the solutions given, the problems still persist that is why a researcher has decided to investigate the effect of teaching methods on the performance of pupils in science subjects in primary schools in Kitgum district.

1.3 General objective:

The purpose of this study is to assess the effect of teaching methods on the performance of pupils in science subjects in Kitgum district..

1.4 Specific objectives:

1.4.1 To examine how role play affect academic performance of pupils in science in Kitgum district.

1.4.2 To find out how group discussion affect performance of science pupils in Kitgum district.

1.4.3 To access the effect of demonstration method on performance of science pupils in Kitgum district.

1.4.4 To examine the extent to which discovery method affect performance of science pupils in Kitgum district.

1.5 Research questions:

1.5.1 To what extent does role play affect academic performance of pupils in science in Kitgum district?

1.5.2 To what extent does group discussion affect performance of science pupils in Kitgum district?

1.5.3 What is the effect of demonstration method on the performance of science pupils in Kitgum district?

1.5.4 To what extent does discovery method affect performance of science pupils in Kitgum district?

1.6 The scope of the study:

This has three things involved:

a) Geographical scope:

The study shall be conducted in Lagoro Sub-county in Kitgum district allocated in Northern part of Uganda and composed of 10 Sub-counties namely Kitgum Town Council, Amida, Akwang, Layamo, Kitgum Matidi, Lagoro, Mucwini, Omiya Anyima, Namokora and Orom. For the purpose of study, Lagoro Sub-county shall be reached.

b) Time scope:

The study shall cover the period of 3-5 years. This period is chosen because it is the time when the pupils are in schools for their study.

c) Content scope:

The study shall specifically focus on the teaching methods and how they affect the performance of pupils in science subjects in Lagoro Sub-county in Kitgum district.

1.7 Significance of the study:

The study shall help government in assessment or evaluation of Educational Programmes pertaining the teaching of science subjects.

The findings of the study shall help the policy makers to come out with appropriate policies on education regarding promotion of science and technology. The findings shall be used for future references by all the stakeholders of education.

The study shall reveal to the local community (parents) reasons why science is done poorly at the later school lives (secondary schools and above).

The study shall also help the School Management Committee (SMC) to assess the academic performance of pupils in science subjects.

1.8 Limitation of study:

1.8.1 The money budgeted for the research project is not enough but this problem has been solved using strick budgeting.

1.8.2 The time given for writing research proposal is inadequate and this problem shall be addressed by drawing work plan and the work plan shall be strickly followed.

1.9 Operational definition of terms:

Methods:

These are the ways in which the information is transmitted to the learner and how the leaner uses it and give feedback. It involves use of teaching techniques, skills, subject matter and teaching aids.

The teacher:

This is a person who consciously and deliberately instructs the pupils to allow learning. A good teacher should have a good understanding of what his pupils need to learn and also their capabilities for learning.

Teacher centered methods:

Here, the teacher is mostly telling and the learner passively listens or writes notes, for instance, lecture method.

Learner centered methods (constructivist)

Here, the teacher just helps the learner to find out by posing questions, guiding, sharing ideas and problems. The learner plays a role in the teaching-learning process. For instance, project method, role play discovery, brain storming, discussion group work, programmed instruction, story telling etc.

Demonstration method:

This involves presenting material visually. It is usually referred to as show out techniques. It combines telling, showing and doing for the benefit of the audience. It helps the pupils to learn by seeing.

Content:

The content of the curriculum is the subject matter. It is divided into three domains namely, Cognitive, effective and psychomotor domains.

1.10 Conceptual frame works:

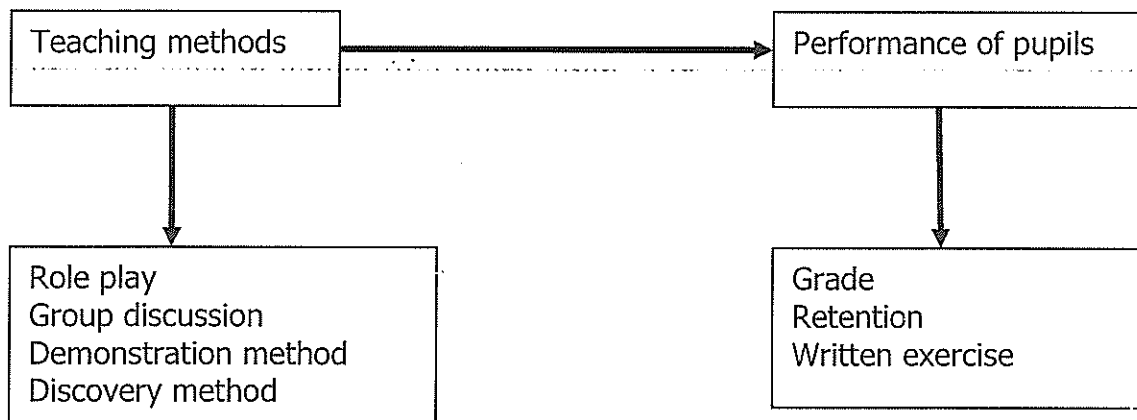
Conceptual frame work showing relationship between independent and dependent variables.

Independent

Dependent

Variable

variable



The teaching methods are the independent variable and performance of pupils is the dependent variable. Therefore, teaching methods are the ones causing effects on the performance of the pupils in term of:- grade after sitting for examinations, retention of pupils in school and doing written exercise when a lesson has been conducted.

There are so many methods used for teaching science, but the researcher shall base his study on the four methods mentioned above.

CHAPTER TWO:

LITERATURE REVIEW

2.0 Introduction:

This chapter shall talk about theoretical review and actual review of related literature objective by objective.

2.1 Theoretical review:

Theories of learning attempt to explain the mechanism of behavior involved in the learning process. Experts have formed different theories of learning with the result that it is not possible to give a theory which satisfies all interested person. Therefore the most acceptable definition of a theory is that of Melvin .H. Marx (1970) defined a theory as “a provisional explanatory proposition”.

Melrin .H. Marx (1970) said that theories provide detailed systematized information of an area of knowledge. It serves as a guideline to conduct further research in the area.

Thorndike and Woodworth (1901) talked of theory of “identical Element or components” that the transfer of learning occurs from one situation to another on account of the presence of identical twins. The theory implies that learning is facilitated in the new situation to the extent that identical elements which occurred in an earlier situation are present in the new situation. The similarity of elements can be either in the subject matter or in procedure or in attitudes.

Peter Sandiford (1941) stated that the theory of identical elements is perfectly reasonable one. Out of the millions of specific reactions, each with its specific connection in the nervous system, some of them are bound to be common to several situations, the greater the number of these common elements, the greater will be the transfer effect.

C.H. Judd (1908) came out with the theory of Generalization of Experience that transfer of learning takes place to the extent to which a learner is able to generalize his/her experiences.

He lays emphasis on the intelligence of the learner which enables him/her to understand and apply knowledge of principles or generalization from one situation to another.

This theory states, "the development of special skills, the mastery of specific facts, the achieving of particular habits or attitudes in one situation have little transfer unless the skills, facts, habits are systematized and related to other situations in which they can be utilized.

If we are trying to build good habits of study and work, it should be done in such a way that these are applicable in all subjects and not merely to one subject.

2.2 Actual review of literature:

The account of what has been published on my research topic by various authorities or notable scholars and researchers, in this case therefore, as per the effect of teaching methods on the performance of pupils in science subjects include the following:

2.2.1 Role play and performance of pupils:

According to Alison Lloyd Williams (2009). Global Link Forum Theatre Project Coordinator, role play is one of the relevant methods of teaching science that makes use of plays performed by the learners to highlight interesting points that are to be learned.

Alison worked in one school or cluster of schools per term, using role play, leading weekly workshop sessions over a period of eight weeks. At the end of that eight weeks periods, he realized the following achievements:- improved performance and communication skills, leading to developments in pupils confidence and self-esteem, the learners have developed their drama skills and some have overcome self-consciousness, pupils have developed acting skills, problem solving skills, and working with other staffs, the method was new and exciting and pupils learn in an active way.

According to workshop held in Kitgum Core Primary Teachers' College (2006), role play is engaging learners' voice in active roles for the purpose of learning. Learners

participate in areal activity for the purpose of meeting learning objectives. Role play is one of the tools for learning in experiential learning.

It was discussed in that workshop and found that role play have the following achievements to the pupils:- it stimulates and holds interest of the learners, it is more realistic since it touches the realities of life, it develops the learners' imagination and creative talents, the learners tend to remember better what they have acted than heard or seen, it promotes a friendly spirit and team work among the learners, it deepens on the understanding of the content and lastly role play leads to development of various skills.

Role play developed by Jean Pol Martin (1926) says that students take the teachers role and teach their peers. This method is very effective when done correctly by having students teach sections of the class as a group or as individuals is a great way to get the students to really study out the topic and understand it so as to teach it to their peers. And by having them participate in the teaching process, it also builds self-confidence, self-efficacy and strengthens students speaking and communication skills. Students will not only learn their given topic, but also gain experience that could be very valuable for life.

According to the training of Nursery teachers organized by Kampala Business Education and Research Institute at Kitgum Branch (2007), it was found that usually when teachers talk about role play, they consider it to be when children, take up certain roles of people in a community and act like those people do. The children can be seen doing this in most of their play time again and again. The teacher should identify several roles and plan adequately. The teacher should also prepare the costume and other required equipment.

During role play, the teacher's main duty is to encourage children to talk and act, that is those who are shy, timid and those who are not interested must all be encouraged by the teacher.

It is so effective in teaching all subjects because children learn best by acting and playing.

Shaftel .F, Shaft .G (1982) said that children have always learned from mimicking or duplicating the actions of others, including their parents and peers.

Therefore role playing is simply a continuation of the learning already done by the learners. And by using this method learning would become easier.

Participation in role play allows students make decisions, and through the feedback he or she receives, he/she sees the results of his/her actions, and can therefore learn how to adjust his words and actions to produce more likeable results (Van Ments .M. 1983).

Role play encourages the use of critical thinking because it involves analyzing and problem solving; therefore role play is cognitive learning method (Biddle Bruce J, 1979).

2.2.2 Group discussion and Performance of pupils.

According to Lecture notes given by Mr. Angoli Dickens (2011), discussion method can be defined as an orderly procedure of oral exchange of ideas between the teacher and the learners in a small or large groups or a whole class and among the learner themselves. The discussion can take the form of a debate, a symposium, a panel discussion or brain storming, workshop, seminar, forum, interview and others.

He identified the following as the achievements of this method:- it is suitable for both lower and upper primary because it enables learners to share view and interest, learners are able to discuss what they did not know, it increases the thinking skills, it is both teacher and child centered method therefore it gives knowledge around trip, the teacher will be able to discover bright learners through discussions.

Group discussion method is a method of teaching where tasks assigned to particular groups or the big class is divided into small groups for easy handling (M. Ferguson, Sept 2008). And by so using this method, individual differences are catered for and leadership skills developed in the learners.

In Nigeria, the work of Nworgu Ochilangua (2001) and Awodeyi (2005) all emphasized the effectiveness of discussion method in academic achievement and development of positive attitude towards the study of science in secondary schools.

Holloway also researched on discussion strategy and noted its effectiveness in academic performance in chemistry in Washington.

Brooks and Brooks (1993) identified the effectiveness of group discussion strategy in teaching science concepts in the United State of America (USA).

2.2.3 Demonstration Method and Performance of Pupils:

According to lecture note series, module 8 from KIU, page 26, demonstration method is referred to as show out technique. It combines telling, showing and doing for the benefit of the learners. It helps the pupils to learn by seeing. The teacher has to arrange the necessary materials in advance, prepare the learning environment before actual demonstration.

Demonstrations are useful because they provide concrete reference for objects or event. Learners relate terms and concepts to those events, which they observed.

Trotter, (2003) said that demonstration method has been used extensively in sciences and to lesser extent in engineering. For instant, Lee (2004) carried out a study on students' performance in science using a demonstration method. In his study, he reported that students were able to identify some difficulties they faced in learning science when they were given problem to solve.

Wilson (2004) investigated the effect of two teaching methods on students' cognitive achievement and problem solving skills in biology. He showed that the treatment groups performed significantly better than the control group. Demonstration method have no substitute for laboratory exercise or for learning proper techniques of handling laboratory, but are effective means of supplementing and clarifying the material being taught.

According to workshop organized by NRC in collaboration with the office of District Education Officer, Kitgum district (2005) it was discussed and found out that demonstration is applied to provide an opportunity to learn new exploration and visual learning tasks from a different perspective. A teacher may use experiment to

demonstrate ideas in a science class or may be used in the circumstance of providing conclusively a fact, as by reasoning or showing evidence.

From the perspective of promoting standard based science education, demonstration method plays important role in learning ideas and skills if standard based education is to become a reality in the nation classroom (Tyson, 1997).

According to Phillips (1984) a demonstration method can be programmed to present the needed skills to be learned in the programmed format. Demonstration method has the ability to contribute to learning tasks in different areas. The programmed format involves a sequence of presentation, written example to be undertaken by students, step by step.

2.2.4 Discovery method and performance of the pupils:

According to National Science Education Standard, Washington D.C (1987), discovery method is a dynamic teaching method that engages students in “mind-on” as well as “hand on” students actively generate question, collect data, evaluate and synthesize data and draw conclusions basing on evidence.

This can be achieve by facilitating the process by posing questions, managing the learning environment, assessing progress, helping students make sense of what they have learned and providing opportunities for them to investigate, collaborate and explore.

Flick .L. (1998) said that discovery method is “central to science learning” and “rest on the premise that science is an active process” students engaged in scientific inquiry are propelled along, making their own discoveries and fueling the desire to learn.

Rowe, M.B. (1973) explained why use discovery method in science teaching that because it takes children to new levels of awareness and involvement in science. As student centered activity, discovery method gives children ownership of the learning process and inspires them to become more independent learners.

As students engage in critical thinking and problem solving, questioning, probing and discovering answers. They gain amore meaningful and longer lasting understanding of scientific processes. By questioning and designing systems for

gaining knowledge, students become more resourceful, developing self-reliance and a greater understanding of life-long learning process.

The discovery method is a teaching technique that encourage students to take a more active role in their, learning process by answering a series of questions or solving problems designed to introduce a general concept (Mayer 2003).

Jellenstien (2004) said that discovery method is based on the notion that learning takes place through classification and scheme formation. Three main principles guided Bruner's development of this approach.

Consideration should be given to "experiences and contexts" that motivate the student's interests, there should be a spiral organization of the material forcing students to build upon previously acquired information, the instruction should facilitate "extra-population" constructivist theory.

In this teaching method, the instructor guides the students through the process by posing a series of question whose responses would lead to understanding of a concept before it is explicitly stated.

Pure discovery methods often requires excessive amount of learning time, resulting in low level of initial learning, and result in inferior performance on the transfer and long term retention (Mayer 68).

Guided discovery may require more or less time than the pure instruction, depending on the task, but tends to result in better long term retention and transfer (Mayer 68). Guided discovery both encourages learners to search for how to apply rules and makes sure that the learner comes into contact with the rule to be learned (Mayer 68).

Jerome Bruner (1960s) argues that "practice in discovery for one self teaches one to acquire information in away that makes that information more readily viable in problem solving. Discovery learning takes place in problem solving situation where the learner draws on his own experience and prior knowledge. It is the learning method of instruction through which students interacts with their environment by

exploring and manipulating objects, wrestling with questions and controversies or performing experiments.

According to lecture notes series module 8 from KIU, page 40, discovery method is a teaching technique that includes in class teacher guide activity, teacher guide problem solving, project assignment survey, research visits, interviews, observation, experiments, inductive evaluation and references. Discovery method has the following advantages in teaching science it is child centered method, therefore provides a wide scope for learners' participation, it makes the learners more inquisitive or practical, thus the children learn to be responsible and realistic.

CHAPTER THREE

METHODOLOGY:

3.0 Introduction:

This chapter consists of research design and population of the study.

3.1 Research Design:

There are several research designs that can be adopted to make a research. As far as my study is concerned, across sectional study or method was used.

This type of research design has been adopted because it gives the sample population and related information concerning the whole population.

3.2 Population of the Study:

The population of study shall include the following categories of respondents: Teachers, Pupils, Parents, Headteachers and Local leaders.

Table one showing selection of respondents:

Key Informant	Number
Teachers	76
Headteachers	11
Pupils	250
Parents	85
Local leaders	25
Total	477

The above table shall tell the area of study and the population of study in Lagoro Sub-county.

3.3 Sample Method:

The sample method has been determined using R.V. Krejcie and D.W. Morgan (1970), ways of determining sample size for research activities as shown below.

Table Two showing the sampling selection meth.

Respondent	Total	Sample Size
Teachers	76	63
Headteachers	11	10
Pupils	250	152
Parents	85	70
Local Leaders	25	24

Table above shall show the respondent of study, their total number and the sample taken.

Table three showing sampling methods:

Respondent	Sample Size	Method
Teachers	63	Purposive sampling
Headteachers	10	Stratified sampling
Pupils	152	Simple random sampling
Parents	70	Simple random sampling
Local Leaders	24	Stratified sampling

The table above shows the method which shall be used for sampling the respondents.

3.4 Data Collection Methods:

Data collection method shall include interview, questionnaires and observations

3.4.1 Interview:

The use of interview shall be employed to collect data from the key informants because there are certain categories which do not have time to fill the questionnaires. According to (Mugenda and Mugenda, 1995), interview help to gather detailed information for a researcher.

3.4.2 Questionnaires:

Questionnaires were considered to be used because they provide a large cover of sample of respondents and allow a reasonable degree of generalization of the findings. All the two types of questionnaires shall be used, i.e. close and open ended questionnaires.

When using open ended questionnaires, the respondents feel free and afford them the opportunity to provide in-depth information while on the other hand, closed ended questionnaires shall provide short responses.

3.4.3 Observation:

Observation shall be used to collect data from observable areas. That is a researcher would see physically and verify the existing items in the schools.

3.5 Data Collection Instruments:

3.5.1 Questionnaire:

Is a tool for securing questions and answers by using a form which the respondents fill themselves? For this study, semi and structured questionnaire shall be designed and employed to collect data from teachers, pupils, parents, and local leaders.

3.5.2 Observation/Check list:

Here, the researcher shall draft a list of items which he intends to observe in the schools. This includes teaching methods, learning aids etc. and it needs the understanding of a researcher to select what to record and it does not need biasness.

3.5.2 Interview guide:

This is a device which a researcher shall use as a guide for his interview. It helps him to gather information from the key respondents. The key respondents shall include headteachers, District Inspectors of School (DIS) and local leaders.

3.6 Procedures of data Collection:

After the submission of final copy of research proposal to the supervisor, letter of introduction from Kampala International University (KIU) shall be issued. The letter will then be submitted to Chief Administrative Officer (CAO) and where need be another letter shall be given to the researcher introducing him to the schools where data shall be collected from.

3.7 Data Analysis Method:

Data shall first be presented in statistical forms which includes tables, graph and pie chart and thereafter analysis shall be done accordingly.

3.8 Data reliability and validity:

The researcher shall do pretesting in the parish of Lakwor at Lakwor Primary school. This shall be done in order to determine the reliability and consistency of inference.

3.9 Ethical Consideration:

3.9.1 The researcher shall keep the ethical issues and respect the views of the respondents as far as confidentially and anonymity are concerned.

3.9.2 **Anonymity:** The researcher shall make sure that any behaviour which would bring humiliation and tension among the respondents will be prevented.

CHAPTER FOUR

DATA PRESENTATION, DATA ANALYSIS AND DISCUSSION

4.0 Introduction:

This chapter deals with data presentation and data analysis.

The data were presented, analyzed and quantified into percentage.

A total of 319 questionnaires were given out but 250 were returned leaving out 69 of them.

4.1 Data presentation and analysis:

Table I: shows the level of science teaching achievement when role play is employed.

Values	No of respondents	Percentage
Effective	216	86
Non effective	34	14
Total	250	100

Source; Primary

The table shows that role play as a method of teaching has a lot of impacts which is represented by 86% as compared to those who do not agree and represented by 14%.

Table II: Shows the level of science teaching achievement when discussion as a teaching method is employed.

Values	No of respondents	Percentage
Effective	235	94%
Non effective	15	6%
Total	250	100

Source; Primary

According to the table 94% representation shows that when teachers employ discussion in teaching science the concept is achieved while those who do not agree are very few who are represented by only 6%

Table III: showing the level of science teaching achievement when demonstration is employed.

Values	No of respondents	Percentage
Effective	240	96
Non effective	10	4
Total	250	100

Source; Primary

The table shows that the use demonstration as a teaching method is effective who were represented by 96% as compared to those who do not agree and were represented by 4%.

Table IV: Showing the level of science teaching achievement when discovery methods is employed.

Values	No of respondents	Percentage
Effective	230	92
Non effective	20	8
Total	250	100

Source; Primary.

According to the table, the use of discovery as a method of teaching science shows high level of achievement who were represented by 92% while those who do not agree have a low representation of only 8%.

Table V: shows the level of science teaching achievement when expository methods is employed.

Values	No of respondents	Percentage
Effective	50	20
Non effective	200	80
Total	250	100

The table shows that, the use of expository methods in the teaching of science is not effective as was represented by 80% as compared to those who think was effective with the representation of only 20%:

4.2 Discussion:

Role play.

Role play is one of the most important methods to enhance teaching of science as the study has revealed.

This was also inline with what Alison L. (2009) writes about. He says role play when used in teaching science has the following achievements improved performance and communication skills, leading to developments in pupils confidence and self-esteem, the learners have developed their own drama skills and some have overcome self-consciousness, pupils have developed acting skills, problem solving skills and working with others which also promotes team spirit and high level of cooperation.

Jean P.M. (1926) also consents that role play is very effective when done correctly by having students teach section of the class as a group or as individuals in this the students take the teacher's role and teach their peers Jean P.M also urges that role pay stimulates and holds interest of the learners, it is more realistic since it touches the realities of life, it develops the learners imaginations and creative talents, the learners tend to remember better what they have acted than what they have heard or seen.

Discussion Method:

It has been noted that discussion plays a great role in promoting science teaching. According Angoli D. (Lecture note 2011), discussion method can be defined as an orderly procedure of oral exchange of ideas between the teacher and the learners, in a small group, or a large group or a whole class, or amongst the learners themselves.

The findings conform to what Ferguson M. (2008) writes about. He says discussion is suitable for both lower and upper primary because it enables learners to share views and interest, learners are able to discuss what they did not know, it increases the thinking skills, it is both teacher and child centred method and therefore gives knowledge around trip. When using discussion method, individual difference are catered for and leadership skills are also developed in the learners.

Nworgu O. (2011) and Awodeyi (2005) all emphasized the effectiveness of discussion method in academic achievement of positive attitudes towards the study of science.

Demonstration:

The study found out that, demonstration is also an important method in the teaching of science in primary schools. Demonstration is referred to as show out technique, it combines telling, showing and doing for the benefit of the learners. Demonstration method has been found effective as it helps the learners to learn by seeing. This provides concrete references for objects or events as learners relate the terms and concepts to those events observed.

The findings is inline with what Tretler, (2003) writes about. According to him, demonstration provides learners with cognitive achievement and problem solving skills. He notices that the treatment groups perform significantly better than the control group. Demonstration method have no substitute for laboratory exercise or for learning proper techniques of handling laboratory equipment, but are effective means of supplementing and clarifying the material being taught. Demonstration method promotes standard based science education which makes learning a reality.

Demonstration is also applied to provide as opportunity to learn new exploration and visual learning tasks from different perspective.

Discovery Method

This is even one of the most vibrant methods in the effective teaching of science in primary schools. This method helps students make sense of what they have learnt and providing opportunities for them to investigate collaborate and explore.

Discovery method according to National science Education Standards, Washington DC (1987), is a dynamic teaching method that engages students in "Mind on" as well as "hand on" activities. Function as scientist students actively general questions, collect data, evaluate and synthesize data and draw conclusion basing on the evidence when employing a discovery method, the teacher act like an instructor to guide the students through process by posing a series of questions whose responses would lead to understanding of a concept before it is explicitly stated.

The finding of the study conforms to what Flick L. (1998) states that discovery method is “central to science learning and rests on the premise that science is an active process, student engage in scientific inquiry are propelled along, making their own discoveries and fueling the desire to learn

Rowe M.B (1973) also consents that discovery is an method of effective teaching of science in primary schools. According to him, involvement in science. As students centred activities, learning process and inspires them to become more independent learners as students engage in critical thinking and problem solving, questioning, probing, and discovering answers. They gain a more meaningful and long lasting understanding of scientific processes. When students question and design systems for gaining knowledge, they become more resourceful, developing self reliance and a greater understanding of life long learning process.

Jerome B. (1960) agrees that “practice in discovery for one self teacher on to acquire information in a way that makes that information more readily viable in problem solving situation where the learner draws on his or her own experience and prior knowledge.

Expository teaching method.

The investigation revealed that expository method of teaching science does not have effective facilitation of science learning. When expository method of teaching science is employed, it is the same as learning is not taking place effectively.

According to Kumar J.K. (2000) expository is the most commonly used method of teaching science. This method is most commonly followed in school with big population. The method is not quite suitable to realize the real aim of teaching science.

In expository method only the teacher talks and pupils are passive listener and since the pupils do not actively participate in this teaching method, a teacher controls every things so this method is a teacher control and information centred and in this method teacher work as a sole resource in classroom instruction. Due to lack of participation, pupils get bored and some of them some times go to sleep.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS!

5.0 Introduction:

This chapter consists of the summary, conclusion and recommendations.

5.1 Summary

The study is about the effects of teaching methods on academic achievements of the pupils in science subjects in Kitgum District, the case of Lagoro Sub County.

Teaching methods are the determining factors for measuring academic performance of the learners in the schools.

Poor teaching methods by primary school teachers has resulted to poor academic achievement and negative attitude towards science in the later

School lives (from secondary level to University level).

Therefore, the main purpose of this study was to assess the effects of teaching methods on the academic achievement of science pupils in Kitgum district.

The study employed both qualitative and quantitative analysis to give better ideas of the findings.

The sample size was small and the method of sampling included purposive, stratified and simple random sampling on how science is taught in primary schools.

The study was a cross sectional survey based on random sampling design.

The method of data collection used were interview, questionnaires and observation.

Questionnaires were used for the teachers when interview and observation were used for the key respondents such as pupils, parents, local leaders, head teachers, DIS etc.

5.2 Conclusion:

This study investigated the effects of teaching methods on pupils' achievement in and attitude towards primary science using two main instructional strategies, the teacher centered methods (expository strategy) and the child centered methods (constructivist strategies). The constructivist strategy is not a single method but a collection instructional strategy which make for experiential learning by pupils.

The strategies used in this study were Role Play, discussion, demonstration and discovery methods over the teacher centered methods (expository strategy).

5.3 Recommendations:

Basing on the findings, the researcher wishes to make the following recommendations. (1) The child centered methods (constructivist construction strategy) should be emphasized in teacher education curriculum at all levels to enable teachers have good background of the strategy. (2) Text books authors should expose the readers more to the use of the child centered methods by writing about it in their books. (3) Teachers should as much as possible use the child centered methods in teaching topics in primary science. (4) Employees of teachers should organize seminars, workshops and conferences at periodic intervals for primary science teachers on the use of child centered methods (constructivist strategy) in teaching primary science. (5) Government should make teaching in the rural areas more attractive by providing special incentives for teachers in rural schools. (6) Primary school teachers should work hand in hand with the Headteachers' Association of all districts in the Country to establish science clubs in order to nourish pupils' interest and attitudes towards science.

Questionnaire for teachers:

Dear sir/madam,

You have been selected to provide information on this research study titled “teaching methods and performance of pupils in science subject” in primary schools in Lagoro Sub-county, Kitgum district.

The information generated will be handled with utmost confidentiality.

Thank you.

Answer the questions by either filling in the bank spaces with correct information or by ticking the correct options as the case may be.

1. (a) School name
- (b) School grade
- (c) Sex: Male Female

2. (a) What are some of the teaching methods commonly used in teaching science in your school?
-
-
- (b) How does role play as a method of teaching affect the performance of pupils in science subject?
-
-
-
- (c) State how you can improve performance of pupils in science using role play?
-
-

3. (a) How does group discussion affect the performance of pupils in science subjects?
-
-
-
-
-

(b) In which ways does groups discussion help to improve performance of pupils in science?

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4. (a) In your view, how does demonstration method affect the performance of pupils in science?

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.....

(b) Explain how demonstration method help to improve performance of pupils in science?

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.....

5. (a) How does discovery method affect the performance of pupils in science subjects?.....

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.....
.....

(b) Point out how discovery method helps to improve performance of pupils in science?

.....
.....
.....

6. (a) Do your pupils participate in teaching – learning process?

Yes

No

(b) If yes, what is the effect of their participation in a lesson?

.....
.....

(c) Name the methods of teaching which allows pupils to participate in the learning process.

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.....

7. Suggest what should be done to poor performance of pupils in science subjects due to wrong choices of teaching methods.

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8. Name the factors to be considered when choosing teaching methods.

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.....

9. What is the response of the DIS/ESA on poor performance of pupils in science?

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.....

Interview guide:

1. In your own view, how does role play as a method of teaching affect the performance of pupils in science?
2. Mention how the school is solving the problem of poor performance in science due to wrong choices of teaching methods.
3. How does group discussion affect the performance of pupils in science subjects?
4. State how group discussion can help to improve performance of pupils in science.
5. How does demonstration method help to improve performance of pupils in science?
6. Point out how discovery methods affect the performance of pupils in science?
7. Why do you think teaching methods affect the performance of pupils in science subjects?

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Appendix B:

Budget for proposal writing:

Particular	Amount
Stationeries	40,000=
Surfing from internet	57,000=
Printing	30,000=
Photocopying Services	20,000=
Binding	3,000=
Research assistance	100,000=
Travel	60,000=
Emergency	50,000=
Total	360,000=

Time frame for carrying out research work

Activity	Jan 2011	Feb 2011	Mar 2011	April 2011	May 2011	June 2011	July 2011	Aug. 2011	Sept. 2011	Oct. 2011	Nov 2011	Dec. 2011
Identifying topic												
Writing proposal												
First draft proposal												
Final draft												
Writing dissertation												
Presentation												