

CHAPTER ONE

INTRODUCTION

Background to the study

Using appropriate Teaching and Learning materials do help improve upon pupils interest in integrated Science lessons involves activities which aim at arriving at facts and specific experiences. To develop intellectual skills in solving specific problems in Integrated Science, desirable attitudes and interest have to be inculcated into the students' scheme of work. The research work does not entail just the acquisition of cognitive skills, but also develops the affective and psychomotor skills in experimental lesson.

The teacher gives mental training for students to reason and judge effectively so as to solve integrated science problems throughout the study of mathematics and environmental studies. With psychomotor skill development, the teacher trains the limbs, muscles and the five senses for manipulative skills involving experimental lessons, activities work and demonstration. For affective skills development, the teacher develops interest and shows concern for pupils work. He stimulates others to help develop interest in the subject integrated Science.

She is to give guidance and to seek the welfare of pupils under her form of physical needs, moral character, biological and psychological needs.

Discovery has shown that pupils learn better when they work with their hands. It is therefore the responsibility of the science teacher to demonstrate lesson and learning experience to pupils, since helps learners to be good observers as well as does. In order to use appropriate

TLM's to help improve upon pupils' interest in integrated science lesson these are certain areas the researcher needs do take into consideration. These include sites for organizing integrated science lessons such as laboratories, appropriate TLMs for teaching and the concept of pedagogy and andragogy in the teaching of integrated science.

Then also, techniques for introducing the integrated science lesson must be considered. During the three years teaching at Akim Kwabeng Anglican primary School the researcher observed that pupils attitude towards integrated science was not tae get, some pupils believed that integrated science is difficult to learn. Most introductory science courses at the lower primary level even among those, science course specifically designed for non-scientist is that they rarely integrate physics, chemistry, Biology and Agriculture. Others also give the impression that science is a boring subject.

Most pupils complained about a lot of difficult calculation and terms which makes the subject not attractive to them. Others believed that Agriculture which is a branch of integrated science was limited to farming as most of people in the community were subsistence farmers who grow crops to feed themselves and their families. The teaching of integrated science in Akim Kwabeng Anglican primary School faces a lot of challenges which hinder the achievements of progress in science education. These include inadequate supply of teaching learning materials, laboratory and other integrated science equipment. Most pupils poor attitude towards integrated science lesson may be due do the fact that pupils see any real differences between the skills and practices which are being taught at schools and their homes. Another factor is the absence of science club for pupils.

This situation deprives pupils of rich avenues to interact and learn integrated science from each other and develop desirable and useful attitudes.

Owing to those factors, the primary four pupils at Akim Kwabeng Anglican Primary School showed the interest in integrated science lessons. An informal survey conducted by the researcher researched that one – third of the pupils in the upper – primary representing 35% responded positively to study the science subject and two – third 62.7% responded negatively about the subject. It is of this views that the researcher took upon herself to clarify all these misconceptions in order to enable pupils to develop interest and favorable attitudes so as participate fully in integrated science lesson.

Science offers reliable knowledge that we can use as a base to cure discuses, communicate across the world, make our homes comfortable, produce more and better crops and develop scientific altitude towards life. As the country moves towards more scientific and technological areas, it is important to train more pupils in the fields of science and technology since they depends. Many technological advances involves the application of new scientific principles in the field of biotechnology, where increase in food production, improvement of medical skills, better instruments and many more are evident. With population increase over anticipated in the coming years, there is the need to build a strong scientific background to produce more scientific and technological materials to meet the demands of the country. The knowledge acquired in science is often applied to other branches of science.

Statement of the problem

The researcher observed that the pupils in her class lacked interest in the science subject.

Purpose and objectives

The purpose and the objectives of the study is to determine the causes of pupils lack of interest in the integrated science lessons and use appropriate teaching and learning materials to help remedy the situation.

Problem Diagnosis

1. What are the causes of pupils lack of interest in integrated Science lessons?
2. What are the effects of use of teaching learning materials in the teaching process?
3. What are the appropriate teaching and learning materials that can help arouse and system pupils' interest in integrated science lessons?

Significance of the study

This research work is to help teachers solve the problem of lack of interest in science when they are confronted with it in the teaching and learning process. Secondly, this research will help policy formulas to lay down policies that will make appropriate TLM's available in schools for teachers do use to enhance comprehension and arousal of pupils interest. Moreover, this study can serve as a guide to researchers and be used as a reference material for further studies for tae appropriate methods of teaching science.

Delimitation

The scope of the study has been confined to the primary 4 pupils at Akim Kwabeng Anglican Primary School, although the problem is present in almost every school within the Atiwa District. This is due to time factor; secondly, the researcher could not cover the use of appropriate methods to improve upon pupils interest in science lessons due to limited time and financial constraint.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Introduction

In this chapter a theoretical review of the related literature and empirical data are presented.

This chapter expresses the following.

1. Concept of science.
2. The causes of pupils lack of interest in science lessons
3. The effect of TLM's in the teaching and learning process.
4. The appropriate TLM's that can help arouse the interest of pupils in science lesson.

Theoretical and empirical review

The concept of science

Gotfrieb (2001) defines science as an intellectual activity carried on by humans that is designed to discover information about the natural world in which humans live and to discover the ways in which this information can be organized into meaningful patterns. A

primary aim of science is to collect facts (data). An ultimate purpose of science is to discern the order that various facts.

Dott (2003) explains that science involves more than the gaining of knowledge. It is the systematic and organized inquiry into the natural world and its phenomena. Science is about gaining a deeper and often useful understanding of the world. Vanderbilt (2000) states that science consists simple of the formulation and the formulation and testing of hypothesis based on observational evidence, experiments are important where applicable, but their function is merrily to simplify observation by imposing controlled conditions. Encarta (2009) states that the word science is derived from the Latin word “Sire” meaning “to know” Science is the systematic study of anything that can be examined, tested and verified. From its early beginnings, science has developed and most influential fields of human endeavor. The word science also comes from a Latin Word “Scientia” meaning “knowledge” Science is an enterprise that builds and organizes knowledge in the testable explanations and prediction about the world.

Parkin, (1991) defines science as the systematic observation of natural events and conditions in order to discover facts about them and to formulate laws and principles based on these facts. The organized body of knowledge that is, derived from such observations and that can be verified or tested by further investigations. Any specific branch of this general body of knowledge such as Biology, Physics, Geology or Chemistry.

Aristotle (1978) also defined science as a scientific knowledge that can be logically and rationally explained. It can also be termed as a classical antiquity as a type of knowledge

which was closely linked to philosophy. Science became a distinct enterprise of defining “laws of nature” based on early examples such as Kepler’s laws, Galileo’s laws and Newton’s law of motion. Over the course of the 19th century the word science became increasingly associated with the disciplined study of the natural world including Physics, Chemistry, Geology, Biology, etc.

Science can be defined as the acquisition of knowledge through collection of data, experimentation, analysis and drawing of conclusions. The continuous process of investigation and experimentation in order to widen people’s scope of understanding of the natural world involves the gathering and recording of knowledge to find answers to questions and challenges that humans pose everyday. Wikipedia.com (2011) continues that, there are many methods of collecting information and forming ideas, but methods used by scientists must be systematic and reliable. These methods are often referred to as the scientific skills and methods. Men and women can achieve great things: the increase of food production, improvement of medical skills, provision of better shelter, instruments and many more.

The work of scientists is far-reaching in every aspect of life. The Moe (2007) Integrated Science syllabus states that technology can be described as all the knowledge and scientific skills available to society being applied to improve life and to satisfy the needs of people. There is a close relationship between technology and science in particular and with other disciplines. Science and technology form the basis for inventions, for manufacturing and for simple logical thinking and action. This means that scientific and technology literacy is

necessary for all individuals especially in developing countries which have to move faster in the attempt to raise the standard of living of their people.

Mensah et al (1992) professional studies source book for science Teachers states that, science is a way of learning which involves firsthand experience, inquiry, problem solving, interpretation and communication of ideas (facts). Science is a process of generating knowledge. It is a search for explanation and it involves a method (activities) of arriving at facts. Science is a process and a product. Abbey et al (2001) integrated science for senior secondary schools adds that natural science is a fusion of the major branches of science. Its study at the basic education level with equips the young person with the necessary process skills and attitudes that will provide a strong foundation for further study in science. In a simple way, science is “know why while technology therefore depends on each other. Many technological advances involve the application of new scientific principle in the field of biotechnology or genetic engineering, for example

1. Pure science – obtaining knowledge from research.
2. Applied science – using knowledge from pure science to solve problem in our daily lives.

Science developed through objectives analysis, instead of through personal belief. Knowledge gained in science accumulates as time goes by building on work performed earlier. Such of this knowledge is our understanding of numbers stretches back to the time of ancient. Finally, it is important to point out that research towards the goal of sustaining science; it is the responsibility of all participants in the system including scientist, engineers, doctors, teachers, policy makers, researchers and students to play their part. A system

approach also implies interdisciplinary effort in research and education. This requires not only the input of researcher from various disciplines but also all stake holders in the science industry.

Therefore, it is important to realize that each small decision can make a difference and contribute to advancing the entire system further on providing interest of pupils in integrated science lessons could be as a result of poor teaching methods employed by some teachers. Most of the teachers especially newly trained teachers who have been posted to the upper primary school lack sufficient knowledge and interest to teach science. They use the lecture method instead of the activity method where a lot of practical work is used to support the teaching.

IBM (2006) among others has caught on to this dynamic on lack of pupils interest in science by organizing camp meetings on how do we make science attractive? Known as (BXITB) (Exploring interests in Technology and Engineering) Reese Wither (1997) shed the same problem that science is boring” Due to the difficulty associated with learning the subject. Finn (2001) says the problem could be the fact that most science students don’t have role models. She said that each pupil must be assigned to a mentor at the beginning of the year for correspondence throughout the year if they don’t see someone in that role it’s like well how do I do it. Finn says.

Fezerabend (2005) stated another contributing factor could be the fact that science education is a long way to success as compared to other social sciences. Also the absence of science clubs for pupils could be a contributing factor. This situation deprives students, a rich avenue

to interact and learn integrated science from each other as well as other desirable and useful attitudes in science. The above suggestion in the various researchers identifies some of the causes of pupils' lack of interest in science lesson.

The effect of TLM's on the teaching and learning process

Adeyanju, (19997) stated that learning can be reinforced with learning aids of different variety because they stimulate, motivate as well as arrest learners attention for a while during the instructional process. Learning aids are instructional materials and devices through which teaching and learning are done in schools. Examples of learning aids include visual aids audio visual aids, real objects and many others. Asamoah (2001) adds that, the visual aids are designed materials that may be locally made or commercially produced. They come in the form of wall charts, illustrated pictures, pictorial materials and other two dimensional objects. There are also audio visual aids. These are teaching machines like radio, television computer, and all sorted of projectors with sound attributes.

According to Abayah (2005) TLM's are instructional materials that are used both by the teacher and the pupils in the learning process for effective teaching and learning consequently, materials the teacher was to facilitate learning, understanding or acquisition of knowledge, concept or skills by the students are termed teaching materials. Me further said, TLM's make teachers task very easy and promotes learning. They make learning situation becomes real and not abstract. Akanbi and Imogie (1988) stated that students on teacher education and use of instructional materials have been carried out and reported by several investigators including those of Agun (1986) pointed out the need for development of skills by teachers undergoing

their training and those on the field so that they could be able to use a wide variety of instructional materials sufficiently well.

Lynne (1982) reported that some investigators pointed that whenever they teach with some of the learning aids, their students get more stimulated because the learning aids help them to become more attentive. In addition, students positive attitude generate more interest for the lesson they learn. As a result, pupils show more interest and participate fully better in lessons. According to the poet Simonides (1994) words are the images of things (as cited in Benson, P. 141). Benson (1997) Branton (1999), Dwyer as cited in Klan man said although the educational community is embracing visual enhancements in instruction, the connection of visual and verbal information is evident throughout history.

Aristole (1974) stated that without image, thinking is impossible “(as cited in Benson, P.141). West (1997) stated that characters’ in alphabets began as picture with meaning. These symbols portray a man made language with no distraction between words and pictures. Berger (1972) explains, ‘seeing comes before words. The child looks at and recognizes before it can speak (pg3). Sinatra (1986) reviewed that the Dale cone of experience model is based on the concept that learning evolves from the concept to the abstract, visual symbols are non verbal representations that precede verbal symbols. Action activities provide the concrete base for the abstract use of symbols in defining and explaining the action activities.

West (1997) stated that proficiency with words and numbers in insufficient and must be supplemented with additional basic skills as new and emerging technologies permeate

activities of daily living. Viewing change with fear and skepticism obtain accompanies shifts such as these that can revolutionize society. Socrates (1976) portrays the new technology of written words as dangerous and destructive, artificial and rigid, and unresponsive and insensitive as more visual elements are incorporated to achieve an optimal balance between verbal and visual cues in education.

Paul (1986) reviews some researches into the use of TLM's the result to construct an ornament for the effectiveness of TLM's as a Vehicle for teaching. Donkor et al (2001– 2005) said children learn best by 'doing' thinking and talking for this are both interesting and worthwhile. They emphasizes the need of teaches to guide encourage and compliments their pupils and try to anticipate their learning needs.

Macharia and Wario (1989) also said TLM's provide variety in learning, improves the classroom situation by providing excellent materials and classifying abstract concept. Nyanteh and Asamoah (2001) said TLM's generate interest and interest brings understanding indeed when pupils are introduced to TLM's they become excited as they manipulate it and want to learn more. Nacino-Brown (1982) et al also put fore and that instructional materials demystify and create interest, thus help to individualize learning and enable many at the same time. Delax (1986) says TLM's make teaching and learning easier and children want to learn again. He says TLM's help the teacher to talk fever concerning a concept because children have already captured some ideas about the concept. When those teaching and learning aids are seen.

Asare–Ahene (1997) stated that improvisation materials demystifies science and creates interest in learning science. He said it helps to individualize learning. Thus it enables many of the learners to engage in practical activity at the same time. It encourages group work hence co-operation and tolerance are enhanced. It enhances criticisms and invites other suggestions in science lessons. Moove (1998) states that if instructions are to achieve maximum effectiveness, learning should involve students as much as possible. In effect he says that students learn by doing. He concluded that learning is effective if all senses are involved

Appropriate TLM's that can help arouse the interest of pupils in science lessons.

Plamer (2004) stated that there are two ways of arousing pupil interest in science. They are self efficacy and situational interest that is produced due to a specific situation. This interest may be transient sustained situational interest, however can develop into a long term interest in a content area.

Stipek (2002) continues that long term interest drives in creased memory and attention, greater comprehension and deeper cognitive engagement and thinking. Situational interest is therefore useful to increase pupil motivation and performance. Here scientific principles can be woven into stories that young children can enjoy and relate science concepts to the pupils daily lives in this way, concepts taught and learnt make greeter sense and become more meaningful to pupils.

Blossen (1995) professor of science education states that science teachers are concern about helping students to become critical thinkers' problem solvers and scientifically literates citizens. She further explained that if we want students to function as independent thinkers,

we need to provide opportunities in our science classes that allow for greater student involvement and initiative and less teacher domination of the learning process. This means a shift in teachers' role from that of information giver to that of a facilitator and guide of the learning process. From these studies it has been concluded that the use of TLM's which include audio, video, animations, presentations, photographs and models are helpful to arouse pupils interest in science lessons progression in learning is usually from concrete to the abstract. Young people can learn most readily about things that are tangible about things that are tangible and kinesthetic.

With experience, they manipulate symbols, reason logically and generalize. These skills develop slowly and the dependence of most people on concept examples of new ideas Persists throughout life. Concrete experience is most effective in learning science when they occur in the context of some relevant conceptual structure. The difficulties many pupils have in grasping abstractions are often masked by their ability to remember and recite scientific formulae they do not understand.

Asamaoh (2004) explained the various TLM's that could be used to arouse pupils' interest in the teaching and learning and learning process are visual and audio – visual aids

- Visual Aids – these are materials that appeal more to the sight which the teacher uses to make visual impression on the learners during the lesson for effective understanding of the lesson. These are normally real objects, picture and charts.
- Audio-visual Aids – these are materials which can be seen and heard (visual and audio) and together with the teachers' voice, add to the effectiveness of the lesson. Audio

visual materials may be classified into three primary, secondary tertiary audio visual aids.

Conclusion

Teachers who take the time to provide instructional materials and options that take into accounts the different ways pupils receive and express knowledge, are more whys do see their pupils succeed by developing interest in science lesson. Science classrooms should provide a variety of audio, visual and print input methods depending on pupil need. Appropriate TLM's allow communicate their true learning. According to BSCs pupils of teachers who most closely followed their SB instructional model engage, explore, explain, elaborate and evaluate achieved a high rate of success by understanding science concepts.

CHAPTER THREE

METHODOLOGY

Introduction

This chapter deals with the methodology and how the project work was carried out. The research work concerns itself with the research design, population and sample selection, research instruments, intervention process which in clued pre intervention and post intervention. This part briefly describes the researches the research work.

Research design

The type of research design chosen is an action research. Action research is a type of research activity in which the researcher works collaboratively with other pupils to solve perceived problems. It is an approach which aims at improving a problem related situation through change. In the school situation, action research encourages teachers to be aware of their practice to be critical of that practice and to be prepared to change. It is participatory in that it involves the teacher and the learners in its enquiry.

The value of the action research allows both the teacher and the pupils to learn experientially about the research process by being there and by doing it instead of being told how to do it. Action research does not only focus on generating new knowledge, it also enables both the participants (that is the teacher researcher and the pupils) to develop appropriate intervention strategies aimed at finding solutions to the problems identified in the teaching – learning situation.

Population and sample selection

The researcher used purposive sampling to select his target population purposive sampling is a non probability sampling technique which helps to select a sample for study. Based on good judgment one can handpicked elements in a population to work with. This method was used to select the sample for the study which was the upper primary four pupils of Akim Kwabeng Anglican primary School. The class has an enrollment of twenty – seven (27) pupils of which fourteen (14) were boys and thirteen (13) were girls.

The researcher chose the class four class because she realized that most pupils were not interested in the integrated science lessons and this was effecting g the performance of the pupils academically. Due to that, the researcher decided to investigate to find the root cause of the problem and find a remedy to the problem in the classroom.

Data collection instruments

The researcher used observation interview and testing as instruments or tools for the data collection for her research work.

Observation

Observation which was used as a diagnostic tool for identifying the problem is the act of recognizing and noting facts or occurrence. Observation can pairly be called the classic method of scientific enquiry. In the strict sense, observation implies the use of the eyes rather than the hand and the voice. The Concise Oxford Dictionary defines observation as accurate watching and noting of phenomena as they occur in nature.

Interview

Interview is another research tool employed by researchers whereby relevant questions about the problem are asked any group or individual who can provide information about the problem. In this study, the researcher interviewed pupils and parents on the cause of pupils lack of interest on integrated science lessons.

Test

In action research, test can be used to diagnose the extent of a problem and again to determine the effectiveness of an intervention when it is used as a diagnostic instrument, it is known as pre – test. When used as an evaluative tool to determine the effectiveness of the intervention, it is called post – test.

Intervention processes

Pre – intervention

The researcher, before the intervention, interviewed pupils and some parents on why pupils lack interest in integrated science subject the results of this helped in designing an intervention to solve the problem. Furthermore, a pre – test was done to ascertain the problem, and the results observed and reoccurred during observation

Intervention

Intervention according to the Macmillan English Dictionary for Advance learners (2002) is a situation in which someone become involved in a particular issue or problem in order to influence what happens. It is a series of concrete measures or approaches or method put in place to solve a specific problem. This is where the researcher employed the used of appropriate teaching and learning materials during the lesson delivery which aided participation and understandings of concept interest by interacting with the teaching learning materials performed a lot of experiment with them and asked a lot of questions during the lesson delivery. These helped pupils to show greet interest in integrated science lesson which aided their understanding of the concepts taught.

Post- intervention

During the intervention, it was revealed that the classroom atmosphere was lively because each child in a group was engaged in some useful activity. The researcher observed that pupils interest in the lesson has been aroused due to their interaction with the TLM's during the lesson. Their excitement coupled with their high marks in the post – test aroused their interest in the subject subsequently. As pupils manipulate TLM's and performed experiment under energy, their psychomotor skills were also developed. Because learning materials were readily available there was no break in pupils activities except when lessons were to be changed. This emphasized that pupils interest in integrated science can be improve if teachers continuously use appropriate TLM's effectively in their lesson presentation.

Limitation

This research work was limited by a lot of factors which include truancy on the part of some pupils sampled for the study. Some pupils were absent from school during certain days marked for the intervention. This hampered the progress of the study. Insufficient time allocated for the projects work was another setback. The research had to use limited time to carry out all the activities for the research work. Moreover, insufficient logistics and other teaching and learning materials like the fractional chart affected the study. Pupils had to be put in groups to get access to some materials instead on handling it alone.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

Introduction

The chapter deals with the presentation of the various results obtained after the pre – test and post – test. Description statistics, which is tables and percentages, were used in presenting data.

Pre – test

The researcher used pre – test in collecting information about the pupils before intervention.

Table 1

Marks obtained by Pupils in the Pre – Test

Marks obtained (10)	Number of pupils (27)
0	12
1	4
2	8
5	3

Total marks for the test = 250

Total marks obtained by pupils = 34

Marks obtained 13. 6%

Post – Test

Table 2

Marks obtained by Pupils in the Pre – Test

Marks obtained (10)	Number of pupils (27)
3	2
7	5
8	12
10	8

Total marks for test = 250

Total marks obtained by the pupils = 196

Percentages marks obtained 84.4%

This represents the scores of the pupils in a post – test. The above marks obtained by the pupils indicate that there was a tremendous improvement in pupils’ performance in Integrated Science lesson.

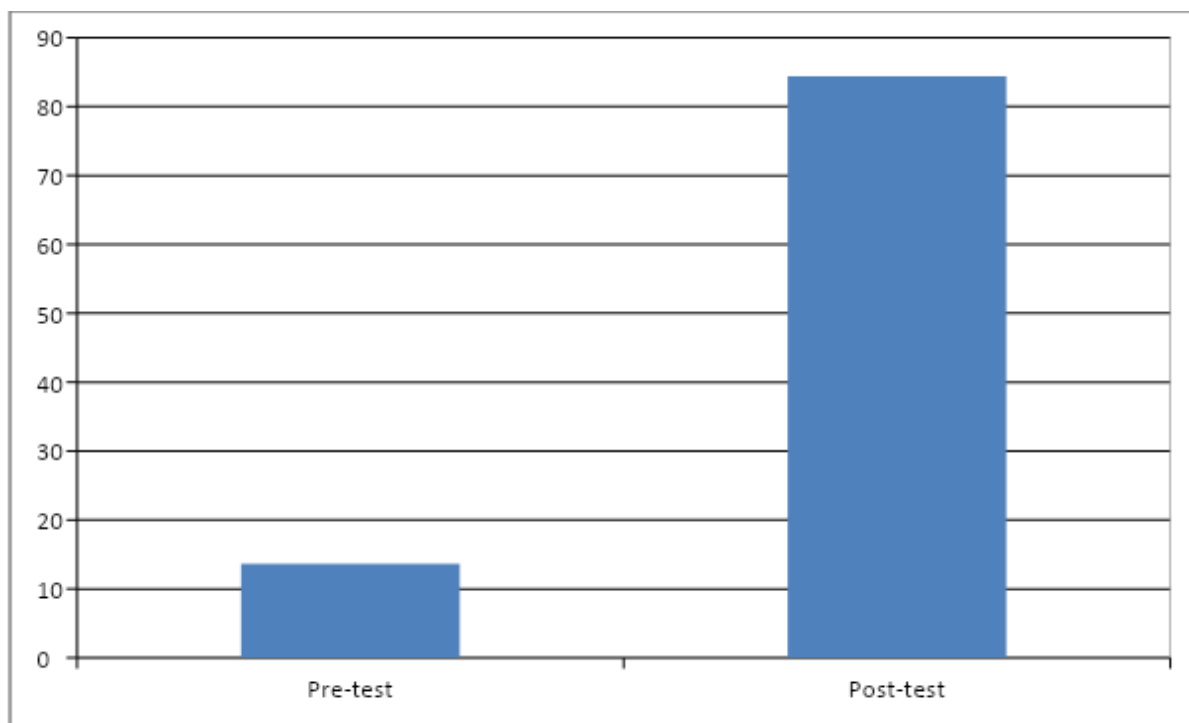
Table 3

Comparing Pre-test and Post-test

Test	Marks	Percentage (%)
Pre – test	34	13. 6%
Post – test	196	84. 4%
Total		100

Figure 1

A Bar Chat comparing Pre – Test and Post – Test



From Figure 1, it can be clearly seen that the marks scored in the pre – test were very low as compared to the marks scored in the post – test. This indicates that pupils’ interest and excitement during lesson delivery have increased their performance in the integrated science lesson drastically. This can be attributed to the appropriate teaching and learning materials (TLM’s) used by the teacher.

Discussion of the finding on the basis of the data

From the analysis made, pre – test was conducted first to confirm the poor performance of the pupils due to their lack of interest in the subject. After the interventions, post – test was conducted to verify pupils improved performance. It is clear from the two values that there was a tremendous improvement between the pre –test score and the post test scores. It can

also be seen that majority of the pupils representing 84.4% performed better on the post – test as compared 13.6% in the pre-test. The assail of the pupils interest and improved performance can be attributed to the appropriate TLM's used by the researcher

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The topic of the research work was using appropriate teaching and learning materials to help improve pupils interest in Integrated Science lessons at Kwabeng Anglican Primary two (2). The researcher gathered data for the study with the use of instruments like observation, interview and test.

There were ten (10) test items used for both pre-test and post-test for the research work. After comparing the results of both the pre-test and post-test, it was found out that the intervention process was successful. This has been the fact that pupil who were not willing to participate in Science lessons now show interest in the subject.

Conclusion

The researcher concluded that pupils interest and participation in science lessons after the introduction of the TLM's were very high. This made the pupils grasp the concept without any difficulty thereby obtaining higher marks at the end of the post-test. Eventhough some pupils did not obtain higher marks at the end of the post-test, yet it was better as compared to that of the pre-test. Since children learn by doing, the introduction of the TLMs sustained their interest in the lesson which contributed to their understanding of the concept to the extent that Science phobias and those who use to dodge science lessons were always present.

This is to say that the TLMs motivated pupils to cultivate the habit of studying Integrated Science.

Recommendation and suggestions

The researcher recommended that the preparation and the use of TLMs for teaching involves time and financial aspect, therefore, it needs a good facilitator, planner and also someone who has knowledge about the subject matter. There is the need for teachers to put aside problems that hinder the use of TLMs and focus on incorporating it in lessons.

Secondly, it is recommended that, the duration for the research should be long enough to be able to achieve realistic results.

Thirdly, it was observed that there were not enough teaching and learning materials available as well as curriculum materials. It is suggested that the Ministry of Education and other Non Governmental Organisations should help in distribution of teaching and learning materials to all schools. This will help improve upon the manipulative skill in the pupils.

To the curriculum developers, they should come out with more books and make these materials readily available in all schools for easy reference.

The schools should have a good relationship with the community so as to promote effective teaching and learning. Moreover, with regards to inadequate knowledge on some new topics to some old teachers, it is recommended that the government and the Ministry of Education should organize in-service training and seminars to update their knowledge in their subject areas.

Areas of further research

This research work dealt with using appropriate TLMs to help arouse pupils' interest in Integrated Science lesson. Also, further research could be conducted on effective methods of teaching Integrated Science.

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APPENDICES

Appendix A

1. Do you enjoy studying Integrated Science?
2. Do you perform practicals as part of your science lessons?
3. Do your parents support you in the studying of science subject?
4. Do you wish to study Science as a subject?
5. Do you enjoy teaching and learning in the school?
6. Why do you sometimes refuse to attend science lessons?
7. What are the causes of you low interest in science lessons?