CHAPTER ONE

INTRODUCTION

This chapter looks at the background to the study, statement of the problem, purpose of the study, research questions, significations of the study, delimitation, limitations and organization of the study.

Background to the study

Mathematics places a very important role in very educational system and in everyday life. The ability to count, calculate and analyze and draw conclusion are the core aims of education. These abilities are acquired through the study of mathematics. Different academic disciplines such as economics, science, finance, etc. need the knowledge of mathematics. Infact, almost every field of life apply some mathematics concept. At least one needs to know simple addition and subtraction before he can undertake day - to - day transactions in monetary terms. On the academic ladder, mathematics operate as a "critical filter" for promotion from one stage to another within the same level of education or as a pre – requisite for admission from one level of education to another level. It is therefore to high extent a critical subject that determines the source of failure in most if not all academic disciplines.

The application of mathematics and its relevance in daily life cannot be over emphasized and demands the attention of both teachers and students alike. Unfortunately, the attitude of basic school students towards mathematics in recent time leaves much to be desired. The subject is perceived to be difficult to learn and understand. Whenever mathematics is mentioned,

students are griped with fear and contributions of student during mathematics classes have been very poor. The wrong notions about mathematics have made students feel it is normal to fail mathematics examination. As a result, general performance in mathematics or any mathematics related subject has been very poor leading to fallen standard in our educational system in Ghana since mathematics is applicable in most academic disciplines. Any attempt to curb the downward trend of our educational system must find solution to the poor attitude and behavior of students towards mathematics.

Statement of the problem

The application of mathematics and its relevance in daily life could not be over emphasized. However, in recent years attitude of students towards the study of mathematics is very appalling leading to poor performance in the subject and decline in the quality of our educational system as a whole.

Year after year, the general public, the media, educational institutions, parents, and students alike complain about the high failing rate in mathematics. It is believed that attitude and behavior have significant influence in every teaching and learning process. Positive attitude and behavior is required to develop interest and skills in every academic discipline, particularly, in mathematical operations in understanding its concepts.

Poor attitude and behavior of students have become a major challenge to the study of mathematics. There is obvious need for research to be undertaken to unearth the possible

cause of this poor attitude and behavior of students towards mathematics and find sustainable solution to it.

Purpose of the study

The purpose of the study brings out a very good question into mind; why is the researcher undertaking this study? The aim of the research is to dive into the poor attitude of Abompe primary five pupils towards the study of mathematics.

The research intends to improve the pupils' attitude through the use of real objects and motivation. The research will there evaluate basic school pupils attitude and behavior towards the study of mathematics.

Research questions

The following questions have formulated to serve as a guide to the study.

1. What are the major cause of poor attitude and behaviors of student towards mathematics?
2. What are the effects of students' attitude on the study of mathematics?
3. What appropriate actions can be adopted to change students' wrong perception about mathematics?
4. What are the importance of studying mathematics?

Significations of the study

Even though the high failure rate in mathematics is as a result of poor attitude and behavior of student towards this subject. In recent year, it has been concern of all stakeholders in our educational system to help arrest this problem. Nevertheless not much research has been conducted into it. This makes this study of much importance because.

1. It will bring to light all major factors that contribute to the poor attitude and behavior of students towards mathematics.
2. It will help all stakeholders to know the need to reverse this attitude and behavior.
3. It will come out with recommendations that will help stimulate students' interest in mathematics.

Delimitation

The study was conducted in a village which is about four towns away from the district capital Kade. The town has two schools, a Presbyterian Primary schools and District Assembly (D/A) school. The study is carrying on fifteen (15) selected students from the primary school.

Limitation

The researcher was not with series of problem below are the list of problems she face with.

The pupils were unwilling to express their views on the problem identified. They also felt that if they provide the researcher with the right information she would disclose it their teachers. Teachers on the other hand did not expect their faults and attributed everything to the pupils. The researcher faced a lot of inconvenience because she had to administer the questionnaire during instructional period and a lot of frustration here and there.

Again, inadequate time given for the research was not enough. The researcher was given a duration of five months. Moreover, the researcher is a teacher and is occupied throughout the week. During the administration of the questionnaire some students were called out of the classroom by parents when instructional period were over.

In conclusion, some pupils copied their friends work and some students too. Influence their friends answers so the actual genuine of the data was not there.

Organization of the study

This is the chapter overview of the whole chapter. The chapter one explains the introductory aspect. It consist of the background to the study, statement of the problem, the purpose of the study, the research question significance of the study, the delimitation, limitation, and organization of the study.

Chapter two is the literature review. It looks at other researchers work related to the topic understand. Chapter three is the methodology the sample and sampling procedure the population, pre-intervention, intervention and post-intervention. Chapter four is presentation and analysis of data. Chapter five deals with summary of the study, conclusion and recommendations.

CHAPTER FOUR

REVIEW OF RELATED LITERATURE

Mathematics is the study of patterns and relationship. Michael (2010) though agreed that the subject deals about relationship between one quantity with the other quantity, he however agreed that mathematics is more than the study of relationship of things but it also deals with its relationship towards the fields of discipline. It transcends to other fields of discipline by it application.

According to Michael (2010), mathematics seeks out patterns through studying the relationship and established new conjunctures' through valid logic and proof. He stressed that although mathematics can be said as the study of patterns relationship it does not mean the subject is all about the pattern and relationship mathematics also includes structure, change, philosophy,

logic and space He said mathematics is a way of thinking but the definition of mathematics seems to deviate the subject from the real world since this can be said that mathematics do have their own world different from reality. Furthermore, the definition accounts for the deviancy of the mathematics thinking from the normal person are thinking but this definition is truth. He added that mathematics is a way of thinking, an organized way of thinking, vigilant to relationship of things. This is not a way of thinking that only needs and high intellect can achieve and comprehend but ways thinking that anyone can opt to follow. He also stared that mathematics is an art.

Websters universal Dictionary defined act as a human creativity, a skilled acquired by experience. Declaring the subject as an act means, mathematics is not born overnight. He typed mathematics unto diamond that undergone many process to improve its luster and becomes shiny to market more perfect and so does mathematics. Dodongan again, stated that mathematics is a language in the light of the language mathematics must have vocabulary, grammar community who is using it and range of meaning in order to be considered as a language. He added that mathematics have both visual and symbolic vocabulary. It has a different meaning for word with general usage, like set, terms, group, ring etc. furthermore it incorporate symbols other than the alphabet eg. ŋ, ε, u, >, <, It also includes diagrams and visual in its language such as graph, figures and the like. In mathematics we follow certain rules such as the rules of addition of integers.

Mathematics Learning Environment

Mathematics being a compulsory subject of study, access to quality mathematics education is every child's right. On the other hand, mathematics education in our schools is beset with problems. Due to hierarchy of concepts and largely the deductive and abstract nature of the subject mathematics is conceded as a very doll and difficult subject. A phobia has been created in the minds of the children that mathematics is tough to learn. As a result, most students are not taking interest in the subject and it becomes one of the main causes of student failure in the subject.

A shift in focus is needed in mathematics teaching especially in mathematics learning environment where whole range of process. A mathematics learning environment should be such that students could explore mathematics concept through activities and experimentation. This necessitates the establishment of mathematics laboratory. The main aim of the mathematics laboratory is to initiate children to enjoy mathematics, pose and solve meaningful problems to use abstraction to perceive relationship and structure and to understand the basic structure of mathematics.

Need and Purpose of a Mathematics Laboratory

It enables the students to learn with the help of concrete objects and relatedness of mathematics with everyday live. It helps the students to verified or discover some geometric properties using models and measurements.

It provides opportunity for student to understand and internalized the basic mathematics concepts through objects and situations. It helps the students to build interest and confidence in learning the subject. It provides greater scope for the individual's participation in the process of

learning and becoming autonomous learners. It provides scope for greater involvement of both the mind and the hand when facilitates cognition.

It enable the teacher to demonstrate, explain and reinforce abstract mathematical ideals by using concrete objects, models, charts, graphs, pictures, posters etc. Institutes of Scientific Research and Training is the promoter of "mathematics laboratory" Which is developed as per the guidelines and parameters NCERT as well as the basis of expertise opinion gathered from leading mathematics in India.

My Teaching Philosophy

Vali (2010) asserted that teaching mathematics is the fusim of two beautiful subjects; mathematics and people. Teaching may begin in the college but it is really a community experience, radiating outward. The mathematical knowledge and thinking skills students carry with them affect their families, friends, co-workers and communities.

He attributed his success as a mathematics teacher to a sense of connectedness concepts of ideas, of skills and of people and seeing it continue outward. According to him, this is what makes teaching so rewarding, so deeply rewarding.

A teacher, especially in an abstract discipline such as mathematics needs to know, deep in the heart that is element can be caught everyone and that there are no banners to entering this whether from personal or society's stereotypes. He also emphasized that teachers must be flexible and use common sense calling on a range of approaches from lectures to cooperate learning and individual discovery. To him that is the heart of my teaching, which combines

and varies these classroom experience for each of student. He added that this does not only improve performance in mathematics but performance in other subject or well.

Vali also stated his philosophy confirms on observation by Plato that skills in mathematics sharpens the mind for other subject. He also admitted that individual teachers often tail in their bid to motivate student learning. He asserted that group of student, making their educational experience as experience as engaging and productive as possible. He again stated that the role of the teachers to create and mature gardens burgeoning academic network of student and teachers. Reystone method; A synergistic models for teaching and learning.

“Have you noticed, how people with a talent for calculating are naturally guide at learning almost any other subject and how training in them makes a slow mind quicker” Plato the Republic.

What is learning?

Psychologist perceives learning as a relatively persistent change in an individual behavior which is brought about by experience. This experience may be natural day to day occurrences or contrive situation aimed at bringing quantitative thinking ability. Mathematics becomes functional in the lives of children when about a specific piece of learning mathematics is a means of developing logical and they have developed basic computational skills and can apply mathematics when put psychologist into two camps vi2 behaviorist and develop mentalist.

The Behaviorist Theory

This depends upon the principle of operant conditioning most clearly expounded by psychologist B. F Skinner and R. Gagne. They hold that learning takes place through stimulus Respond(S-R) mechanisms. Teaching is something done to the child, it is process through which the child is put to obtain desired behaviors. The child's mind is thought of as an empty pot to be filled by teachers.

The result can b e favourble (RT) or unfavourable (R-) to the learner. When the desired behavior of the child's mind is achieved, thus (A+) then positive reinforcement in the form of reward, example, praise is given by the teacher. Negative reinforcement (in its crude form some sort of punishment may also be given if) (R-) occurs. Learning is often organized as a series of guided exercise called programmed learning.

The developmentalist theory of learning

This has been developed through the work of psychologist such as Jean Piaget, Jerome Bruner, Zoltan Dienes and Richard Skemp. These people believe that, in learning the mental process of the child must be taken into account. Children cannot learn the same content as adult and individual children will differ in the way they learn. In other words, learning is a personal experience and the job of the teacher is to facilitate this process. They also believer that there are developmental stages in the ability of the child to think logically (or mathematically) and the children have to reach a certain point of development before they "ready or able to understand a particular mathematical concept.

Piaget claimed that as children interact with social and physical environment, their mental growth progresses through four qualitative district stages. The table gives brief descriptive of

the basic characteristics and distinction among these stages of development with special reference to the learning of mathematics.

It should be noted that in his original work Piaget stated that the formal operational stage begins on average when children reach twelve (12) years of age and this is the figure still quoted in many instances. Piaget however, was working with very precious children and it is more like that few children reach this stage before the ages of 14 or 15. You should also appreciate that the ages ranges quoted in the table are only approximation and that individual children will progress the various stages at different rates. All individuals however go through each of these stages in order in which they are presented.

An important idea, associated with Piagets work and noted in the stages of concrete operation is that of conservation. Children can conserve number when they recognize that the number of objects does not change when they are rearranged or spread out and they can conserve length when they know the same no matter where it is placed.

Table 1

Stages of development

Stages of development	Approximate Duration	Characteristics
Sensory motor	0 – 2 years	During this period children are mostly without language. They learn to physically control objects in their environment. Towards the latter part of this stage they become aware of others and language begins to develop.
Pre – operational	2 – 7 years (pre – school, nursery, kindergarten, and class 1)	Children will not be able to carry out the four rules (addition, subtraction, multiplication and division) mentally because they cannot relate to the abstract state of things. They have difficulty in height quantity, time, grouping items by classes, numbers. There is no reversible thought process that will allow for logical thought. Children at this stage are very good at imitating thought may not understand what someone does. They have difficulty putting things in their 'proper' order. Example, a chick hatching from an egg. They see only

		their own point of view the world and do not realize that others might not view the world the same way. They focus on one attribute of a situation at a time and are strongly influenced by vision data
Concrete operational	7 – 14 years (Primary 1 – 2 up to Junior High School)	Children begin to develop a logical system of thought. They are tired to the concrete here and now. When given a problem, they cannot formulate all the possible alternatives at the outset. They must achieve understanding of attributes are at a time. They cannot combine a series of operations to perform complex task. They begin to group things into classes and form one to the correspondences. They can reverse thought processed and other elements or events in times. They become to understand time and space and become capable of operating independently. They are able to perform mental actions

		rather that relying on the physical need to perform them.
Formal operational	14 years and above (Junior High School)	Children have acquired the ability to deal with the abstract in both verbal and mathematical situation. They can reverse thought processes. They can understand time, space, quantity, height, distance and so forth. They can perform mathematical operations base on abstract though alone.

The American psychologist Jerome Bruner in a number of important publications, suggest that children and adults alike go though three main stages when they are learning some piece of mathematics. He stated that, any subject can be taught effectively in some intellectually honest form to any stage of development. Jerome Bruner's theory of development and the learning of mathematics in general can be summarized as follows.

Enactive

The individuals can know many things at the motor level and perform many coordinated movements without being able to express this knowledge. This is especially true of children in the sensory motor stage of development but even an adult who has the language often cannot

express his motor knowledge in a way that others will know it as well as he does. This type of knowledge is term enactive.

Iconic

The second kind of knowing occurs when children can make mental pictures of concrete objects. For example, the child can picture mentally a collection of two counters plus three counters which joined together make five counters. Children can produce imaginary 'maps' in their mind visual and perceptual.

Symbolic

The child can make mental manipulation on abstract symbols especially the highly organized and symbolized forms found in advanced mathematics.

The formation of concept

Richard Skemp describes concept as the mental object which results when we abstract from a number of number of examples something which they all have in common. For example, young children learn the concept of "god" from repeated contact with many types of dog. Words and symbols are used to describe or label concepts. Concepts are learned virtually all children from the time of birth can learn concepts. The learning of language and the symbols that name concepts often lags behind the formation of the concept itself. Children learn their early mathematics by abstracting concepts from concrete experience.

Primary concept are built form sensory experience, example, seeing, feeling, tasting, etc. For example, the concept of 'redness' is formed seeing many red objects are recognizing their

common property. Similarly, the concept of "threeness" is formed from experiencing many different sets, each containing three objects. Secondary concepts are built up by combining primary concepts so red, blue, green, etc are all "colours" and one, two, three, etc are all "numbers". This process of building concepts from simpler ones occurs with increasing complexity within mathematics.

According to Skemp, before we try to communicate a new concept, we have to find out what are its contributory concepts and for each of these we have to find out its contributory concept; and so on, until we reach either primary concepts or experiences which we may assume as given. Many of our everyday experiences are sensory, example, hot, cold, sweet, round, etc. However, in mathematics, once the bases are established, the level of abstraction quickly increases so that abstract concepts are built upon abstract concepts rather that on new sensory experience. The teacher needs to help learners develop ways to understand new concepts by using good examples.

Skemp gives two principles of learning mathematics that relates directly to the notion of concepts as follows;

1. Concepts of higher order than those a person already has cannot be communicated to that person to encounter a suitable collection of examples can such a concept be communicated.
2. Since in mathematics examples are almost invariable other concepts, the concept used in the examples must already be formed in the mind of the learner.

Differences between rational and instrumental learning

Children understand concept when they relate them to other concepts they know Piaget call this "Equilibration" and Skemp call it "Understanding" (rote learning) with relational. He constructed instrumental understanding (rote learning) with relational understanding (meaning learning). The former implies that the child knows how to perform a technique to solve a particular problem the latter implies that the child also understands why the method he is using works. Skemp list some possible advantages first of all instrumental learning and the relational learning.

Instrumental learning

1. It is usually easier to acquire. For example given a rule to pupils and asking them to apply "minus time minus equals plus" or to divide by a fraction you turn upside down and multiply. It's a page of correct answers is all that is required instrumental mathematics can provide it more quickly and easily.
2. The rewards are more immediate and more apparent. Children feel successful when they get a page of correct answers. They need success to restore their self confidence and they can achieve this more quickly and easily using instrumental mathematics than trying to gain instrumental and understanding.
3. Since less knowledge is involved, children can often obtain the corarect answer more quickly and reliably using instrumental mathematics than by relational mathematics. However, relational learning is more adapted by new tasks. If the has relational

understanding a child not only knows which method work but why. This enables him to relate the method to new problems.

4. Mathematics learn relationally is easier to remember because the understanding of the inter – relations between concepts allows than to be remember as part of a connected whole instead of a list of separate rules but the results, once learned, more lasting. Therefore, there is less learning to do and in the long term the time taken for learning may well be less together. For example, young children must at same stage memorize all of the addition facts to ten. This can be instrumentally, so that they just "know" tahe answer or by using structural materials so that, as well as knowing the answer, they also have a picture of how the answer is formed. In this way, they may look at a sum as such as; 8 + 7

   Equivalent to 8 + (2) + (5)

   = 10 + 5

   = 15

   This is complicated when it is written down but structural or pictorially it is simply a question of moving two blocks from the seven to the eight make 10 + 5. The advantage of learning like this is that the same principle can be applied to an example such as 87 + 48, thus, 1 need 13 more to make (87) 100. 48 minus 12 is 35, therefore, the answer is 35.

5. Relational understanding is organic is quality when people get satisfaction from relational understanding; they not only try to understood relationally new material which is put before them but also activity seek out new material and explore new areas just like a tree extending new territory in search of nourishment.

Implication for teaching

The job of a teacher is to manipulate the learning environment to provide the best opportunity for the child's knowledge and understanding to grow in desirable ways. The following general principles are offered as potentially useful guides to the teacher in making selections of teaching actions. The principles are inter – related and as a system are mutually supportive.

1. Children understand a concept when they can relate it to other concept when they already know.
2. All children need concrete experience throughout primary school. Older children may need fewer than younger children of high ability may need less than children of low ability, but all should have some.

How children learn

Rather than give an overarching theory of how children learn, John Holt, movement uses anecdotal observations that question assumptions about how children acquire knowledge and learning skills. Holt rejects the idea that children are monsters of evil "who must be beaten into submission or computer who we can program into geniuses". Neither are they the passive receptacle of knowledge that can only learn in a school room. Instead, he calls upon parents and educators to trust children.

First and foremost, Holt believes that children are born learners and that there is a curiosity in all children that begins at birth, not when they are put in school. His observations of young children reveal that their brains are trying to make sense of the world. Children want to solve

problems; they like to think. The problem is that parents and educators get in the way of this nature process by placing children in large impersonal schools, and by teaching a meaningless curriculum in an industrial factory setting. Holt rejects knowledge that is entirely though in an abstract manner. He uses the example of teaching fraction as anesthetic experience with little world application.

Similarly, he is disgusted by children's primers and picture books with their "dumb and simple vocabularies rather, Holt believes in exposing children to real world problems of increasing complexity. For example, he encourage parents to expose their children to news papers, letters, warranties, the yellow pages-anything tangible and visceral to promote their curiosity about the world.

Staying with the theme of promoting real problems for children, Holt is nostalgic for a time when children observe their parents at work indeed, when parents and children worked side by side. He believes children observation of parental work would accelerate learning on the part of their children, rather than just learning information disseminated from the classroom. This is one reason why Holt is son receptive to home-schooling or as he calls it. His believes actually serves as a hindrance to acquiring knowledge and learning skills. If the aim of education is to create independent thinkers, then educators must learn to refrain from "which leagues only frustrates children into believing that they are not smart enough to learn. This destructive process to Holt shatters their self esteem and extinguishes their confidence in their ability to learn for themselves and at worst turn them away from learning forever.

Teachers rather should be more passive be willing to take a step back and give direction only when stunts need and ask for help. Teachers make the mistakes of believing that they are essential to the learning process and that students cannot work without them. Holt maintains that the best results can be gained when a student is giving time to figure things out to develop hunches that becomes more and more sophisticated with experience. For Holt, there are no stupid mistakes as children their cognitive skills.

The concept of self esteem is the second fundamental belief that Holt espouses. Self confidence is the key to a child's learning. Over bearing teachers and parent coercive educational institutions, the rote drudgery of learning and endless testing-all serve to create a sense of anxiety of crushing curiosity of making learning a painful rather than a natural and pleasurable act. Over time students come to believe that they are failure indeed. Holt asserts that stammering and stuttering are the consequences for some children of destroyed self esteem.

Fear of failure, punishment and disgrace, along with the anxiety of constant testing, severally reduce students ability to perceive and remember and thus drive the away from learning Holt with his trust children philosophy believes, perhaps naively that they have a strong sense of what is right and half an innate self correcting mechanism that will help them to (eventually) solve a problem, most instruction, especially reading, Holt argues is self thought anyway, so why the need for over bearing teachers and parents? Holt believes that learning can be pleasurable and that learning in form of games can be the first step in having children embrace a lifetime. Mathematics is not the enemy. WHY WE FAIL OUR KIDS?

There's a huge misnomer that bad students make foe bad schools. In reality its bad administrators that fail good teachers that turn out failed students. In short, bad schools are ran by bad administrators. I asked is random people their impression of math and I got near the same answer every time most adult said they hated math, teenagers said it was a drug and all of them admitted to be afraid of it. The short question where is how? Simply put, it got nothing to do with math but everything to do with who is teaching it. Students learn whatever is presented. If teacher fundamentally is afraid of math themselves or over excited to the point they fail to see the forest for trees or in this case the student apprehension for the fear that math may present then all is lost no matter how noble the intention.

We teach esoteric concepts in math that are meaningless to 2*3 for examples that the same 3*2? Most people will tell you they are the same when in fact they are not. One statement suggests two groups of three and the other three groups of two, so they are not the same. The number two for example what does it mean? It means nothing unless you can assign a meaning to it. 2 means what two days, 2 miles, two longs, two short, two what? Too bad for most students trying to unravel the cryptic knots placed there by well meaning teachers who fundamentally can't teach math. Look in on any English class and you won't find the teacher holding a dictionary pulling out every word to insure they are speaking properly but in most math classes the math teacher has a next in hand why, because the teacher is not math literature, they don't speak the language. Algebraic statements are really saying something order than suggesting and order of operating to decode its significant.

The reason kinds fail math is because the teachers are not literate and even if they are, most fail to teach it in critical way where the students actually understands in greater dimension how to

use mathematics constructively as a deciphering tool. What happen in most cases are students become slaves to the process hoping desperately never having to revisit the experience save those few who get it and find math to be a very interesting from if communication.

CHAPTER THREE

METHODOLOGY

Introduction

This chapter describes the procedures in conducting the study. The chapter has many parts and sub-headings like researches design, population, sample and sampling procedures, instrumentation and data collection.

Research Design

This study is an experimental research design concerned with immediate solution to solve local problems. The purpose is to solve classroom problem or a local problem through the application of scientific method. It is therefore conducted in a local setting and it is aimed at contributing to signs and knowledge. Action research has a number of practical benefits. The modern teacher needs to be equipped with understanding that various methods or approached that best suit the children he or she is teaching. It is through questions research that the teacher can evaluate the effectiveness of his or her teaching.

Population

A population is the group the researcher targets. In other words, the target group which the researcher is interested in gaining information and drawing conclusion. The targeted population for the study involve pupils of Abompe Presbyterian primary school. However, the accessible population includes the basic three (3) pupils of the school.

Sample and sampling procedure

Sampling is the process of selecting a portion of the population to represents the entire population. The researcher wrote a test and those who had below five were chosen for the researcher. It turns out that not even one of the fifteen (15) pupils not five so all were chosen. A sample consists of a carefully selected subset of the units that comprises the population.

Research instrument

These are the instruments that the researcher used in collecting data for the study. I used test, questionnaire and non – structural interview.

Questionnaire

It consist of a list of questions or statements relating to the aims of the study, the hypothesis and research question to verify and address to which the respondent is required to answer by writing. The researcher wrote questions which require 'yes' or 'no' answers, questions that gives the respondents to choose options and those that gives the respondents the freedom to answer the questions how they liked it. The questionnaire was given to thirty (30) students. See appendix A.

This instrument is used because it offers greater assurance of anonymity. It can be completed at the respondents own convenience. This was used to diagnose the extent of the pupils' inability to understand the basic concept and also to determine the effectiveness of the intervention. The researcher gave it to the pupils as they entered into their own class as a revision of what they learnt in their previous class.

Interview

It involves asking to which respondents answer in face to face situation. This was used on pupils because most of them could not express themselves well in the English language so even with the questionnaire; it had to be explained from time to time. For instance, concerning

the time for learning mathematics, they were asked why they preferred the time they indicated and not one was able to give a reason.

This instrument was used because it had the capacity for correcting misunderstanding by respondent. It also gives the researcher an opportunity to observe non – verbal behavior of respondents.

Intervention processes

This talks about the processes through which the researcher diagnosed, implemented and evaluated the intervention.

Pre - intervention

The first test the researcher conducted before identifying the pupils had a peculiar problem or negative attributes. The pupils were given a revision exercise on page one of the primary three math book and the marks the pupils obtained was not encouraging.

These are the revision questions on the concept they were taught in their previous class (class two).

Samples of the questions are as follows.

Copy and complete;

1. 456 + 145 =
2. 292 = _____ + _____ + _____
3. 35 – 23 =

4. 8 ÷ 2 =
5. 0 x 45 =
6. 6 ÷ 0 =

Below are the answers the pupils provided.

1. 456 + 145 = 411
2. 292 = __ 3 __ + __ 9 __ + __ 2__
3. 35 – 23 = 12
4. 8 ÷ 2 = 6
5. 0 x 45 = 45
6. 6 ÷ 0 = 6

Table 2

The marks obtained by pupils before intervention

Pupils	Marks	Percentage (%)
Amissah Cusmos	4	40%
Debrah Isaac	2	20%
Mireku Fred	1	10%
Oduro Evans	2	20%
Oduro Kennedy	4	40%
Osei Desmond	3	30%
Ansah Isaac	0	0%

Darko Felix	1	10%
Adubea Gifty	4	40%
Adzido Salome	0	0%
Akakpo Veronica	4	40%
Ampoma Ruth	0	0%
Ama Joyce	4	40%
Kyerewa Adelaide	0	0%
Lartebea Felicia	3	30%

Due to low performance of students the researcher decided to research into why that problem and what caused the problem. Also, find the intervention to help remedy the identified problem.

Intervention

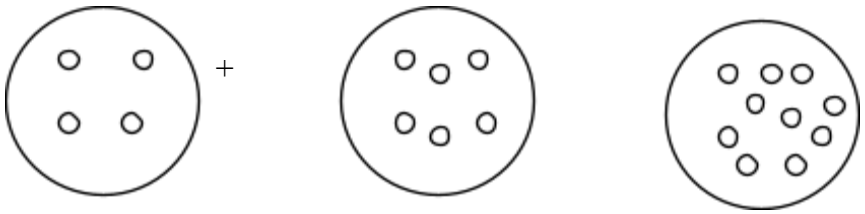
The researcher arranged with pupils and looked for a series of real objects including bottles tops and sticks and took pupils through activities which is geared towards the learning of the basic concepts in mathematics.

First addition

Set formation

Add 4 + 6

From two sets with the bottle tops, put each set in a different container. Count the elements in each set, let pupils discover that the sum of the two sets is 10. Put pupils into groups and allow them to repeat what you have just done.



Use of bundles of sticks in set formation

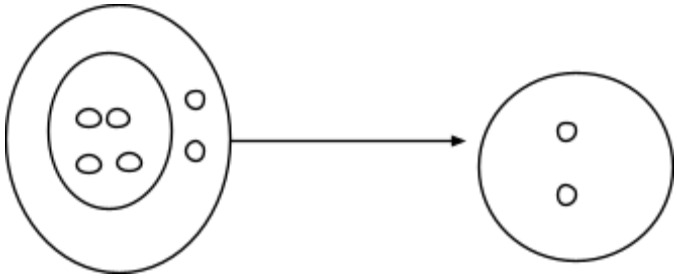
Add 3 + 4

Call another one to count 4 sticks. Allow each pupil to put the sticks they have in the two chalk box. One into the box labeled A and the other with the sticks in the box labeled B, bring the sticks together and add.

Subtraction

Subtract 6 – 4

Call one pupil to count 6 bottles tops into the box labeled A. Call another pupil to take 4 bottle tops from the box labeled A, that is, the box which contains 6 bottle tops and then put the 4 bottle in the box labeled B, call another one to count the number of bottle tops in the box A. It will be discovered that two bottle tops is left in box A.

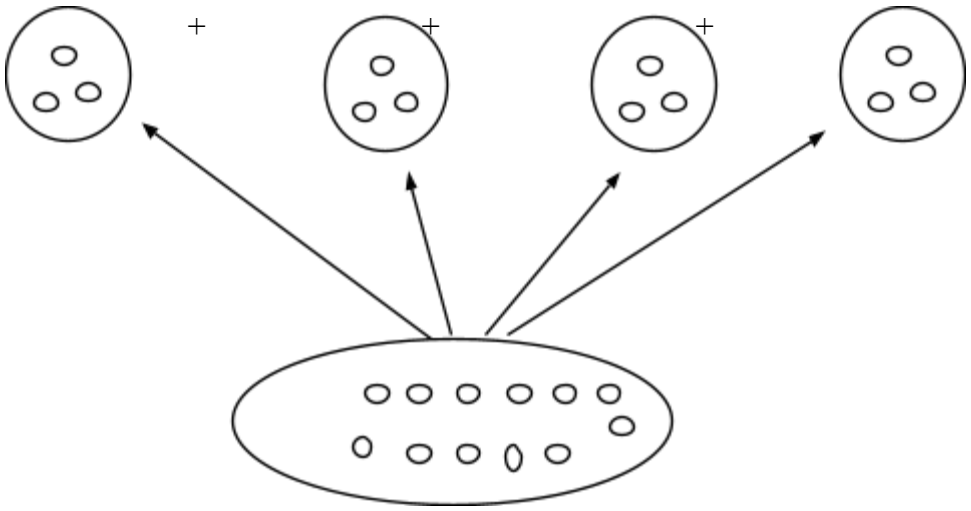


Multiplication

Set of sets

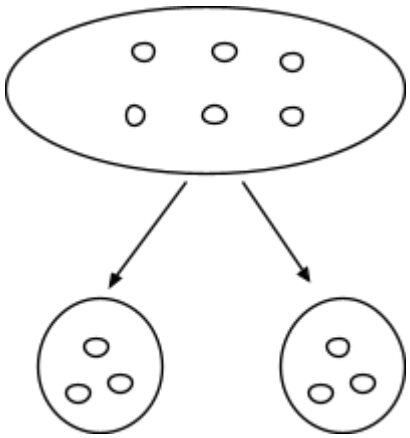
Multiplication is repeated addition

Put four boxes with labels A, B, C and D. Multiply 3 x 4. Call four pupils to count 3 bottle tops into each of the 4 boxes. Call one pupil to put all the bottle tops in the boxes on the table and then count them. It would be discovered that 12 bottle tops in the sum of the bottle tops in the four boxes.



Division : Sharing

Consider 6/2, this means we are sharing 6 bottle tops to two pupils. Guide pupils to pick in turns until all the items are finished. Then you ask how many each had or got. The answer each had is the three bottle tops each.



Post – intervention

After the use of the intervention, thus, the use of the real objects and the use of activity, pupils were given the same questions to angers and to the surprise of the researcher almost all the students got everything correct. Examples of the questions.

1. 125 + 250 =
2. 392 = ____ + ____ + ____
3. 35 – 23 =

4. 8 ÷ 0 =
5. 45 x 0 =

Below is how they answered the questions.

1. 125 + 250 = 375
2. 392 = 300 + 90 + 2
3. 35 – 23 = 12
4. 8 ÷ 0 = 0
5. 45 x 0 = 0

The marks obtained after the use of the intervention.

Table 3

The marks obtained by pupils after the intervention

Pupils	Marks	Percentage (%)
Amissah Cusmos	10	100%
Debrah Isaac	7	70%
Mireku Fred	8	80%
Oduro Evans	9	90%
Oduro Kennedy	10	100%
Osei Desmond	8	80%
Ansah Isaac	6	60%
Adubea Gifty	10	100%
Adzido Salome	7	70%
Akakpo Veronica	10	10%

Ampoma Ruth	7	70%
Ama Joyce	10	100%
Kyerewa Adelaide	6	60%
Lartebea Felicia	9	90%

This means the performances of the pupils have improved. This is an indication that there is a fear for the subject because the barrier of negative misunderstanding if basic concepts in mathematics has been broken.

I confidently say that from this, pupils poor attitude towards mathematics have been corrected through the use of motivation and real objects.

CHAPTER FOUR

DATA PRESENTATION ANALYSIS

Introduction

This deals with the data collection, presentation of the data and analyzing the data. Data from Heineman English Dictionary for Ghana is "facts and information". The researcher collected information facts through the instrumentation of questionnaire and test from a group of pupils. The data is presented in a table for easy understanding and presentation. Three classes were selected for the administration of questionnaire.

It involves one primary school classes (class five) and two classes in the junior high school (form 1 and 2). This is because pupils in the junior high school also have the same problem. he study shows that a child who does not understand the basic concepts in mathematics can not do well in mathematics and hence loss of interest in the subject entirely.

Table 4

Ideal time for teaching mathematics

Time	No. of Pupils	Percentage (%)
Morning	24	80
Afternoon	6	20
Total	30	100

Students identify morning as the ideal time for teaching and learning of mathematics. From the table, 24 pupils representing 80% of the pupils responded to the morning section as the appropriate time for teaching mathematics, while 6 pupils representing 20% of pupils chose the afternoon section as the appropriate time for the teaching of mathematics. A follow up on why, they chose morning reveals that their mind will be fresh, that is, they had not done anything that will be demand critical thinking hence their mind is fresh and absorption of concepts is very fast.

Table 5

Ideal time for teaching mathematics

Time	No. of Pupils	Percentage (%)
Morning	19	63.33
Afternoon	11	36.67
Total	30	100

Unstructured interview with teachers brought to light that pupils do not learn mathematics at their free times, however, the response from the question proofed otherwise. That is 19 pupils

representing 63.33% say yes they learn mathematics at their home on their own and 11 pupils representing 35.66%. Also a further investigation shows that, they study mathematics by looking through previously solved mathematics without working the problem itself.

Table 6

Challenges of Pupils

Challenges	No. of Pupils	Percentage (%)
I do not understand the basic concept of mathematics	12	40
The teacher moves too fast	6	20
The teacher is too strict	4	13.33
I am afraid to make contribution	8	26.67
Total	30	100

An attempt to unearth challenges confronting student in mathematics shows two major problems:

i. Lack of understanding of the basic mathematical concepts.

ii. Fear of students to make contribution during mathematics lessons. The table makes clearly illustrates that 12 pupils out of 30 are not familiar with the basic concept in mathematics.8 pupils are afraid to make contribution in a mathematics lesson and then 4 pupils and 6 pupils who say teachers are too strict and moves too fast respectively.

Evaluation of students' opinion on certain assertions made on mathematics subjects indicated.

i. Mathematics takes a lot of time to study.

ii. Students fail in mathematics more than any other subject.

A follow up as to why students fail mathematics more than other subjects reveal that at the primary school level some teachers do not like teaching the subject. A Junior High pupil said "I developed interest in mathematics at their junior high school level because our teacher is punctual''. He further said that at the primary school the time table is not strictly followed and so mathematics can be taught sometime twice a week.

Table 7

Perception about mathematics

Perception	No. of Pupils	Percentage (%)
Very difficult	6	20
Difficult	8	26.67
Normal	12	40
Easy	4	13.33

Total	30	100

On the average pupils say mathematics is not difficult but their problem is that they do not do revision after, the lesson is taught. A follow up about their perception about the subject shows that the subject is easy when he is teaching but in examination it is always difficult to lack practice.

Table 8

Enjoying teaching/learning of mathematics

Time	No. of Pupils	Percentage (%)
Yes	14	46.67
No	16	53.33
Total	30	100

The difference between those who enjoy the subject and those who do not enjoy the subject is only two. This shows that the pupils like the teaching of the subject but because the basic concept of the subject is lacking they find learning on their own rather a difficult task.

Summary of the chapter

This chapter looked at the responses of questionnaires from respondent and unstructured interviews that follow up the questionnaire to gather more information or cater for the lapses the questionnaire left. The data is presented in five tables and each response was well organized in simple and plan language for every group of people to read and understand. Some of the issues addressed include among others challenges time for mathematics studies or teaching or learning.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This is the final chapter of the project and it summarized the other chapters of the research mostly the methodology used and the problem (thus, the research problem). It further talks about the summary, conclusion and recommendations.

Summary of the study

This project is about pupils who have negative attitudes towards the teaching and learning of mathematics at Abompe Presbyterian Primary specifically basic three. The researcher used the

instrumentation of questionnaire, test and interview to gather information about the problem. The data was analysed and conclusions, recommendations are made based on the data the researcher gathered. The problem is as a result of pupils' inability to understand basic concepts in mathematics. The researcher used real objects and activity as the intervention to curb the problem. After the use of the intervention, the pupils' interest towards the subject has improved. The pupils were able to solve the very questions that they were unable to solve. Most of them now try to solve questions using real objects and semi – concrete means. Also, they now try to solve mathematical problem on their own.

Conclusions

The researcher researched into how to improve the negative attitudes of pupils towards the study of mathematics with the use of activity. He concluded on the following causes as the negative causes towards the study of mathematics.

Lack of teaching and learning materials in teaching basic concepts of mathematics, lack of some essential materials which cannot be found in the environment but are very important to the teaching of the subject. The attitude of teachers towards pupils who are unable to perform well are and also the attitude of teachers in the primary school towards the teaching of mathematics. To add to this, teachers should be resourceful to get the first hand information of whatever they want to teach in order to perform effectively.

Recommendations

This part talks about the suggestions the researcher made as a result of how the identified problem was solve and the discoveries made during the data collection and throughout the whole research.

In educational researches, these recommendations are made to stakeholder and any concern with education. Below are some suggestions the researcher gave.

Teachers must motivate students and create a suitable learning environment that increases students participation in mathematics lessons.

Students must be made to recognize that mathematics is indeed is not a difficult but demands constant practice to master basic concepts and skills required to perform better in mathematics examination.

Mathematics lessons should not be always in the class room. There is the need for a need for a mathematics laboratory to enable students gain in –depth understanding of mathematical concepts to real live situation rather than learning in abstract.

Students should be challenged not to be satisfied with a mere pass average score in mathematics but to strive for higher score in the subject. This requires continues encouragement from teachers parent and other stakeholders of education.

In addition, students must be made to understand that one's interest in a subject is good but it is not good enough to make the person excel. It requires extra effort to achieve excellence in the subject and that the brilliant pupils should do the same.

As much as possible mathematics lesson should be in the morning when the brain totally refreshed. Student must develop regular study habits by attempting to do assignments and exercises in order to master the knowledge when faced with difficulty in learning mathematics.

Teachers must encourage students to contribute freely during lesson delivery without any fear. Teachers should also try as much as possible not insult pupils if they do not give reasonable answers. Teachers should constantly remind students of the importance of mathematics ginger them to put in more effort.

There should also be subject teaching at the upper primary and if possible lower primary so that people who are good in the subject can handle it from the beginning to build in the pupils desirable attitudes towards the subject.

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APPENDICES

Appendix A

Some of the question are as follows;

1. What time of the day is appropriate for maths lessons? Morning [ ] Afternoon [ ]

2. What challenges do you face in maths lessons?

   [ ] I don't understand the basic concepts in mathematics.

   [ ] The teacher moves too fast when teaching.

   [ ] The teacher is too strict in lesson delivery.

   [ ] I am afraid to make contribution.

3. Do you solve mathematics problems at free time? Yes [ ] No [ ]

4. In general, how to you see or perceive maths?

   very difficult [ ] difficult [ ] normal [ ] easy [ ]

5. Do you enjoy maths lessons the same way as other subjects? Yes [ ] No [ ]