UNIVERSITY OF CAPE COAST

THE ATTITUDE OF BASIC SCHOOL MATHEMATICS TEACHERS TOWARDS INSTRUCTIONAL SUPERVISION IN CAPE COAST METROPOLIS

BY

PATRICK ABAIDOO

Thesis submitted to the Department of Basic Education of the College of Education Studies, University of Cape Coast, in partial fulfilment of the requirements for award of Master of Philosophy Degree in Basic Education

JUNE 2016

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature ……Date ……
Name: ……..

Supervisors' Declaration

We hereby declare that the preparation and the presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature……Date……
Name: ……..

Co-Supervisor's Signature…….Date……
Name: ……

ABSTRACT

The study aimed at investigating the attitude of basic school mathematics teachers towards instructional supervision in Cape Coast Metropolis. The population for the study comprised the basic school mathematics teachers, headteachers and circuit supervisors in the Cape Coast Metropolis. A total sample size of one hundred ninety-eight (198) was used. This was made up of 168 teachers, 24 headteachers and 6 circuit supervisors. The sampling techniques employed to select the schools and the respondents for the study were stratified and simple random sampling methods. The stratified and simple random sampling were used to select the schools from the various school types (below average, average and above average achieving schools) while purposive sampling was used to select the teachers, the headteachers and the circuit supervisors. The instrument used for the study was questionnaire. One set of questionnaire was for teachers and the other set was for headteachers and circuit supervisors. A reliability coefficient of 0.87 and 0.81 were obtained for teachers and headteachers and circuit supervisors questionnaires respectively using the Cronbach's Alpha. The statistical tools used for the data analysis were descriptive statistics such as mean, standard deviation and frequency counts and "the One-way ANOVA inferential statistics". The study found that basic school mathematics teachers had positive attitude towards supervision in all the various school types. Again it was found that attitudes of teachers in the average schools were better than the above-average schools. It is therefore recommended that supervision should be continued and be geared towards professional development of teachers so as to help improve and sustain their positive attitudes.

ACKNOWLEDGEMENTS

I am very grateful to my supervisors, Prof. Ernest Kofi Davis and Dr. Fiifi Mensah under whose direction and guidance this work has been a reality.

I would sincerely like to express my heartfelt gratitude to them for their patience, in-depth constructive criticism and valuable suggestions, which have immensely contributed to the success of this work. God richly bless you.

I am particularly thankful to Dr. Nana Ama Kum Browne Kluche (Mrs.), and Mr. Clement Abaidoo for their support and encouragement in making this thesis possible.

I wish to also express my sincere gratitude to the teachers, headteachers and circuit supervisors who participated in this study for their support and co-operation.

I finally wish to express my profound thanks to my headteacher, Mr. Victor Sam Quainoo, staff of Wusorkrom D/A JHS and the staff of St Patrick's SHS, for their support and inspiration.

DEDICATION

To my parents, Mr. E. K. Abaidoo and Madam Georgina Bonney.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER ONE

INTRODUCTION

Background to the Study

Mathematics is one of the most important subjects in the school curriculum. It is a requirement for a Ghanaian student to gain admission from one level of education to another. For example mathematics is considered before a student is admitted into senior high school and the tertiary institution in Ghana. Furthermore, mathematics is the driving force towards technological advancement. Its usage permeates most fields of study including Physics, Chemistry, Geography, Engineering, Biology and Medicine. It is accepted universally that a strong foundation in mathematics is a pre-requisite for many careers and professions in today rapidly growing technological society.

According to Fuson, Carroll and Drueck (2000) in order to be prepared for potential success in the world today and in the future, knowledge of mathematics and science is important. But the irony is that, the achievement in the subject at the various levels has been generally low over years as compared with the achievement in other subject areas such as English language, Science, and Social Studies in Ghana (Ghana Education Service, 2012). There is evidence for a decreasing trend in average mathematics performance (especially on task that require deep understanding of

mathematics), accompanied by a significant decline of students' interest in mathematics during the course of the high school (Riordan & Noyce, 2001).

The implication for any country especially a developing country like Ghana is that, progress in industrial and technological development calls for a workforce that is well grounded in mathematics. However, the performance of students in mathematics has generally not been good both locally and internationally.

Locally, student performance in Mathematics in the Basic Education Certificate Examination in Central Region has not been good for about three consecutive years as compared to the other subject areas. In 2009 the percentage pass in mathematics was 48.4%, 49.3% in 2010 and 49.7% in 2011. Although an increasing trend is observed, percentage pass in mathematics had always been low as compared to other subjects. This has drawn the attention of both written and electronic media in the country. The situation is not different in the Cape Coast Metropolis in the Central Region of Ghana. In 2009 the percentage pass in the Metropolis was 39.7%, 50.5% in 2010 and 40.5% in 2011(Ghana Education Service Cape Coast Metropolitan Educational Directorate, 2012).

Internationally, the performance of Ghanaian students has not been as good as it was expected. For example, Ghanaian basic school students' performance in the Trend in International Mathematics and Science Study (TIMSS) has not been good. Ghana placed 45th out of 46 participating countries in the 2003 TIMSS examination at grade eight levels (JHS 2). The results indicated that the average percentage correct answer on all the mathematics test items for each participating Ghanaian student was 15%. The

overall mean mathematics achievement score for Ghanaian student was 276, far below the international average of 467; Ghana ranked 46th on the international benchmark for mathematics (Ministry of Education Youth and Sports 2004). Similarly, in TIMSS 2007, Ghanaian students' overall mean achievement was 306, which was also far below international average of 500. Ghana ranked 47th among 50 participating countries (Anamuah- Mensah, Mereku & Ampiah, 2008).

Attitude and supervision are some of the variables that have been identified as having the capacity to influence students' performance. Attitude is a construct which has been defined differently by different authors. Eggen and Kauchak (2001), for instance, define an attitude as psychological tendency that is expressed by evaluating a particular entity with favour or disfavour. Triandi (1971) defines attitudes as involving what people think about, and feel about, and how they would like to behave towards an attitude object. Attitudes are generally regarded as having been learnt, this predispose an individual to action that has some degree of consistency and can be evaluated as either positive or negative (Fishbein & Ajzen, 2010). Nisbet and Warren (1997), linked actions to beliefs and for each belief, individual would have corresponding attitudes. Attitudes have been linked to action and can be categorised according to their focus. Thus behavioural attitudes indicate a person's judgement of performing the behaviour as good or bad or that the person was in favour of or against performing the behaviour. Clearly, other things being equal, the more favourable a person's attitudes is toward a behaviour, the more likely the person would intend to perform that behaviour.

Again, attitude could be defined as a consistent tendency to react in particular way- often positively or negatively- towards any matter. Attitude poses both cognitive and emotional components.

"Attitudes are important in educational psychology because they strongly influence social thought Fazio and Roskes (1994), the way individuals think about and process social information". According to Eggen and Kauchak (2001), positive teachers' attitudes are fundamental to effective teaching and learning.

In this thesis, attitude is viewed from the perspective of Triandi's (1971). This is because Trandi's (1971) perspective of attitude links the attitude objects to thinking and behaviour. Thus, this definition takes into consideration both the cognitive and the affective aspect of attitude object.

Literature suggests that the attitude of teacher towards supervise on and the kind of supervision received by teacher affects the performance of the students (Etsey, 2005). A growing body of literature has shown that teachers' attitudes play a significant role in the formation of learner's attitudes (Laridon, Mosimege & Mogari, 2005). Other researchers have found that teachers' attitudes towards supervision play a significant role in students' performance, including mathematics (Martin, Loch, Cooley, Dexter & Vidakovi, 2009).

The importance of supervision in schools cannot be overemphasized because it is a process that contributes to the performance of students and teachers. Studies supporting this assertion include Neagley and Evans (2004) who defined supervision as any service that eventually results in improving instruction and learning curriculum. Such supervision will go a long way to inform the programmes of the mathematics teachers. Figueroa (2004) also

mentioned that supervision involves motivating the teachers to explore new instructional strategies. Figueroa (2004) reported a significant agreement between teachers' attitude towards actual and desired practices of supervision of instruction and their instructional strategies in pedagogical and curriculum context. From the perspective of Neagley and Evans (2004), supervision should enhance the professional development of the mathematics teacher.

Institutionalisation of proper and appropriate supervision (clinical supervision) promotes positive attitude of teachers towards supervision (Sergiovanni & Starrat, 2002). On the other hand, according to Igwe (2001), to supervise means to direct, oversee, guide or to make sure that expected standards are met. Thus, supervision in a school implies the process of ensuring that principles, rules, regulations and methods prescribed for purposes of implementing and achieving the objectives of education are effectively carried out. Supervision therefore involves the use of expert knowledge and experiences to oversee evaluate and coordinate the process of improving teaching and learning activities in schools.

Furthermore, supervision could be seen as an interaction involving some kind of established relationship between and among people, such that people influence people. Such interactions are greatly influenced by a predetermined programme of instruction. In this regard, and according to Armstrong (2006), the systematisation of the interaction of those responsible for operating within the structure of administration is called supervision. Thus, the supervisor is expected in the course of his duty, to initiate several activities that will lead to a successful merging of these two contexts in order to achieve harmony and satisfaction

Statement of the Problem

The performance of students in some of the basic schools in Cape Coast Metropolis has been high for about three consecutive years, from 2008 to 2011

In 2008 the percentage pass in mathematics in some schools A, B and C were 62.5%, 80% and 47% respectively. Furthermore, the situation was different in 2009 and 2010. For example in 2010 schools A, B and C had 66.67%, 75% and 100% respectively and many more whiles the performance of other schools have been consistently low within the same period for example in same year schools X, Y and Z had 12%, 5.8% and 27.27% respectively (GES Cape Coast Metropolitan Education Directorate, 2012).

In the study of attitude of teachers toward supervision and students' performance, Etsey (2005) identified effective supervision as one of the main factors that affect performance of students. The study did not report on the attitude of basic school mathematics teachers' towards instructional supervision. And to the best of my knowledge, study is yet to be carried out or published on this. It is against this background of paucity of research on attitude of basic school mathematics teachers' towards supervision that this study is designed to explore the attitude of basic school mathematics teachers towards instructional supervision.

Purpose of Study

The purpose of the study is to explore the attitude of basic school mathematics teachers towards supervision in the Cape Coast Metropolis. It also seeks to investigate how instructional supervision of mathematics teaching and learning at the basic school level is done.

Research Questions:

The study was guided by the following research questions

1. What are the attitudes of basic school mathematics teachers toward instructional supervision?
2. What are the attitudes of basic school mathematics teachers toward instructional supervision in the above average, average and below average achieving basic schools?
3. What goes into instructional supervision mathematics teaching in the above average, average and below average achieving schools?

Research Hypothesis:

There is no significant difference in the attitudes of basic school mathematics teachers toward instructional supervision in above average, average and below average achieving schools.

Significance of the Study

The Cape Coast Metropolis has serious teacher attitude towards supervision that militate against the students' performance in mathematics (GES, 2012). The study will, therefore, sensitise mathematic teachers on the benefit of instructional supervision. Based on the recommendations from the study, basic school mathematics teachers may realize the benefit that accrue to instructional supervision and will therefore make strenuous effort to avail themselves for supervision.

It will also serve as a useful resource to educational administrators, the government and Ghana Education Service to design appropriate policies that will modify the perception about supervision and assist the basic school mathematics teachers attain optimum education success.

To researchers, the findings of the study will make it feasible for similar studies to be carried in other parts of the country. The move will supplement government effort at improving supervision in the basic school in the country. In addition it will add to the existing literature and also provide information for further research. Since the study is carried on attitude of particular group of teachers in basic schools (mathematics teachers) towards supervision. The finding will serve as authentic literature for the researchers.

The report from what goes into instructional supervision will aid teachers and supervisors in general to insist on effective instructional supervision through clinical supervision. Therefore circuit supervisors and headteachers will institutionalize proper and appropriate instructional supervision in their programmes for especially basic school mathematics teachers. Ultimately, this should impact the academic performance of the students in mathematics in more positive way.

Delimitation of the Study

The study was delimited to attitudes of basic school mathematics teacher towards supervision. The study focused on attitude because research has indicated that unless one has positive attitude towards what he/she is doing or receiving, his/her performance will probably not represent the best (Figueroa, 2004).

Secondly, the scope of the study was delimited to supervision that was received by basic school mathematics teachers, because supervision is to assist individuals to improve their performance.

This was confined to the Central Region of Ghana. It involved only the basic School mathematics teacher in the Cape Coast Metropolis. The scope of the

problem was limited to the attitude towards supervision such as what goes into supervision at the basic level, the type of attitude supervisor carried out in the basic schools and attitudes towards the supervision specifically on the side of basic school mathematics teacher.

Limitations

The study made use of the descriptive survey design. Though this research method is probably one of the best that the social scientist could use to collect original data for studying a population that is large to observe directly and make generalization, its major limitation is the over reliance of structured items as found in the questionnaire. Some of the items in the questionnaire used to collect data for this study were fixed set of items, with predetermined responses and therefore the respondents might not be given adequate opportunity to express their own views. The problem stated above could affect the findings of the study. To reduce such effect some open ended items were included in the instruments.

Organization of the Study

Chapter Two focuses on related literature. The themes covered include the definition and characteristics of attitude, the teachers' professional background, the meaning of relevance of quality instructional supervision of teachers. Benefit of effective instructional supervision in basic schools and factors that inhibit effectiveness of supervising basic schools.

The Third chapter focuses on the research design and the rationale for the design used. In addition, it indicates the weakness and strength of the research design to obtain and analyse the data for the study. Specifically, it captures the population, sample and sampling procedure, the research

instrument, the piloting procedure, the date collection procedure and the data analysis have been discussed.

The chapter four presents the results and discussion of the data.

The chapter five is the final part of the study. It gives the summary of the study and draws conclusion to the key findings of the study. It also gives recommendations based on the results of the data.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Introduction

The chapter discusses what other authors have reported on mathematics teachers' attitude towards instructional supervision in the classroom. Information collected from books, journals and magazines will be discussed.

This chapter therefore, presents definitions of the concept of attitude and supervision according to different authors and then discusses the attitude of basic school mathematics teachers towards instructional supervision. The chapter also presents some models of supervisory behaviour.

The Concept of Attitude

The study of attitude has become an accepted part of studies in education. Thus, attitude toward various subjects of study and the effects of attitudes on education had all been studied. Knowledge about the concept of attitude is very vital in human endeavour and behaviour. According to Aiken (2002), an attitude is an internal disposition to evaluate in positive or negative terms of an object which is accompanied by affective, cognitive and behavioural responses. The development of positive attitudes toward supervision is a goal for many educational systems because they are seen as a requisite for teacher development. It could be argued that attitude play a critical role in an individual's behaviour since attitude affects essentially

everything that people do, or gives a reflection of what people stand for. How people see the world and how they come to accept and integrate new experiences cannot be disassociated from their attitude (Armstrong, 2006). Another study has identified attitude to be one of the obstacles or impediments to success or failure in mathematics performance and supervision (Aiken, Clarke & Sloame, 2001). To organise supervision for the basic school mathematics teacher, it would be important to ascertain the attitude of the teachers towards supervision especially in the area of mathematics. According to Glatthorn (2007), the major factor which influences the students' performance is the teacher. The teacher must have positive attitude both towards mathematics supervision to make the supervisory programme meaningful and successful. Teachers need to have favourable attitude towards relevant developmental educational supervision to be able to impart positively on the students they teach (Schwartz, 2000).

The literature from Reepen and Barr (2010) has suggested that there is a positive relationship between teachers' attitudes toward supervision and teacher development. Dixon (2005) maintained that attitudes are generally regarded as having been learnt. This predisposes an individual to action that has some degree of consistency. She added that experiences of teachers influence the formation of attitudes and these in turn influence their classroom practices and supervision.

Attitude can be regarded as the description of how people feel about or react to other people, places, events, ideas or things (Kubiszyn & Borich, 2013). Thus, attitude is a manner of acting, feeling or thinking that shows one's disposition or opinion. It is really how one responds to and approaches

things. Of all the skills that one develops it is his/her attitude that influences them. A bad attitude does not take one far in life.

Allport (1996) defined attitude as a mental and neural state of readiness organised through experience exerting a directive or dynamic influence upon the individual's response to all objects and situations with which it is related. Allport's definition explains that, attitude is a state of mind of readiness which leads an individual or one to perceive people and things surrounding him/her in a particular way and that direct how that individual responds to the situation or object related to it. Moreover, attitudes are not innate they are learned, developed and organised through experience.

Furthermore, attitudes are dynamic and for that matter they are therefore subject to change, Dube (1990) with similar opinion opined that an individual's attitude does not develop in a vacuum, but the group affiliations of the individual helps to determine the formation of his/her attitude. Thus, the type of group that one affiliates to would influence his/her attitude. That is, if one affiliates to a group of teachers noted for bad or negative attitude then such an individual is likely to develop the same attitude. Nitko (2000) sees attitude as characteristics of a person that describe his positive and negative feelings toward particular objects, situations, institutions, persons or ideas.

That is, attitude differs in both direction and intensity. In terms of direction one's attitude toward an object or person may be positive or negative, favourable or unfavourable. In terms of intensity it refers to the strength of the feeling or the degree of the magnitude.

Attitude is therefore seen as predisposition to respond favourably or unfavourably toward a person, thing, event, place, idea or situation. In other

words attitudes are thoughts and feelings that encourage one to act as though he/she dislikes or like something. For instance, like or dislike for mathematics supervision. A person's attitude determines his behaviour and the success of the programme. In this regard, favourable attitudes of mathematics teachers toward supervision, school to mention but a few should be encouraged in order to build a good foundation for the future. Reepen and Bar (2010) stated that attitude is relative enduring orientations that individuals develop toward various subjects and issues they encounter during their lives and which they express verbally as opinions and issues. Thus, attitudes are therefore contained elements of beliefs and values as well as varying degree of factual knowledge.

Attitude is a tendency to make a response of either avoidance or approach to an object or group of objects. Thus, the way one approaches an object or avoids it is determined by his\her attitude towards that object. For the purpose of this study the concept and definition of attitude by Nitko (2000) and Triandis (1971) were adopted. These were preferred because they talk about the characteristics of a person that describe his/her positive or negative feelings toward particular objects, situations, persons or ideas and also talk about the affective, cognitive and behavioural responses.

From the discussion the following features were highlighted. That is, attitude refers to beliefs, manner of feeling, reacting or thinking that shows one's disposition or opinion. Attitude describes one's positive or negative feeling to towards objects or activities. Attitudes are learned, and a particular group one is affiliated determines the formation of his/her attitude. However, since learned they are therefore subject to change (Allport, 1996).

Judging from the foregoing definitions and concept of attitudes one may say that every individual reacts to his environment, object, people or subject in terms of beliefs, values, interests, opinion and sentiments. However, there are other factors such as the decisions supervisors make, and the strategies they use, also influence the attitude of teachers towards supervision (Glanz, 2000). It is often declared that the attitude of a teacher could influence their actions in the classroom as well as towards instructional supervision, which becomes critical to student learning. In other words, a teacher's attitude regarding mathematics is relative to attitudes towards the teaching of mathematics and supervision, which in turn, has a powerful impact on the atmosphere for supervisory activities (Edmunds & Edmunds, 2008).

In addition, attitudes of teachers and perception they have towards supervision are complexly affected by the beliefs, emotions, social context, and content knowledge of the teacher. Teachers' beliefs, or emotions, are acknowledged as underlying constructs which affect their attitude; yet, it is important for the supervisor to create friendly atmosphere for the supervision practices to be carried out (Glatthorn, 2007). Although pre-services mathematics teachers bring well-established views of teaching to their teacher education programs, Bolton (2010) claimed that it is possible for supervisors to amend teachers' views. Pre –service teachers portrayed the learning of teachers as a negotiation and interactive process rather than as one that is predetermined by supervisor's prior experiences. Therefore, this presumes that there is possibility for change to take place with prospective teachers' attitudes towards supervision.

Going into the classroom, supervisors have to stop viewing teachers as not doers and begin to see themselves as the agents of positive desired change. It becomes crucial that supervisors guide and empower the mathematics teachers, encouraging them to rethink of what they can do to bring about desired outcomes for their students, specifically during supervision (Gibson et al, 1999). Their knowledge, beliefs, and attitudes are intertwined and demonstrated through their practice, that is, the pedagogical and curricular knowledge. Supervisors have to be more than just willing; they have to be purposeful in engaging basic school mathematics teachers in supervision. In this way, we are constantly reminded to encourage a culture of thinking and rethinking, and constructing and reconstructing the processes and ways of thinking during the preparation of supervision.

Thus, it has been widely reported that teachers' beliefs also influence their classroom practices and their attitude towards supervision.

Research evidence suggests that teachers' beliefs relate to their classroom practices. Dube (1990) and Fraser (2000), attest that a better understanding of teachers' belief systems or conceptual base will significantly contribute to enhancing educational effectiveness.

Harris (1985) noted that the beliefs teachers hold influence their perceptions, conceptions and judgements which in turn affect their behaviour and attitude towards the supervision.

Hammond, Ingalls, and Lawrence (2003) opined that beliefs play an important role in shaping teachers' characteristic patterns of instructional behaviour. Wentzel (1997) notes the following key belief components of the mathematics teachers. That is, the teachers' view or conception of the nature

of mathematics, view on the nature of supervision of mathematics teaching and the view of the process of learning mathematics.

These beliefs or views affect classroom teachers' instructional behaviour. These views also determine individuals' attitudes toward supervision. Hickey (1997) confirmed a strong influence of beliefs about the nature of mathematics supervision and teaching styles among basic school teachers.

Teachers' beliefs and attitudes influence their teaching and pupils' achievement in mathematics. In view of this, Riodan and Noyce (2001) suggested that to teach mathematics effectively teachers must gain competence and understanding of the subject. They therefore recommend teacher development services and regular supervision for teachers. Langton, Robbins and Judge (2011) attest to the view that teachers' attitude and belief influence actions in the classroom and how they perceive supervision. Fuson et al (2000) is of a similar view by stating that, teachers' beliefs about mathematics influence how they teach and therefore the learning activities pupils will experience. However supervisors have the ability to shape these believe through proper supervision to yield positive result in the organisation.

Considering the beliefs of mathematics teachers, Erickson and Gutierrez (2002) contended that, teachers' beliefs about their abilities in mathematics determine their achievement and hence affects their attitude. Besides, teachers' attributions for achieving objectives and failure in mathematics may be influenced by the attitude they are held.

From the discussion it is clear that teachers' views or conceptions of the nature of supervision, teaching and learning of mathematics influence their attitude towards supervision practices and behaviour.

Definition of Supervision

Supervision has been given many interpretations by various authorities who seem to agree to the view that it is a service which is directed towards improving the factors that go into ensuring growth and development in the educational process. Supervision may be seen as a positive force for programme improvement. Cogan (1973) contends that supervision is primarily concerned action taken to ensure the achievement of instructional objectives. It is a consciously planned programme for the improvement and consideration of instructions in the schools. Wile and Lovell (1975) described supervision as consisting of all activities leading to the improvement of the instruction and curriculum development.

According to Marquez and Kean (2002), supervision is a process of directing and supporting staff so that, they effectively perform their duties.

This implies that the quality of work of staff is an establishment enhanced largely through the guidance and support they received as a result of supervisory activities that the organization has put in place.

Sergiovanni and Starrat (2002) defined supervision as a "set of activities and role specifications designed to influence instruction". Moreover, Sergiovanni and Starrat (2002), supervision of instruction is directed towards both maintaining and improving the teaching-learning processes of the school. Wiles and Lovell (1975) have defined supervision of instruction as "an additional behaviour system formally provided by the organization for the

purpose of interacting with the teaching behaviour system in such a way as to maintain, change and improve the provision and actualization of learning opportunities for pupils". Furthermore, Glickman, Gordon, and Ross Gordon (2009) also see supervision as related directly to helping teachers with instruction, which consequently affects the teacher attitude. Thus, in the education sector, the support teachers receive from supervision does not only enhance their competence and development, but it also benefits the students who are direct beneficiaries of the teaching and learning. Neagley and Evans (2004) contend that supervision is a positive dynamic and democratic action designed to improve instruction through the continued growth of learners, teachers, supervisors and administrators. Riordan and Noyce (2001) view educational supervision as collective effort of some personnel whose duty is to put in place some activities to bring about quality performance. Mankoe (2002) considers supervision as a function whereby a person works with others to contribute to the improvement of teaching and learning so as to implement the school curriculum. School supervision therefore is an integral part of education which seeks to provide school teachers with guidance and the support they require in teaching and in enabling children to learn. This also requires provision of support to the supervisors such as offering training and giving incentives like transport to perform supervisory role.

From all these definitions it can be seen that supervision refers to the improvement of instruction and also to teacher's growth so as to improve pupils' learning activities. Wiles and Lovell (1975) stated that teachers may view supervision differently. One may view supervision as a positive force for programme improvement while another one may view it as a threat to the

teacher's individuality. A third may view it as a source of assistance and support.

In Ghana Educational Service, supervision has taken different shape in bringing about effective teaching and learning in schools. Ministry of Education (MOE) (2002) puts supervision into two main types namely; traditional supervision and modern supervision.

Types of Supervision

The traditional supervision

This image of supervision stands for dictatorial type of supervision. Sergiovanni and Starrat (2002) describe this image as being autocratic in nature. The supervisor dictates what is to be taught, how and when it should be taught. In this image the teacher must follow what the supervisor does.

There are clear lines of superordinate and subordinate. The traditional type of supervision a situation where the supervisors is focus and the supervisee is just a recipient who had nothing to offer since the former is all-knowing. The traditional concept of supervision is authoritarian and rigid and does not include the element of professional guidance to teachers. The teachers are viewed as 'appendages and subordinates'. This image of supervision is not favoured by many teachers because it is oppressive and does not bring in the human relations element. There is no democracy in this image. It is prescriptive in nature. Indeed this style is coercive; it therefore demoralises the teacher and generates unfavourable attitude for teachers towards supervision.

Again, the supervisor observes the classroom teaching, and counsels the teacher in order to help him or her to improve upon the teaching skills.

After the observation, the supervisor meets the teacher and gives him or her suggestions. The supervisory conference then tends towards a pattern in which the supervisor talks while the teacher listens.

This type of supervision is unproductive because it stresses teacher defects, presenting the supervisor as superior to the supervisee (MOE, 2002). Thus, traditional supervision tends to produce a teacher who is incapable of performing on his own unless directed by someone. Traditional type supervision does not highlight the importance of a teacher and the teacher's capabilities as an instructor of the learning programme. They lack trust and faith in the teacher. This view gave rise to what Sergiovanni and Starrat (2002) refer to as revisionist or unlighted supervision. This unlighted image of supervision is called the human resources image of supervision.

This image can be seen in most supervisory programmes in the schools. However, it has been criticised for being too permissive and focusing more on winning friends than the improvement of instruction. It is still widely advocated and practised today although its support has diminished. Human relations promised much but delivered little. In this case teachers who are in deficit of certain concept will definitely have negative attitude towards this form of supervision.

This procedure confirms the Glickman et al (2009) thinking that the exercise of control that characterized traditional supervision of teachers should give way to one that encourages teachers to set their own standards and improve upon their work.

Clinical supervision

This is another model of supervision; where supervision emphasizes teacher growth and it presupposes those teachers who are supervised have within them what it takes to solve their own problems. Cogan (1973) said modern supervision proves powerful enough to give supervisors and the teachers a reasonable hope of accomplishing significant improvement in the classroom instruction". Clinical supervision also refers to face-to-face contact with teachers with the double intention of improving instruction in the classroom and of improving professional growth, which is a form of staff development". This practice considers every individual involved in the process. MOE (2002) asserts that in clinical supervision, the supervisor and the teacher are both assumed to be instructional expert with the teacher identifying his concern while the supervisor helping in analysing the lesson to develop improve lessons.

The focus of clinical supervision is on formative evaluation, which is intended to increase the effectiveness of ongoing educational programmes. This type of supervision is more acceptable and productive than the traditional type. Glatthorn (2007) said most teachers prefer clinical supervision to traditional one and believe that the techniques of clinical supervision are worthwhile. However, the phases will depend on the nature of classroom activities, the time factor and the beliefs of the teacher and of the supervisor. Cogan (1973) also talks about the Johari Window where the supervisor must get to know the teacher thoroughly including the inner self of the teacher. Actually, this model is called 'clinical' in the sense that everything is done in greater detail. Thus, Supervision is viewed as an end towards which teachers

might desire to work. This end can be achieved by doing meaningful work, which is an important aspect in effective supervision. There is shared decision-making by the supervisor and the teacher. The teacher is involved in the preparation and planning of the supervisory programme. This provides the needed integration between persons and organisation as well as personality and accomplishment.

However, the problem with this model is that there may be insufficient time such that the supervisor might have problems in getting to know the teacher's behaviour very well. Also, the supervisor might have problems in protecting the teacher's dignity when dealing with the teacher's inner self and outer self. Nonetheless, this model is very effective, especially for beginner teachers.

Clinical supervision involves eight phases as was being identified by Cogan (1973) ranging from namely; establishing supervisory relationship; planning lesson and the unit with the teacher; planning the observational strategy; observing in class instruction; analysing the observational data; planning the conference strategy; conferring to analyse data; and resuming the planning. Ghana Education Services (G.E.S.) on the other hand, prescribes a five-step process in clinical supervision, which aims at helping the teacher identifies and clarifies problems, receive data from the supervisor, and develop solution with the aid of the supervisor. The five stage or steps from G.E.S. are: Step 1: Pre-observational conference; Step 2: Observation; Step 3: Analysing and Strategy; step 4: Supervisory or Post- Observational Conference; Step 5: Post-conference Analysis.

Phase One – Pre-observation Conference

Before the observation, the supervisor meets the supervisee to establish rapport leading to friendly atmosphere. The supervisor acclimatizes himself with the class with help of the teacher to get to know the ability of the learners. Both the supervisors and the supervisee set targets and decide on what aspects of the teaching will be commented on. During the pre-observational conference, the objectives for the exercise are set by both parties. According to Neagley and Evans (2004), the conditions under which observations are made are very important to the teacher. Most teachers prefer the supervisor to notify them of the visit so that they can prepare their lessons. Cogan (1973) recommends actual planning and preparation of the lessons with supervisors when considering clinical supervision. The struggle to resolve potential conflicts during collaborative activity result in development of higher levels of understanding (Reepen & Barr, 2010). All parties must work together to establish goals, criteria and procedure if the evaluation process is to be effective (Glatthorn, 2007). The teacher must be involved in the supervision process, which would make term more likely to follow the recommendations of the principal and the supervisor. Again, supervisors are to work with teachers to create a risk free environment, in which decision regarding learning is made collaborative.

Phase Two – Observation

This stage deals with the observation itself. The supervisor enters the classroom in such a way that he will hardly be noticed. He should record exactly what occur and avoid subjective interpretation. According to MOE. (2002) the supervisor should avoid correcting the supervisee during this

period of observation. MacNelly and Isbro (2001), teachers prefer supervisors who enter the classroom as unobtrusively as possible and that the supervisor should not participate in any of the activities in progress.

Phase Three – Analyses and strategy

At this stage of clinical supervision, the supervisor reviews the notes written during the observation in the targets agreed upon between him and the supervisee. He tries to look for concrete incidents in the notes that relate to the target items, then analyses the items in the contract to make sure that the recorded note reflect exactly what took place during the observation. It is after analysis that the supervisor can proceed to review his note for significant teacher patterns and critical incidents.

Phase Four- Supervisory or Post –Observational Conference

This stage begins with a review of the supervisee's own objectives and stresses the need for the supervisor to be sensitive to the feeling and the needs of the supervisee in order to bring about a successful conference and ensure effective results. The supervisor should then begin with positive comments and then offer suggestion for improvement. It is worthy to note here that for a successful and hopeful post-observation conference, the supervisor is to provide mostly positive feedback to the highly defensive supervisee and a balance of positive and negative feedback to the more stable one. As a final step in this conference, the supervisor may assist the supervisee to plan his or her next lesson, incorporating the improvements identified by both of them for better results.

Phase Five- Post –Conference Analysis

This is the final phase of the clinical supervision of instruction, which represents self-evaluation for the supervisor. At this stage, the supervisor reviews the just ended conference and evaluates its strength and weaknesses. In doing this, the supervisor asks certain questions as a guide. Example of such questions could be whether he respected the supervisee's professional integrity, was time for discussion balanced between him and the supervisor? Thus, clinical supervision is considered as any service for teachers that eventually result in improving instruction, learning and curriculum. It consists of positive, dynamic and democratic actions designed to improve instruction through the continued growth of all concerned individuals.

Post-Instructional Supervision Conference or Discussion

After the classroom visit and observation, the supervisory conference is the most direct procedure for assisting the teacher. This obviates teacher's anxiety to know the outcome and how the supervisor felt about what had been observed. Teachers frequently worry about this conference; some may be fearful that the supervisor was not pleased. On the other hand, some teachers who may be confident that the lesson observed was a good one will be eager for words of praise.

However, MacNelly and Isbro (2001) said that most teachers prefer a few words about a lesson observed immediately after that particular lesson. He says that there is little to gain and little to lose if nothing is said about the lesson in passing until when the actual conference takes place. This can only happen if the conference takes place. Whether teachers like these conferences or not depends largely on the way they are conducted. Estey (2005), at times

in our Ghanaian schools the conference never takes place. If the supervisor is the head of the school he/she may not have the time to discuss with the teachers.

Reepen and Bar (2010) criticise supervisors for inadequate planning and dealing with abstract and theoretical problems when teachers actually want more help from the supervisors. Experienced teachers want help related to teaching methods, while inexperienced teachers want help with discipline problems. All teachers want supervisory activities that promise real assistance. Supervision of instruction takes place in classrooms and more widely in a school environment, which is an organisation. The classroom is an organisation as well. As a result both the supervisor and the teacher can find themselves faced with problems that accompany the life of a formal organisation like a school. The success of the supervisory programmes depends on the realisation by both the supervisor and the teacher that supervision does not take place in a vacuum but in an organisation. The school is a complex and unique organisation, which has the characteristics of both bureaucracy and professionalism. So it is very important for a teacher to be very aware of these issues so that if certain supervisory activities are done in the name of bureaucracy they can understand that it is all part of the official and accepted supervisory programme.

Nature of Supervision

Supervision usually takes the form of internal or external. The internal supervision deals with supervision done by supervisors in the school whilst the external has to with the supervisors who come from the outside supervise teaching and learning. Neagley and Evans (2004) admonish that schools

should have both internal and external supervision to ensure effective teaching and learning in the school.

External supervision

External supervision is the practice of supervision where education officer from national, regional or district offices visit schools to supervise teaching and learning activities. In Ghana education Service, the responsibility of external supervision rest on the Inspectorate Division of Headquarter headed by the Director with a team of supervisors under him/her. At the regional level, it is the regional level director of education with his/her supervisory team who is responsible for the coordination of teaching and learning activities of the schools within the region. The District Director, on the other hand, takes care of the external supervision in the district with his team of circuit supervisors headed by the Assistance Director in charge of supervision and inspectorate who eventually reports to the Directors (MOE, 1994).

At the school level the circuit supervisor as an immediate external supervisor, is supposed to assist the headteacher to improve school administration, manage supervision and monitoring and assess teacher performance (MOE, 2002). According to Neagley and Evans (2004), the activities of the external inspector or supervisor include individual conferences, group meetings with teachers, school visits, caring and guiding the headteacher and teachers to learn how to use instructional materials and exchange idea with them. These activities are intended to improve the teachers' professional development.

It could be deduced that external type of supervision is one undertaken by outsiders, who are not part of the particular learning environment.

Internal supervision

This form of supervision is organised by the officers within the school setting. This supervision is mostly performed by the headteacher of the school. This deals with all activities performed by teachers and headteachers in the school to enhance teaching and learning. The supervision is basically done by the headteacher, who sometimes delegate some of his/her supervisory roles to teachers and student leaders of the school. The head as internal supervisor ensure that the instruction in the school is improved. This can only be possible, according to Figueroa (2004), if the head takes the initiative in providing a pleasant, stimulating and wholesome environment in which teachers will wants to work and feel secure. The internal supervision therefore demands opportunity to share ideas and to work together effectively as a team so as to achieve the goals of the school. A research conducted by Armstrong (2006) indicates that effective supervisors played their supervisory role well by managing teachers and ensure teacher professional development towards attainment of the goals of the school.

Purpose of Supervision

The main purpose of supervision is to bring out a continuing improvement in the instructional programme. Kapfunde (1990), for instant contended that supervision serves the following functions: staffing and staff development, motivation and stimulation, consultation and programme development. The staffing and staff development function includes recruitment, selection and placement, promotion and dismissal of teaching and

non-teaching staff as well as training and re-training them so as to help them develop new knowledge and skills to enhance their performance. The motivation and stimulation function is concerned with providing a challenging environment, giving professional leadership, creating job satisfaction and boosting morale as well as ensuring teacher participation in formulating policies which will enhance their own task performance. Reepen and Bar (2010) argue that even well qualified and efficient teachers could be frustrated and thereby lose some of their enthusiasm and effectiveness if they lack adequate motivation. He advises that supervision factors should be used to obviate obstacles to good teaching and at the same time provide the stimulus for creative work. Reepen and Bar, (2010) continued to explain the function of consultancy as provision of supervision for continuous professional development, that is, in-service training. This kind of function is usually performed by specialist supervisors like counsellor, the technical skills and from the field of study. The programme development function of supervision deals with adaption of local situation, variation in subject control, modification and method of presentation. Here, the supervisor designs or redesigns the material to be taught by whom, when, where and what pattern.

Mankoe (2002) also focuses on supervision in education as having six areas of operation; namely administration, curriculum, instruction, human relation, management and leadership. He concludes by saying that supervision of instruction is directed towards both improving and maintaining the teaching learning process of the school.

Sergiovanni and Starrat (2002) postulate that the purpose of the supervision is to ensure that standards certain standards are set and met and

make sure that teachers are faithful to the overall aims of education for which the school is established. It also includes assisting teachers to develop as persons and professionals. They group the purposes into the following categories: supervision for quality, supervision for professional development and supervision and supervision for the teacher motivation.

According to Sergiovanni and Starrat (2002), supervision is to ensure quality control. Here, the supervision becomes responsible for monitoring and seeing to it that effective teaching and learning go on in the school. This is done by visiting classes, dialoguing, thereby familiarizing himself with the learners, entire learning situation and the environment. Also the supervision should aim at professional development. The supervisor helps the teacher to grow and develop. The supervisor is also to guide the supervisee to improve upon his teaching skills and in expanding and using his knowledge and techniques in an appropriate professional manner. Not all, supervision should lead to teacher motivation. Thus, supervision in schools aims at building and nurturing of teachers' motivation and commitment to teach in such a way that as to achieve the general aims of education as well as the specific for which the school was established.

The attainment of this purpose, according to Reepen and Barr (2010) will depend on how effective supervision is practiced in the school. Thus, the ultimate purpose of supervision is to promote overall development of the teacher or the supervisee which will eventually lead to improvement of the society. This is in line with Mankoe (2002) contention that the general purpose of supervision is to provide leadership in order to ensure continuity and dynamism in the educational programmes. Supervision clearly involves

provision of support for teachers to enable them become the best they can be. This is the exercise that helps teachers to improve instruction for students (Glickman et al, 2009). Without instructional support and professional supervision, it is unlikely that teachers can provide the desired quality of teaching and learning.

The above evidently show that the scope of supervision is very broad; therefore, all the activities which have to do with teaching and learning in the school are in the area of supervision. Thus, it is necessary to note that having acquired the needed material and equipment, staff and other facilities that can promote effective teaching and learning; it is expedient to ensure adequate supervision so that educational objectives can be attained.

Effective supervision as opined by Glickman et al (2009) therefore, requires knowledge, interpersonal skills, and technical skills, which are applied through the supervisory tasks of direct assistance to teachers, curriculum development, staff development, group development and action research

An increase in the numbers of basic school pupils and the scope of basic school mathematics education has brought with it instruction problems which provide strong evidence of the need for supervision of instruction. The basic school mathematics teacher of today has more difficult instruction problems to deal with in such matters as the method and material of instruction for widely different pupils. Therefore there is a need for supervision of instruction. This means that the increasing complexity and difficulty of teaching problems of basic school teachers and the need for a

supervisory programme will be of assistance to the teacher in carrying out the teaching activities.

Teachers sometimes transfer from different schools; there is then the need to supervise and orientate these teachers when they come into a new school. This also applies to newly qualified teachers who need as much help as possible from the supervisor.

However, supervisory activities must be ongoing in the school. Supervision helps teachers to see the real ends of education, to provide them with specific skills in lesson delivery and to help them develop a positive attitude about professional development through appropriate and effective supervision.

Supervision seeks to improve methods of teaching and learning. It aids, inspires and leads the security that liberates the creative spirit.

Harris (1985), states that supervision has the purpose of influencing the teaching process, promoting pupil learning and the teacher development.

The practice of supervision has evolved over time. Sergivanni and Starrat (2002) identified four models and theory of images of instructional supervision. These are the traditional scientific management image, the human relations image, the 'neoscientific management' image and the human resources image of supervision. Cogan (1973) gives the clinical supervision image. These images can be practised in schools and for basic school mathematics teacher as well during supervision process.

Teachers' Attitudes toward Supervision

The way individuals develop attitudes toward objects, places, things and people is the same way they tend to develop attitudes toward supervision.

Attitudes toward supervision of mathematics teaching to some extent determine an individual's willingness and readiness to study and benefit from the subject. The development of positive attitudes of basic school mathematics teachers toward instructional supervision in general is necessary for all. In the light of the critical role attitude play in supervision, much effort must been devoted to find the variables which could work towards developing positive attitude towards supervision of basic school mathematics teachers. Research has shown that instructional supervision requires essential factors to improve teachers' attitude towards supervision (Aiken, 2002). Further studies have revealed that improvement of teachers' attitude could be achieved through properly carried supervisory programme especially in the area of mathematics (Acelajado, 2001). The study has been supported by related contribution by practitioner educators, Dessler, Munro, & Cole (2011); the reason is that mathematics avoidance is known to be associated with anxiety and fear for the subject. However, Acelajado (2001) and Glatthorn (2007), the supervision can be used as an intervention or anxiety reduction technique to counter the dislike for mathematics. Research literature has indicated that supervisors need to work on their attitude side by side those of their supervisee in order to deal effectively with anxiety encountered in supervisory programmes. Schwartz (2000) also sees supervision as related directly to helping teachers with instructions, which consequently affects teachers' attitude. The negative belief and anxiety about mathematics and supervision have traceable to poor

or ineffective teaching shyness, influence of the mathematics anxious teacher, siblings or peer, lack of confidence when working in mathematics situations (Sergiovanni & Starrat, 2002). Teachers can be inhibited by the presence of the supervisor in the classroom. Some teachers feel that they will not do their best if a stranger is in the classroom, especially education officers who come in once in a while to the unsuspecting teacher. However, there are teachers who can go on with their work as if there is no visitor in the classroom. Thus, these will influence the attitude of the individual teachers differently towards supervision.

Aiken (2002) in a study reported that teachers possessed negative attitudes towards supervision. Reepen and Barr (2010) suggested that most teachers prefer a few words of a lesson- observed immediately after a particular lesson. This underlines the importance of informing the teacher about his/her performance as quickly as possible to ease any fear that the teacher may have about the lesson observed.

Burke and Sutherland (2004), basic school teachers also have negative attitude towards supervision. Langton, Robbins and Judge (2011) also reported that more teachers have negative attitudes toward supervision in the field of mathematics. Glanz (2000) indicated that more teachers would have negative attitude towards supervision in mathematics if the process seems to be fault finding instead of sharing of idea.

A teacher's attitudes toward supervision include his liking, enjoyment, enthusiasm and interest or their opposites. Besides, the teacher's confidence, his/her own mathematical abilities, mathematical self- concept and his/her valuing of variable are determinants of his/her attitude toward it, (Fraser,

2000). Thus, if a teacher likes and enjoys supervisory processes or activities, he may hold favourable attitude towards it. Besides, when the teacher feels enthusiastic and confident toward supervision and how is being organised, thus, they are important contributors to the teacher's make up and approach and will greatly affect the attitude they have toward supervision (Aiken, 2002). If the objectives of organisation are adequately pursued, then stake holders in education should be getting the value from their investment which according to Oslon, Colasanti and Trujillo (2006), is what the society whose members are being educated perceive as worthwhile. But proper administration and management of the school is attainable part through continuous monitoring and supervision of performance of schools and regular supervision to ensure the schools are following the laid down objectives of education. This is because the major duty of both the external and internal supervisor of education is stimulating growth and helping teachers to achieve excellence in teaching (Hart & Bredeson, 1996). It is disheartening to note the observation by Glickman et al. (2009), supervision or mentoring of schools has not been taken seriously and so has been called to question within and outside the profession. Eggen (2001) identifies some of the reasons for this laxity as inappropriate and inadequate number of supervisors.

Hammond, Ingalls and Lawerence (2003), found from their study majority of the few supervisors lord over supervisee instead of sharing idea with them. Again Hammond et al. said qualification has no significant influence on the attitude of teachers towards instructional supervision.

But Mark (1985) identified that qualifications of the supervisor and supervisee count a lot and have the capacity to influence teachers' attitude

towards supervision. Studies on basic school teachers' attitudes toward mathematics are very important due the potential influence they have upon the supervision. Research has argued that positive attitude of teacher towards mathematics contribute to the formation of positive attitude towards its supervision (Olson et al, 2006). Other studies have shown that elements in supervision turn to influenced teachers' attitudes towards supervision (Glanz 2000).

Schwartz (2000) also observed that teachers unconsciously pay more attention to male students than female students. This goes a long way to affect the attitude of female teacher towards supervision especially in the field of mathematics.

Davis and Ampiah (2011) contended that teachers with positive attitude toward supervision would welcome variety of teaching techniques and instructional methods that courage independence. The decision supervisor made in supervisory activity can influence teachers' perceptions as well as the teachers' attitude. Everard and Morris (1990) likewise the type of supervision the supervisor carry out with teachers have the capacity to influence the attitude of teachers towards supervision.

Cooperative learning experiences promote more positive attitude toward the instructional experience than competition or individualistic methodology (Fraser, 2000). Therefore supervisors liaising with supervisee would create harmonious environment that would influence the attitude of basic school mathematics teacher towards supervision and vice versa. The difference between the experience of the supervisor and the teacher influence the attitude of the teacher towards supervision.

Supervisors should participate in teacher supervision training so that they would be more aware of appropriate supervision method, which is, identifying the most appropriate supervision modal that will engage more effective supervision process. Teacher education programmes on supervision must be incorporated to generate and promote higher qualified teachers who will supervise and assist teachers in improving their instructional practices, (Reepen & Barr, 2010). Competent supervisors take advantage of positive attitudes to raise expectations for the supervision process.

Generating positive attitudes towards supervision is an important goal for basic school mathematics teacher. For basic school mathematics teacher to persist in advanced mathematics, supervisors need to assist them to develop positive attitudes towards supervision which lead to great height in concept and skills development. Developing positive attitudes create fertile grounds in which teachers can plants the seed of deeper mathematics learning teaching strategies and cultivate independent advanced mathematics teacher.

Marquez and Kean (2002) advocated that teachers' attitude is responsible for assuming that multicultural issues that have received attention in supervision.

However, mathematics teachers are to view supervision as part of the supervisor's regular workload and not extra circle activities (Fullan, 1998).

Supervision is the nervous system of an organization as school and its main function is to improve the learning situation of children and teacher effectiveness in our educational Institution. The degree of efficiency and effectiveness in the school system has long been dashed out because of different attitudes of teachers' towards supervision of classroom instruction.

Zepeda (2003) therefore placed emphasis on the need for regular supervision in order to improve the attitude of the teacher towards supervision. Fullan (1998) concludes that a profound feature of successful school is that someone somewhere is responsible for and committed to the process, function and tasks of supervision, especially when effectively and appropriately organised.

The problem of poor attitudes towards supervision can be particularly acute in the case of primary or basic school teacher (particularly those who are not mathematics specialist), (Zepeda & Ponticell, 1998). The success of supervision could be achieved if the style of supervision is changed to adversary and motivating, where supervisors respect the teachers. In this case teachers expect supervisors to carry their duties more professionally. The attitudes toward supervision as a tool for enhancement of educational effectiveness have been ranked low for a long time (Hart & Bredeson, 1996).

Although all teachers need support in all the various subject area, the difference in their delivery in teaching implies and demands supervisor with experience.

The standard view of the supervisor's relationship is often negative, when supervision is seen as overseeing and criticizing, perhaps in a hostile manner. Thus, Marquez and Kean (2002), posit that if supervisor fails to offer important professional assistance and motivation to teacher during new entrants who need them; it will have the tendency to influence the attitude of the teacher negatively.

The supervisor provides professional and emotional support, information, advice and a connection to the larger organization passing on

concerns, helping the supervisee to work on some problems he/she faces in teaching learning processes.

As contended by Figueroa (2004) supervision of instruction involves "motivating the teacher to explore new instructional strategies." The teacher must be made aware of the educational goals and standards to be implemented. The observer must be objective during the observation process and maintain confidentiality. It is also important for the observer to provide positive feedback and appropriate resources for the teacher to utilize.

Effective supervision should result in growth and learning by the teacher (Dube, 1990). Without growth and learning there is no benefit for being observed. Glatthorn (2007) found that in order for instructional improvement to occur there must be a relationship of trust between the teacher and the supervisor. Teachers must then be encouraged to engage in reflective thinking based upon the feedback they receive from the observer. According to Cramer (1999), "successful teachers are fully engaged in the reflective process." This contributes to their continuous growth as teachers.

In addition, a study by Alghazo and Gaad (2004), supervisor should communicate effectively with the supervisee and remove perception of superiority over the supervisee in order to create conducive atmosphere for supervision to be carried out. In a study of supervision and teacher satisfaction, Fraser (2000) said "the improvement of the teaching–learning process was dependent upon teacher attitudes toward supervision". He says that unless teachers' perceived supervision as a process of promoting professional growth and student learning, teachers will not have the desired effect and hence have negative attitude towards the supervisory exercise.

McGregor and Forlin (2005) indicated that many teachers preferred experienced supervisors, taught in high schools that are highly qualified to supervise them. Most teachers preferred discussions with their supervisors about the lessons observed. Again McGregor and Forlin (2005), supervisor should be caring, understanding, helpful and overall knowledgeable in the field of study. The relationship between teacher and supervisor was expected to be collegial rather than authoritarian. Kapfunde (1990) says that teachers usually associate instructional supervision with the rating of teachers. He goes on to say that some teachers still perceive supervision as a form of "… inspection and evaluation…" or more popularly "snoopervision". Kapfunde (1990), who says that "supervisors who emphasized indirect behaviour when supervising teachers tend to receive high rating from teachers". In Ghana many teachers resent or even fear being supervised because of the history of supervision, which has always been biased towards evaluation or inspection.

Acheson (1987) indicates that teachers' anxieties are almost universally aroused when a supervisor comes to classroom as a ratter or if the purpose of the supervisors' visits is unknown. These sentiments are of relevance to our Ghanaian situation where supervision is usually done to rate teachers.

Wiles and Lovell (1975) stated that teachers can perceive supervision as a worthwhile activity, if the supervisor gives teachers security by supporting their judgments especially when teachers' judgments are wrong. Teachers want to be treated fairly in these supervisory activities. Greenfield (1987) says that teachers can perceive supervisors as people who control their destiny. Teachers must feel that the supervisor is there to serve them and to

help them to become more effective teachers and ensure professional development of the teachers.

Cogan (1973; 9) says that one of the most important factors that affect supervision effectiveness is the "unclarified, ambivalent relation of teachers to supervisors". Teachers seem to have ambivalence about supervision because there is a "dramatic contrast between a strong commitment to the principle of supervision and a stubborn, deep-seated distrust of direct supervisory intervention in the classroom" (Cogan, 1973; 9)

However, Marks (1985) states that the concept of the educational supervisor has changed over the years. Traditional supervisors were seen as inspectors by the teachers, who came on a fault-finding mission to the teachers' classroom. Once this happens teachers will eventually have unfavourable attitude towards to the supervisory (Mark, 1985). Historically, teachers saw themselves as instruments that could be closely supervised to ensure that they carried out methods of procedure determined by the supervisors mechanically. Over the years this attitude has been noted and still exists among teachers, but some teachers now see the more positive aspects of supervision. For example, Cogan (1973) says that some teachers now view supervision as part of the administration of the school and also as a necessary activity, which must be done. Teachers also see the worthiness of the whole programme if the supervisors are democratic and fair. Human relations and human resources should be the key issue in a supervisory programme, especially when supervising the teacher. Srgiovanni and Starrat (2002) said that education officers, heads of schools, deputy heads and heads of departments must supervise the teachers in the classroom. There is heavy

reliance on local supervisors that is headteachers in the basic schools.

Headteacher being the immediate supervisor, it is the basic responsibility of the headteacher to establish peer relationships with the teachers and mostly new teachers posted to the school. If the supervisor is an approachable person, teachers will not be inhibited when he/she comes into the classroom. The workloads of the supervisor also affect the supervisory role of the supervisor. At the basic school where most headteachers are engaged in teaching find it difficult to carryout frequent supervision for their teachers.

Some experienced teachers can resent suggestions from the supervisor on teaching methods especially if the supervisor has fewer years of experience in the teaching field. Corcoran and Leahy (2003) suggested that the supervisor should capitalize on the experience of teacher by using the supervisor's leadership and older teachers to share his skills, information and abilities.

In a study of supervisory behaviour and teacher satisfaction by Fraser (2000), several teachers indicated that they experienced anxiety, uneasiness or resentment due the presence of a supervisor in their classroom. According to Cogan (1973), others may experience a kind of productive stimulation deriving from implicit communication with a colleague and the gratifying opportunity to teach in the presence of a knowledgeable professional whose praise would be a genuine reward". Thus, some teachers can be constrained or liberated while a few remain unaffected.

Chapter Summary

Supervision of instruction is a very wide subject. Generally it is a process and not an event. It consists of all activities leading to the improvement of instructions, activities related morale, in-service education, improving human relations and curriculum development. This implies that quality of work of staff in an establishment is largely a result of supervisory activities that organization has put in place. Supervision can broadly be grouped into two main types namely, traditional supervision and modern supervision. It however, a generally accepted views that traditional form of supervision is often counter-productive. Therefore modern supervision otherwise known as clinical supervision is what is widely accepted. Supervision serves the following purpose: staffing and staff development, motivation and stimulating, consultation and programme development.

Supervision of instruction ensures "motivating the teacher to explore new instructional strategies." Thus, teacher made aware of the educational goals and standards to be implemented, whiles supervisor must be objective during the observation process and maintain confidentiality. It is also important for the observer to provide positive feedback and appropriate resources for the teacher to utilize. In order for instructional improvement to occur there must be a relationship of trust between the teacher and the supervisor. Teachers must then be encouraged to engage in reflective thinking based upon the feedback they receive from the observer.

Effective supervision should result in growth and learning of the teacher. Without growth and learning there is no benefit to being observed or

supervised. The attitude of teachers towards supervision is being characterized by effectiveness of the supervision that is carried in the school.

Thus, to able asses effectively the attitude of teachers towards supervision, these elements cannot be ignored. The above views throw more light on the purpose of this research which aims at examining the attitude of basic school mathematics teachers in the Cape Coast Metropolis.

CHAPTER THREE

METHODOLOGY

This chapter presents how the study was conducted. The research design, the population, sample and sampling procedure are presented. Also presented in this chapter are the instruments used to collect data, validity and reliability of the instruments, data collection and data analysis procedures.

Research Design

The design used was descriptive research. Descriptive research survey is the one in which information is collected without changing the environment (Leedy, 1993). A survey is used to collect original data for describing a population too large to observe directly (Leedy, 1993). A survey obtains information from sample of people by means of self –report that is the people respond to series of questions posed to by the researcher (Polit & Hungle, 1999). Descriptive survey is used to obtain information concerning the state of phenomena and again to select sample from a population afterwards generalising the conclusion drawn (Creswell & Clark, 2007).

The descriptive survey design was preferred because it describes and interprets what exists at present as a normal situation. (Creswell, 2007). The usefulness of descriptive survey for this study is supported by Burns (2000) who asserted that this design is useful in collecting data from members of population in order to determine current status of that population with respect to one or more variables

According to Johnson (1994) there are distinct advantages in using a questionnaire verses an interview methodology: questionnaires are less expensive and easier to administer than personal interviews; they lend themselves to group administration; and, they allow confidentiality to be assured. Leedy and Ormrod (2001) indicate that surveys are extremely efficient at providing information in a relatively brief time period at low cost to the researcher.

For these reasons, I chose a descriptive research methodology and designed a questionnaire survey instrument to find out the attitude of basic school mathematics teachers towards supervision, and what goes into supervision of the basic schools mathematics teachers, so as to find out what informs the specific attitude of teachers of existing public school in the research locale.

A descriptive survey was used because it provides an accurate portrayal or account of the characteristics, for example behaviour opinions, belief, knowledge and attitude of a particular individual, situation or group (Gall, Borg & Gall, 2002). This was chosen to meet the objectives of the study, namely to determine the attitudes of basic school mathematics teacher toward instructional supervision, the attitudes of basic school mathematics teachers in the various school type (below average, average and above average) toward instructional supervision and the nature of supervision in the various school types.

Study Area

This study was carried out in the Cape Coast Metropolis in the Central Region of Ghana.

Population

The study population consisted of all basic school mathematics teachers, headteachers and circuit supervisors in the Cape Coast Metropolis. The total number of 196 population was covered.

Sampling and Sampling Procedure

A sample of 24 out of 58 basic schools in the Cape Coast Metropolis was selected for the study. The schools were selected from all the six (6) circuits in the Metropolis. Teachers and headteachers were chosen from the various school types. Eight schools were selected from each of the various school types thus below average, average and above average achieving schools. The sample size included 168 basic school mathematics teachers, seven (7) from each school, 24 headteachers and six (6) circuit supervisors.

Available subjects were entered until a sample size 198 was reached. Stratified random sampling was used to categorise the schools and simple random sampling used to select the school and purposive sampling was used to select the teachers and the supervisors.

Data Collection Instrument

In order to obtain the needed data to answer the research questions, researcher made questionnaire was the main instrument designed for the data collection for the study. The test items were based on the research questions that guided the study. A questionnaire is printed self-report form, designed to elicit information that can be obtained through the written responses of the

subjects. The information obtained through the questionnaire is similar to that obtained by an interviewer, but the questionnaire turns to have less depth (Burns & Grove, 2009)

According to Leedy and Ormrod (2001), there are distinct advantages in using a questionnaire versus an interview methodology: questionnaires are less expensive and easier to administer than personal interviews; they lend themselves to group administration; and, they allow confidentiality to be assured.

Two sets of questionnaires were designed, one for the teachers thus (to collect data on their attitude and what goes into supervision), and one set of questionnaire was also designed for the headteachers and circuit supervisors to collect data on quality of supervision. The questionnaires consisted of both close-ended and open-ended items. In the open-ended questions, the subjects were required to response in writing whereas in the closed-ended questions the respondents were required to choose from the options provided by the researcher, (Burns & Grove, 2009). The latter is also more efficient in the sense that a respondent is able to complete more items in a given a period of time (Polit & Hungle, 1999).

The teachers' questionnaire consisted of sections A, B and C. Section A was aimed at gaining background characteristic of the respondents such as age, gender, educational/professional qualification and level at which they teach and number of years of experience and this captured eight items. This information assisted the researcher when interpreting the results. For example, helped in knowing the level at which they taught. Section B aimed at determining the nature of supervision. Section C also determined the attitudes

of the teachers toward supervision. The teachers' questionnaire contained 36 items in all (See Appendix A).

Items that were designed to elicit information on the nature of supervision of mathematics teachers from the teacher respondents consisted of six likert scale type and five short answers response type questions. There were 14 likert scale type items that assessed the attitude of the teachers towards supervision.

The questionnaire for headteachers and circuit supervisors consisted of section A and B. The section A aimed at gaining information on background characteristics such as sex, age, number of years as circuit supervisor, academic/professional qualification with five items in all. The items consisted of four likert scale type and a short answer type. The section B obtained information on what goes into supervision and consisted of 19 items. It was made up of 17 likert scale type and two short answer type items (Appendix B).

Instruction guidelines attached helped the subjects to tick from the likert scale responses questions and provided short answers to open ended items.

Reliability and Validity

Reliability

Polit and Hungler (2001) defined reliability as the degree of consistency with which an instrument measures the attribute it is designed to measure. Creswell (2007) identified three types of reliability referred to in quantitative research, which relate to: (1) producing the same results under same measurement conditions (2) the stability of a measurement with respect

to time; and (3) the similarity of measurements in a given time period Creswell (2007) argued that reliability is the consistency with which an individual's scores remain relatively the same and can be determined through the test-retest method at two different times. He stated that a high degree of stability indicates a high degree of reliability, which means the results are repeatable.

The two sets of questionnaire that were answered by the teachers, and the supervisors revealed consistency in responses. The instruments were pre-tested to ensure their reliability. This was done through the administration of the instruments to sample respondents from Abura Asebu- Kwamankese District

The reliability coefficients of the instruments were completed using Cronbach formula. Score obtained from pilot test revealed a reliability coefficients of the teachers and supervisors questionnaires were 0.81 and be 0.87 respectively. According to Thumb rule suggested by Bryant and Graham (2002) reliability of a test for research purpose should be at least 0.70 and preferably higher, therefore it is considered acceptable.

Validity

Ofori (2006) defined the validity as “the degree to which the evidence supports that the interpretations of the data are correct and the manner in which interpretations used are appropriate. According to Creswell (2007) there are several threats of validity that proves or raises issues about the accuracy of the data or results or application of statistical tests to conclude the effects of an outcome. They are internal threats, external threats, statistical conclusion threats, and construct validity threats. Bryant and Graham (2000)

state that the basic requirement to interpret an experiment is to clearly define internal validity. Internal validity threats are experimental procedures, treatments, or experiences of the participants that threaten the researcher's ability to draw correct inferences from the data in an experiment. These are raised due to usage of inadequate procedures like changing the instrument or a tool during an experiment, changing the control group participants under study etc. Because of these inadequate procedures, the experimenter should find whether the experiment make a difference in this instance or not.

External validity threats arise when the researcher concludes incorrect inferences from the sample data to make generalisation. It addresses the question of generalizability that to whom can we generalize the obtained results. A statistical conclusion validity threat arises when experimenters draw inaccurate inferences from the data because of the violation of the assumptions of the statistical test being used for the collected data. Construct validity threat arises when investigators use inadequate definitions and measure variables based on those inadequate definitions. The validity of an instrument is the degree to which an instrument measures what it is intended to measure (Polit & Hungler, 1999). Content validity refers to the extent to which an instrument represents the factors under study. To achieve content validity, the questionnaires included a variety of items that found the attitude of basic school mathematics teachers' attitude towards supervision, and what goes into supervision.

Items were based on information gathered during the literature review to ensure that they were representative of what mathematics teachers knew about supervision (Polit, Beck & Hungler, 2001). The items were formulated

in simple language for clarity and easy understanding. Clear instructions were given to the subjects.

To ascertain the validity of the questionnaires, they were submitted to my supervisor and some colleagues to read through, corrected critique and offered suggestions. This suggestions made from the exercise were used to restructured some of the items found to be irrelevant and those unrelated to the research questions were removed.

Data Collection Procedure

Pretesting of the questionnaire

To check the validity and the reliability of the research instruments a pre-testing was done. The researcher pre-tested the questionnaire on 16 respondents to meet the set criteria at Abura Asebu Kwamankese District. The District shares common boundary with Cape Coast Metropolis and also had almost similar characteristics as Cape Coast Metropolis. Ten teachers, three headteachers and a circuit supervisor were randomly selected for the pre-test. Based on the outcome of the pre-test, it was determined some questions were to be restructured or changed.

I went back to interview the respondents to ascertain whether the questions elicited the valid responses. After interrogating the respondents' verbal on the individual items, some items were found not performing their function as intended; therefore the necessary changes were made to fulfil the required responses.

Written permission to conduct the study was obtained from the department of Basic education, University of Cape Coast. Subjects consent was obtained before they completed the questionnaires. Permission was also

sought from the Metropolitan Directorate of Education to conduct research within the Metropolis. After the permission was granted, time table was drawn for the visit to the selected schools. The instruments were administered personally to the respondents in their respective schools and offices. I made a personal contact with the respondents in order to administer the instruments.

Average of two visits was made in each school. Burns and Grove (2009) defined informed consent as the prospective subject's agreement to participate voluntarily in a study, which is reached after assimilation of essential information about the study. The subjects were informed of their right to voluntarily consent or to withdraw participation at any time without penalty.

Subjects were informed about the purpose of the study; the procedures that were involved to collect the data. They were assured that there were no potential risks or cost involved. Again subjects were promised of confidentiality; it means that the information provided would not be publicly reported in a way which identifies them (Creswell, 2002). In this study, confidentiality was maintained by keeping the collected data confidential and not revealing the subject identities when reporting or publishing the study. The will of the Subject were treated as autonomous agent by informing them about the study and allow them to voluntarily choose to participate or not.

Lastly information was provided by the respondents to the researcher in the event of further questions or complaints. Scientific honesty was regarded as a very important ethical responsibility when conducting the research. Dishonest conduct includes manipulation of design and methods, retention or manipulation of data Clendon & White (2000). I tried as much as

possible to avoid any form of dishonesty by recording truthfully the answers of the subjects.

Data Processing and Analysis

The statistical methods used in analysing the data were descriptive statistics such as simple percentage, frequencies, mean and standard deviation. Percentages, frequencies, mean and standard deviation were calculated for various items that answered the research questions. This was done through the use 'statistical package for social science' (SPSS) 15.0 version.

In order to facilitate scoring and analysis of the data the completed copies of the questionnaire were serially numbered, coded and tabulated with the aid of 15.0 versions of SPSS. The following values were given to the responses: "strongly agreed"- 4, "Agreed"- 3, "Disagreed" – 2, and "Strongly Disagreed"- 1. All the negative worded items were scored in the other way round.

In the open – ended items, the responses were compared, and those that reflected the same view were grouped together and coded accordingly. The data were organized into tables of frequencies and percentages and carefully calculated and analysed to answer the research questions appropriately. The 'one way Anova' was used to analyse the difference in the attitude of teachers in the three categories of schools towards supervision.

Table 1 presents how the research questions are analysed.

Table 1: *How the Research Questions are Analysed*

Research Question	Source	Analyses
What are the attitudes of basic school mathematics teacher toward supervision?	Questionnaire	Quantitative analyses, present mean standard deviation and frequency counts
What are the attitudes of primary school teacher toward supervision?	Questionnaire	Quantitative analyses, present mean standard deviation and frequency count.
What are the attitudes of JHS mathematics teacher toward supervision?	Questionnaire	Quantitative analyse, present mean, standard deviation frequency counts.
What are the attitudes of basic school mathematics teacher toward supervision in below average performing schools?	Questionnaire	Quantitative analyses, present mean and standard deviation, frequency counts.
What are the attitudes of basic school mathematics teachers towards supervision in the above average performing school?	Questionnaire	Quantitative analyse, present mean and standard deviation, frequency counts
What goes into supervision of basic school mathematics teacher?	Questionnaire	Quantitative analyses, present mean and standard deviation and frequency counts.
There is no significant difference is below average, average and above average performing schools.	Questionnaire	Quantitative analyses, present mean, standard deviation and frequency counts Qualitative analyses, present narrative with illustrative examples

CHAPTER FOUR

RESULTS AND DISCUSSION

This chapter presents the result from the analyses and discussion of the data gathered from the respondents. The results are presented according to the research questions and hypothesis that were posed to guide the study in chapter one. The attitude of teachers towards supervision, attitude of primary school teachers towards supervision, attitude of J.H.S. teachers towards supervision, what goes into supervision in Above average, Average and Below average performing schools and attitude of mathematics teachers towards supervision in Above, Average and Below average performing schools are therefore presented in this chapter.

Teacher respondents were required to indicate their gender. Table 2 presents the responses.

Table 2: *Sex of the Teacher Respondents*

Sex	**Frequency**	**Percentage**
Male	102	60.7
Female	66	39.3
Total	**168**	**100**

n=168, Source field data (2013)

Results from Table 2 show that majority 120(60.7%) of the respondents were males. This results show that basic school mathematics teachers were male dominated in study locale.

The teacher respondents were asked to indicate the level they teach. Table 3 gives the summary of the responses by the teachers.

Table 3: *The Number of Teacher Respondents from Primary and JHS Level.*

Level	**Frequency**	**Percentage**
JHS	24	14.3
Primary	144	85.7
Total	**168**	**100.0**

n= 168, Source field data (2013)

Table 3 shows that 24(14.3%) taught at J.H.S. level and 144(85.7%) taught at the primary level.

The supervisors were asked to indicate their gender characteristics. Table 4 shows the summary of the results.

Table 4: *Sex of the Supervisor Respondents*

Sex	**Frequency**	**Percentage**
Male	21	70
Female	9	30
Total	**30**	**100**

n=30, source field data (2013)

The results from Table 4 show that majority 21(70.0%) of the supervisors were males and minority 9 (30.0%) was females. This implies that supervisors were male dominated.

The teacher respondents were required to indicate their ages. Table 5 indicates their responses.

Results from Table 5 show that majority of 152 (89.9%) were between the ages of 20-39. This implies that majority of the teachers were young and energetic and only few of them 16(2.4%) were above 50 years.

Table 5: *Ages of the Teacher Respondents*

Age in years	**Frequency**	**Percentage**
less than 20	1	6
20-29	73	43.5
30-39	78	46.4
40-49	12	7.1
50-above	4	2.4
Total	**168**	**100**

n=168, source field data (2013)

This indicated that majority of the basic school mathematics teachers were youth.

The supervisors were required to indicate their ages range. Table 6 presents their responses.

Table 6: *Ages of the Supervisors*

Age	**Frequency**	**Percentage**
20-29	1	3.3
30-39	7	23.3
40-49	14	46.7
50-above	8	26.7
Total	**30**	**100**

n=30, source field data (2013)

Results from Table 6 shows that majority 22(83.4%) of supervisor respondents was above 40 years. This indicated that supervisors were dominated by the old.

The teacher respondents were required to indicate the number Table 7 presents the number of years the teacher respondents had taught as mathematics teacher.

Table 7: *The Number of Years the Teacher Respondents had Taught*

Years	**Frequency**	**Percentage**
less than 5 yrs.	71	42.3
5-10	70	41.7
11-15	18	10.7
16-20	3	1.8
21-25	5	3.0
26-above	1	0.6
Total	**168**	**100**

n=168, source field data (2013)

Results from Table 7 show that majority 141(84.0%) of the teacher respondents had taught for 10 years and below, implying that majority had less number of years of experience. Twelve point five (12.5%) had taught between 11-20 years, and few of them 6(3.6%) had taught for 21 years and above. This indicates that majority of the mathematics teachers had less number of years of experience.

Another characteristic sought from the supervisor respondents was the number of years the supervisors had been a supervisors. Table 8, therefore

provides the distribution of the supervisors respondents number of years as supervisor.

Table 8: *Number of Years as a Supervisor*

Years	**Frequency**	**Percentage**
less than 5 yrs	16	53.4
5-10 yrs	9	30
11-15 yrs	3	10
16-20 yrs	1	3.3
21-25 yrs	1	3.3
Total	**30**	**100**

n=30, source field data (2013)

Results from Table 8 depict that majority 25(83.4%) had 10 years of experience and below as supervisors, while minority 5(6.6%) had more than 10 years of experience as supervisors. This indicates that majority of the supervisors were not experienced. This seems to contradict the literature McGregor and Forlin (2005), supervisee preferred experienced supervisors, taught for some number of years and highly qualified as well to supervise them.

The teacher respondents were also required to indicate highest professional qualification they had attained and their responses are displayed in Table 9.

Results from Table 9 show that majority of the teacher respondents 141(84.9%) were graduates with minority 25 (15%) were undergraduate. This implies that teachers have the ability and requisite skills to handle the subjects. Again this means that schools under review had well qualified

professional staff to impart quality knowledge, skills and values to the pupils and students.

Table 9: *Professional Qualifications of the Teachers*

Professional qualification	Frequency	Percentage
SSCE	14	8.4
Cert A	11	6.6
Diploma	90	54.2
Degree	47	28.3
Masters	4	2.4
Total	**166**	**100**

n=166, source field data (2013)

This seems to be in line to literature Reepen and Barr (2010), mathematics is a technical subject and therefore needs well qualified professional teacher to teach it.

The supervisor respondents were required to indicate their professional qualification and this is presented in Table 10.

Table 10: *Professional Qualifications of the Supervisors*

Qualification	Frequency	Percentage
Cert A	3	10
Diploma	6	20
Degree	15	50
Masters	6	20
Total	**30**	**100**

n=30, source field data (2013)

Result from Table 10 shows that minority 3 (10.0%) of the supervisor respondents had certificated while majority 27(90.0%) were degree holder including master's degree. This implies that supervisors were more knowledgeable and possessed the requisite skills values and professional qualification to carry effective supervision at the basic schools. This development is in the line with the literature Reepen and Bar (2010), competent and qualify supervisor takes advantage of positive attitude towards supervision.

Research Question 1

What are the attitudes of basic school mathematics teachers toward instructional supervision?

The first research question was posed to the general attitudes of basic school mathematics teachers towards supervision. To know the attitude of the teacher respondents towards supervision, the basic school mathematics teacher were asked to state whether they agreed or strongly or disagreed to certain statements which would reveal the attitude of the teachers in the metropolis. Table 11 gives the summary of the responses by the teacher respondents.

Results from Table 11 show that all the items (14) received favourable responses. Eight out of the fourteen (8 out of 14) attitudinal items had mean scores of above 3.0. The overall mean score for the item was 3.0 and standard deviation of .66. The few items also had mean scores of above 2.5. These indicating teachers had favourable attitude towards supervision as well. This

shows that, generally basic school mathematics teachers had positive attitude towards supervision.

Table 11: *The Attitudes of Basic School Mathematics Teachers Towards Instructional Supervision*

Variable	**SA f (%)**	**A f (%)**	**D f (%)**	**SD f (%)**	**Mean**	**Std**
I like being supervised by circuit supervisor because he/she is more knowledgeable	18(10.7)	110(65.5)	36 (21.4)	4(2.4)	2.85	.63
I love to see the circuit supervisors because I gain a lot when they supervise my lesson.	28(16.7)	110(65.5)	28 (16.7)	2(1.2)	2.98	.62
I like to be supervised by the circuit supervisors because they bring a lot of development to the teaching and learning.	33(19.6)	104(61.7)	28(16.7)	3(1.8)	2.99	.66
I hate to be supervised by headteacher because I have similar ability as him/her.	51(30.4)	109(64.9)	0(0)	8(4.8)	3.21	.67
I hate to be supervised by my headteacher because he/she always find fault with everything I do.	57(33.9)	108(64.3)	0(0)	3(1.8	3.30	.57

Table 11 Continued

Variable	SA f (%)	A f (%)	D f (%)	SD f (%)	Mean	Std
I hate to be supervised by the head teacher because it is a waste of time.	55(32.7)	104(61.9)	0(0)	9(5.4)	3.22	.70
I love to be supervised by the headteacher because I gain a lot when he/she supervises my lesson.	26(15.5)	118(70.2)	20(11.9)	4(2.4)	2.99	.61
I hate to be supervised by the circuit supervisors because they impose their teaching method on me.	37(22)	117(69.6)	0(0)	14(8.3)	3.05	.74
I dislike to be supervised by circuit supervisors because they carry the supervision activities as a fault finding activities	27(16.1)	121(7.2)	0 (0)	20(11.9)	2.92	.80
I hate to be supervised by the circuit supervisor because I have similar ability as the circuit supervisor.	36(21.4)	128(76.2)	0(0)	4(2.4)	3.18	.51
I dislike to be supervised by circuit supervisors because it is a waste of contact hours.	29(17.3)	131(7.8)	0(0)	8(4.8)	3.07	.60

Table 11 Continued

Variable	SA f (%)	A f (%)	D f (%)	SD f (%)	Mean	Std
I love to be supervised by the circuit supervisor because they appreciate the little effort from me.	35(20.8)	108(64.3)	19(11.3)	6(3.6)	3.02	.68
I love to be supervised by the headteacher because he/she is more knowledgeable than 1.	25(14.9)	71(42.3)	60(35.7)	12(7.1)	2.65	.82
I like to be supervised by the headteacher because he/she appreciate the little effort I put.	41(24.4)	104(61.9)	21(12.5)	2(1.2)	3.10	.64
I love to be supervised by the circuit supervisor because they appreciate the little effort from me.	35(20.8)	108(64.3)	19(11.3)	6(3.6)	3.02	.68
Weighed /Overall mean					**3.04**	**.66**

n= 168 Scale: 4=Strongly Agree (SA), 3=Agree (A), 2=Disagree (D), 1=Strongly Disagree (SD)

This development seems to confirm the literature Langton *et al*. (2011), teachers have negative attitude towards supervision. Majority (76.2%) disagreed to the item "I hate to be supervised by headteacher because I have similar ability as him/her. This had mean score of 3.2 (Table 11).

Again majority of about (95%) disagreed to the items "I hate to be supervised by the headteacher because it is waste of time", and the item "I dislike to be supervised by the circuit supervisors because it is waste of contact hours". These items had mean scores of about 3.0. Majority of about (98%) disagreed to the items "I hate to be supervised by the circuit supervisor because I have similar ability as the circuit supervisor" ".and "I hate to be supervised by circuit supervisor because he/she always finds fault with everything I do. The above items had mean scores of 3.2.

Moreover, majority (86.3%) said they like to be supervised by headteacher because he/she appreciate little effort he/she puts in. These items had mean scores of 3.1.

Again majority (85.1) said they love to be supervised by the circuit supervisors because they appreciate the little effort from him/ her. The mean to this effect was 3.0. The rest of the items thus, (6 out of the 14) had mean scores of above 2.7, also indicating favourable responses to the items.

The attitudes of primary school mathematics teachers towards instructional supervision

The primary school mathematics teachers were asked to agree or disagree to statement to find out their attitude towards supervision. Table 12 summarizes the responses given by the teachers.

Table 12: *Primary School Mathematics Teachers' Attitudes Towards Instructional Supervision*

Variable	SA f (%)	A f (%)	D f (%)	SD f (%)	Mean	Std
I like being supervised by circuit supervisor because he/she is more knowledgeable.	15(10.4)	96(66.7)	29(20.1)	4(2.8)	2.85	.63
I love to see the circuit supervisors because I gain a lot when they supervise my lesson.	27(18.8)	92(63.9)	24(16.7)	1(.7)	3.00	.62
I like to be supervised by the circuit supervisors because they bring a lot of development to the teaching and learning.	29(20.1)	89(61.8)	23(1.6)	3(2.1)	3.00	.67
I hate to be supervised by headteacher because I have similar ability as him/her.	44(30.6)	92(63.9)	0(0)	8(5.6)	3.19	.70
I like to be supervised by the circuit supervisors because they bring a lot of development to the teaching and learning.	29(20.1)	89(61.8)	23(1.6)	3(2.1)	3.00	.67
I hate to be supervised by the headteacher because it is a waste of time.	48(33.3)	87(60.4)	0(0)	9(6.2)	3.21	.74

Table 12 continued

Variable	SA f (%)	A f (%)	D f (%)	SD f (%)	Mean	Std
I love to be supervised by the headteacher because he/she is more knowledgeable than I.	22(15.3)	61(42.4)	51(35.4)	10(6.9)	2.66	.82
I like to be supervised by the headteacher because I gain a lot when he/she supervises my lesson.	26(18.1)	96(66.7)	18(12.5)	4(2.8)	3.00	.65
I hate to be supervised by the circuit supervisors because they impose their teaching method on me.	31(21.5)	101(70.1)	0(0)	12(8.3)	3.05	.74
I hate to be supervised by the circuit supervisor because I have similar ability as the circuit supervisor.	31(21.5)	109(75.7)	0(0)	4(2.8)	3.17	.52
I dislike to be supervised by circuit supervisors because they carry the supervision activities as a fault finding activities.	24(16.7)	101(70.1)	0(0)	19(13.2)	2.901	.83

Table 12 continued

Variable	SA f (%)	A f (%)	D f (%)	SD f (%)	Mean	Std
I dislike to be supervised by circuit supervisors because it is a waste of contact hours.	26(18.1)	101(70.1)	0 (0)	19(13.2)	2.90	.83
I like to be supervised by the headteacher because he/she appreciates the little effort I put.	36(2.5)	90(62.5)	16(11.1)	2(1.4)	3.11	.64
I love to be supervised by the circuit supervisor because they appreciate the little effort from me.	30(20.8)	94(65.3)	15(10.4)	5(3.5)	3.03	.67
I hate to be supervised by the headteacher because he/she always finds fault with everything I do.	50(34.7)	91(63.2)	0(0)	3(2.1)	3.31	.58
Weighed /Overall mean					**3.04**	**.67**

n= 144 Scale: 4=Strongly Agree (SA), 3=Agree (A), 2=Disagree (D), 1=Strongly Disagree (SD)

Results from Table 12 indicate all the items received favourable responses. Thus majority of the attitudinal items (12 out of 14) had mean scores of above 2.9. The overall mean score for the items was 3.0 and standard deviation of .67. This indicated that, generally mathematics teachers at primary school level had positive attitude towards supervision.

However, items like “I love being supervised by circuit supervisor because he/she is more knowledge” “I like to be supervised by the headteacher because I gain a lot when he/she supervises my lesson.”, “I love to be supervised by the circuit supervisor because they appreciate the little effort from me.”, “I like to be supervised by the circuit supervisors because they bring a lot of development to the teaching and learning.” and I dislike to be supervised by circuit supervisors because the carry the supervision as fault finding activity” had mean scores of 3.0 and standard deviation of .62.

Moreover, 6 of the items, like “I hate to be supervised by my headteacher because I have similar ability as him or her.”, “I hate to be supervised by my circuit supervisors because they impose their teaching methods on me.” I hate to be supervised by my circuit supervisor because I have similar ability as the circuit supervisor”, I dislike to be supervised by the circuit supervisor because it is waste of contact hours and “I like to be supervised by headteacher because he/she appreciate the little effort I put” had mean scores of 3.1.

Again the responses of the remaining items were also favourable. Thus obtaining mean scores greater than 2.5. This development is in line with the view of Figuerro (2004), who said teachers always feel motivated when supervision of instruction involves motivating the teacher to explore new instructional strategies and again helps to bring development to the teaching profession.

The attitudes of JHS mathematics teachers towards instructional supervision

The JHS Mathematics teachers were thus to agree or disagree to certain statement which will portray their attitude towards supervision. Table 13 presents the attitudes of JHS school mathematics teachers toward supervision.

Results from Table 13 show that all the items (14) received favourable responses, showing mean scores of above 2.5.

Again majority (8 out 14) of the items had a mean score of above 3.0 (Table 13). The weighted mean for all the items was 3.0 and the standard deviation of .58. Generally, this indicates that JHS mathematics teachers had positive attitude towards supervision. McGregor & Forlin (2005), teachers turn to hold favourable attitude towards supervision when the teacher likes and enjoy the supervisory processes or activity.

Furthermore, majority (90.0%) disagreed the items "I hate to be supervised by my headteacher because he/she finds fault with everything I do" "I hate to be supervised by the headteacher because it is waste of time." and disagreed. This had mean score of 3.3 and standard deviation was .46 (Table 13).

All the respondents disagreed to the item "I hate to be supervised by the circuit supervisor because I have similar ability as the Circuit supervisor" is not far different from the earlier discussed results. The mean score to the responses was 3.2 and standard deviation was .41 (Table 13). This seems to confirm the literature that Aikens (2002), if a teacher likes or enjoys

supervisory process or activities he/she may hold favourable attitude towards it.

Table 13: *JHS Mathematics Teachers' Attitudes Towards Instructional Supervision*

Variable	SA f (%)	A f (%)	D f (%)	SD f (%)	Mean	Std
I like being supervised by circuit supervisor because he/she is more knowledgeable.	3(12.5)	14(58.3)	7(29.2)	0)0)	2.83	.64
I love to see the circuit supervisors because I gain a lot when they supervise my lesson.	1(4.2)	18(7.5)	4(16.7)	1(4.2)	2.79	.59
I like to be supervised by the circuit supervisors because they bring a lot of development to the teaching and learning.	4(16.7)	15(62.5)	5(20.8)	0(0)	2.96	.62
I hate to be supervised by headteacher because I have similar ability as him/her.	7(29.2)	17(70.8)	0(0)	0(0)	3.29	.46
I hate to be supervised my headteacher because he/she always find fault with everything I do.	7(29.2)	17(70.8)	0(0)	0(0)	3.29	.46
I hate to be supervised by the headteacher because it is a waste of time.	7(29.2)	17(70.8)	0(0)	0(0)	3.29	.46

Table 13 continued

Variable	SA f (%)	A f (%)	D f (%)	SD f (%)	Mean	Std
I hate to be supervised by the headteacher because it is a waste of time.	7(29.2)	17(70.8)	0(0)	0(0)	2.58	.83
I love to be supervised by the headteacher because he/she is more knowledgeable.	0(0)	22(91.7)	2(8.3)	0(0)	2.92	.28
I like to be supervised by the headteacher because I gain a lot when he/she supervises my lessons.	0(0)	22(91.7)	2(8.3)	0(0)	2.92	.28
I hate to be supervised by the circuit supervisors because they impose their teaching methods on me.	6(2.5)	16.(66.7)	0(0)	2(8.3)	3(0.8)	.78
I hate to be supervised by the circuit supervisor because I have similar ability as the circuit supervisor.	5(20.8)	19(79.2)	0(0)	0(0)	3.21	.41
I dislike to be supervised by the circuit supervisors because they carry the supervision activities as fault finding activities.	3(12.5)	20(83.3)	0(0)	1(4.2)	3.04	.55
I dislike to be supervised by circuit supervisors because it is a waste of contact hours.	3(12.5)	19(79.2)	0(0)	2(8.3)	2.96	.69

Table 13 continued

Variable	SA f (%)	A f (%)	D f (%)	SD f (%)	Mean	Std
I hate to be supervised by the head because he/she appreciates the little effort I put.	5(20.8)	14(58.3)	5(20.8)	0(0)	3.00	.66
Weighted/Overall mean					**3.01**	**.58**

n= 24 Scale: 4=Strongly Agree (SA), 3=Agree (A), 2=Disagree (D), 1=Strongly Disagree (SD)

In addition, the item "I hate to be supervised by the circuit supervisors because they impose their teaching methods on me" had majority (91.7%) disagreed. The mean of the item was 3.1 and standard deviation was .78. The item "I dislike to be supervised by circuit supervisors because they carry the supervision as fault finding activities" majority (95.8%) Disagreed. This had a mean score of 3.0 and standard deviation of .55. The item "I like to be supervised by the headteacher because he/she appreciate the little effort I put" had substantial number of teachers (79.2%) Agreed. The mean of the responses to the item was 3.0 whiles the standard deviation was .66.

Research Question 2

What are the attitudes of basic school mathematics teachers toward instructional supervision in the below average, average and above average achieving schools?

Table 14 presents the attitude of basic school mathematics in the below average performing school in the metropolis.

Results from table 14 show that all the items had favourable responses. Majority of the items (8 out 14) had mean scores of 3.0 and above. The overall mean score of the items was 3.0 and standard deviation of .62. This

shows that generally teachers in the below average achieving schools had positive attitude towards supervision. The item "I hate to be supervised by headteacher because I have similar ability as him/her", majority (96.4%) disagreed. The mean score was 3.2 and the standard deviation was 0.62.

Table 14: *Attitudes of Mathematics Teachers Towards Instructional Supervision in Below Average Achieving Basic Schools*

Variable	**SA f (%)**	**A f (%)**	**D f (%)**	**SD f (%)**	**Mean**	**Std**
I like being supervised by circuit supervisor because he/she is more knowledgeable.	3(5.4)	41(73.2)	10(17.9)	2(3.6)	2.80	.59
I love to see the circuit supervisors because I gain a lot when they supervise my lesson.	5(8.9)	43(76.8)	7(12.5)	1(1.8)	2.92	.53
I like to be supervised by the circuit supervisors because they bring a lot of development to the teaching and learning.	6(10.7)	41(73.2)	7(12.5)	2(3.6)	2.91	.61
I hate to be supervised by my headteacher because I have similar ability as him /her.	16(28.6)	38(67.9)	0(0)	2(3.6)	3.21	.62
I hate to be supervised by my headteacher because he/she always find fault with everything I do.	19(33.9)	37(66.1)	0(0)	0(0)	3.33	.48

Table 14 continued

Variable	SA f (%)	A f (%)	D f (%)	SD f (%)	Mean	Std
I hate to be supervised by the headteacher because it is a waste of time.	15(26.8)	38(67.9)	3(5.4)	0(0)	3.16	.68
I love to be supervised by the headteacher because he/she is more knowledgeable.	8(14.3)	28(5.0)	18(32.1)	2(3.6)	2.75	.75
I like to be supervised by the headteacher because I gain a lot when he/she supervises my lessons.	10(17.9)	40(71.4)	4(7.1)	2(3.6)	3.03	.63
I hate to be supervised the circuit supervisors because they impose their teaching method on me.	10(17.9)	43(76.4)	0(0)	3(5.4)	3.07	.63
I hate to be supervised by the circuit supervisor because I have similar ability as the circuit supervisor.	10(17.9)	46(82.1)	0(0)	0(0)	3.18	.39
I dislike to be supervised the circuit supervisors because they carry the supervision activities as a fault finding activities.	8(14.3)	0(71.4)	0(0)	8(14.3)	2.85	.84
I dislike to be supervised by circuit supervisors because it is a waste of contact hours.	9(16.1)	46(82.1)	0(0)	1(1.8)	3.13	.47

Table 14 continued

Variable	SA f (%)	A f (%)	D f (%)	SD f (%)	Mean	Std
I like to be supervised by the headteacher because he/she appreciates the little effort I put.	16(28.6)	29(51.8)	9(16.1)	2(3.6)	3.05	.77
I love to be supervised by the circuit supervisor because they appreciate the little effort from me.	10(17.9)	35(62.5)	9(16.1)	2(3.6)	2.95	.69
Weighted/Overall mean					**3.02**	**.62**

n= 56 Scale: 4=Strongly Agree (SA), 3=Agree (A), 2=Disagree (D),1=Strongly Disagree (SD)

As shown in Table 14, all the respondents (100%) disagreed to the item "I hate to be supervised by headteacher because he/she finds faults with everything I do." The mean score was 3.3 whiles the standard deviation was 0.48. The item "I hate to be supervised by the circuit supervisor because I have similar ability as the circuit supervisor", also had all the majority (100%) disagreed to it. this had a mean score of 3.2 and the standard deviation of 0.39. Thus, Teachers gained knowledge after supervision unlike Hammond et al (2003), who in their view said teachers feel insulted when they are supervised as the supervisors exercise their superiority over them.

Moreover, the item "I hate to be supervised by headteacher because it is a waste of time", majority (94.6%) was agreed. The mean score was 3.2 and deviation of 0.68. This implies that teachers considered supervision as important activities which bring development to teaching learning in

mathematics. This contradicts, Zepeda and Ponticell (1998, p.69), "resentment between teachers and the supervisors that make teacher feel supervision itself is waste of time". A significant number of the teachers (89.3%) Agreed to the item "I like to be supervised by headteacher because I gain a lot when he/she supervises my lesson". The mean of the item was 3.0 and the standard deviation was 0.63.This confirms the literature, Hart and Bredeson (1996) that supervision brings about development rather than witch haunting.

However, the item "I hate to be supervised by the circuit supervisor because they impose their teaching methods on me", had majority (84.6%) disagreed to it. The mean score to the item was 3.1 and the standard deviation was 0.63. Most of the teachers see and receive supervision as an interactive activity more than imposition of activity and knowledge. Again teachers role are viewed with utmost care and concern throughout the process as discovered by (McGregor & Forlin, 2005).

Again, the item "I dislike to be supervised by the circuit supervisor because it is waste of time", majority (98.2%) disagreed. The mean score was 3.1 while the standard deviation was 0.47. This implies that teachers in the study locale viewed supervision by the circuit supervisor as an activity worthwhile.

The response to the item "I like to be supervised by the headteacher because he/she appreciate the little effort I put", shows that majority (80.4%) agreed. The mean score to the item was 3.1 and the standard deviation was 0.77. The teachers are sometimes praised for the effort they put in. This affirms the view of Figuerro (2004) who said supervision of instruction involves motivating the teacher to explore new instructional strategies but this

seems to contradict the view of Cogan (1973) who said teachers always feel insulted when they are supervised.

Attitudes of the basic school mathematics teachers in the average achieving school towards instructional supervision

The teachers in average performing schools were thus to agrees or disagreed to certain statements to find out their attitudes towards supervision. Table 15 presents the summary of the results.

Table 15: *Attitudes of Mathematics Teachers Towards Instructional Supervision in Average Achieving Basic Schools*

Variables	**SA f (%)**	**A f (%)**	**D f (%)**	**SD f (%)**	**Mean**	**Std**
I like being supervised by circuit supervisors because they are more knowledgeable.	8(14.3)	36(64.3)	10(17.9)	2(3.6)	2.89	.68
I love to see my circuit supervisors because I gain a lot when they supervise my lesson.	13(23.2)	35(62.5)	8(14.3)	0(0)	3.09	.61
I like to be supervised by the circuit supervisors because they being a lot of development to the teaching and learning.	19(33.9)	30(53.6)	6(10.7)	1(1.8)	3.20	.70
I love to be supervised by headteacher because I have similar ability as him/her.	21(3.5)	34(60.7)	0(0)	1(1.8)	3.34	.58

Table 15 continued

Variables	SA f (%)	A f (%)	D f (%)	SD f (%)	Mean	Std
I hate to be supervised by headteacher because he/she finds fault with everything I do.	21(37.5)	35(62.5)	0(0)	0(0)	3.38	.49
I hate to be supervised by the headteacher because it is a waste of time	22(39.3)	33(58.9)	0(0)	1(1.8)	3.35	.59
I like to be supervised by the headteacher because I gain a lot when he/she supervises my lesson.	11(19.6)	38(67.9)	7(12.5)	0(0)	3.07	.56
I hate to be supervised by the circuit supervisors because I have similar ability as the circuit supervisor.	20(35.7)	33(58.9)	0(0)	3(5.4)	3.25	.72
I hate to be supervised by the circuit supervisor because they carry the supervision activities as a fault finding activities.	17(30.4)	39(69.6)	0(0)	0(0)	3.30	.46
I dislike to be supervised by circuit supervisors because it is a waste of contact hours.	14(2.5)	40(71.4)	0(0)	2(3.6)	3.17	.61
I like to be supervised by the headteacher because he/she supervised the little effort I put.	15(26.8)	34(60.7)	7(12.5)	0(0)	3.14	.62

Table 15 continued

Variables	SA f (%)	A f (%)	D f (%)	SD f (%)	Mean	Std
I love to be supervised by the circuit supervisors because they appreciate the little effort from me.	15(26.8)	33(58.9)	4(7.1)	4(7.1)	3.05	.80
I dislike to be supervised by circuit supervisors because they carry the supervision activities as a fault finding activities.	13(23.2)	41(73.2)	0(0)	2(3.6)	3.16	.60
I love to be supervised by my headteacher because he/she more knowledgeable than I.	9(16.1)	21(37.5)	17(30.4)	9(16.1)	2.53	.95
Weighted /Overall mean					**3.13**	**.64**

n= 56 Scale: 4=Strongly Agree (SA), 3=Agree (A), 2=Disagree (D), 1=Strongly Disagree (SD)

Results from table 15 show that majority of the items (12 out 14) received favourable response. The mean score of each of the 12 items was above 3.0. The overall mean for all the item was 3.1. Generally, this shows that teachers in the average performing schools have positive attitude towards supervision. Thus, the item "I love to be supervised by the circuit supervisor because I gain a lot when he/she supervises my lesson," majority (85.7%) agreed. The mean score to the item was 3.09 and the standard deviation was 0.61.

In addition, majority (87.5%) of the respondents said “I like to be supervised by circuit supervisors because they bring a lot of development in the teaching and learning”. The mean score and standard deviation were 3.2 and of 0.70 respectively.

Furthermore, majority (98.2%) disagreed to the item “I hate to supervise by headteacher because I have similar ability as him/her. The mean score was 3.3 whiles the standard deviation was 0.58. Teachers recognize the intellectual ability of the supervisors and expect something worthwhile from their supervisors after the supervision process.

Moreover, all the respondents (100%) disagreed to the statements “I hate to be supervised by the headteacher because he/she finds fault with everything I do” and “I hate to be supervised by the circuit supervisor because I have similar ability as the circuit supervisor The mean score to the item was 3.3 and the standard deviation was 0.58.The item “I hate to be supervised by my headteacher because it is waste of time”, majority (98.2%) disagreed. And this had mean score of 3.4 and the standard deviation of 0.59.

However, majority (87.5%) agreed to the item “I love to be supervised by the headteacher because I gain a lot when he/she supervises my lesson”. This had a mean score of 3.1 and standard deviation was 0.57. The items “I hate to be supervised by the circuit supervisor because he impose his/her teaching methods on me”, and “I dislike to be supervised by circuit supervisor because it is waste of contact hours” had majority (94.6%) disagreed. The mean score was 3.3 whiles the standard deviation was 0.7. The items “I dislike to be supervised by the circuit supervisors because they carried the supervision as fault finding activities”, had the majority (96.4%) been

disagreed. Again this had mean score of 3.2 and the standard deviation was 0.60.Again majority (87.5%) agreed to the item "I like to be supervised by the headteacher because he/she appreciates the little effort I put". The mean to this effect was 3.1 whiles the standard deviation was 0.62.

Furthermore the item "I love to be supervised by the circuit supervisor because he/she appreciate little effort from me", majority (85.7%) agreed. The mean to this effect was 3.1 and the standard deviation of 0.80.

Attitudes of basic school mathematics teachers in the above average achieving school towards instructional supervision

The sixth question was posed to find the attitude of basic school mathematics teachers in the above average achieving school towards supervision. The teachers in the Above Achieving Basic Schools were then asked to express their option on certain statements to reveal their attitude towards supervision. Table 16 summarises the responses given to the attitudinal items by the teacher respondents

Table 16: *Attitudes of Mathematics Teachers Towards Instructional Supervision in Above Average Achieving Basic Schools*

Variables	**SA f (%)**	**A f (%)**	**D f (%)**	**SD f (%)**	**Mean**	**Std**
I like being supervised circuit supervisors because they are more knowledgeable.	7(12.5)	33(58.9)	16(28.6	0(0)	2.84	.63
I love to see the circuit supervision because I gain a lot when they supervise my lesson.	0(17.9)	32(57.1)	13(23.2)	1(1.8)	2.91	.69

Table 16 continued

Variables	SA f (%)	A f (%)	D f (%)	SD f (%)	Mean	Std
I like to be supervised by the circuit supervisors because they bring a lot of development to the teaching and learning.	8(14.3)	33(58.9)	15(26.)	0(0)	2.88	.63
I hate to be supervised by headteacher because I have similar ability as him/her.	1(2.5)	37(66.1)	5(8.9)	0(0)	3.07	.78
I hate to be supervised by my headteacher because he/she always finds fault with everything I do.	17(30.4)	36(64.3)	3(5.4)	0(0)	3.20	.69
I hate to be supervised by the headteacher because it is a waste of time.	18(32.1)	33(58.9)	5(8.9)	0(0)	3.14	.82
I love to be supervised by the headteacher because he/she is more knowledgeable than I.	8(14.3)	22(39.3)	25(44.6)	1(1.8)	2.66	.75
I like to be supervised by the headteacher because I gain a lot when he/she supervises my lesson.	5(8.9)	40(7.14)	9(16.1)	2(3.6)	2.85	.62
I hate to be supervised by the circuit supervisors because they improve their teaching method on me.	7(12.5)	41(73.2)	0(0)	8(14.3)	2.8	.83

Table 16 continued

Variables	SA f (%)	A f (%)	D f (%)	SD f (%)	Mean	Std
I hate to be supervised by the circuit supervisor because I have similar ability as the circuit supervisor.	9(16.4)	43(78.2)	0(0)	3(5.5)	3.05	.62
I dislike to be supervised by circuit supervisors because it is waste of contact hours.	6(10.7)	45(80.4)	0(0)	5(8.9)	2.93	.68
I dislike to be supervised by circuit supervisors because they carry the supervision activities as a fault finding activities.	6(10.7)	40(71.4)	0(0)	10(17.9)	2.75	.88
I like to be supervised by the headteacher because he appreciates the little effort I put.	10(17.9)	41(73.2)	5(8.9)	0(0.0)	3.09	.51
I love to be supervised by the circuit supervisor because they appreciate the little effort from me.	10(17.9)	40(71.4)	0(0)	6(10.7)	3.07	.53
Weighted/Overall Mean					**2.95**	**.69**

n= 56 Scale: 4=Strongly Agree (SA), 3=Agree (A), 2=Disagree (D), 1=Strongly Disagree (SD)

Results from table 16 show that all the items received favourable responses. The mean scores of about half of the items were above 2.9. And the overall mean score for the items was 3.0. The mean scores for the each of

remaining items were also greater than 2.6. This indicated favourable responses to the items. Generally, this shows that basic school mathematics teacher in the above average achieving schools had positive attitude towards supervision.

Majority (75.0%) agreed to the item "I love to see the circuit supervisors because I gain a lot when they supervise my lesson". The mean score of the item was 2.9. This seems to confirm the literature Haris (1985), teachers hold supervision as an important assert that is geared toward profession development.

In addition, majority (91.1%) disagreed the items "I hate to be supervised by headteacher because it is waste of time", "I dislike to be supervised by the circuit supervisors because it is waste of contact hours", "I hate to be supervised by the headteacher because I have similar ability as him/her", and the same majority (91.1%) agreed to the item "I like to be supervised by the headteacher because he/she appreciates little effort I put". The mean scores of the items were 3.1.

Furthermore, majority (94.6%) disagreed to the item "I hate to be supervised by my headteacher because he/she finds fault with everything I do". The mean score of the item was 3.2. Moreover, majority (94.5%) disagreed to the item "I hate to be supervised by the circuit supervisor because I have similar ability as the circuit supervisor". This had mean score of 3.1. Majority (82.1%) said "circuit supervisors do not carry the supervision activities as fault finding activities". The mean score to this effect was 2. 8.

Again majority (89.3%) agreed "I love to be supervised by the circuit

supervisors because they appreciate the little effort from me". This had a mean score of 3.1.

Research Question 3

What goes into instructional supervision of basic school mathematics teaching in the above average, average and below average achieving school?

The teachers were asked to indicate the frequency of supervision they received from their supervisors within the term. Their responses are summarised in Table 17.

Table 17: *Frequency of Instructional Supervisions by the Supervisors*

Variable	VF **f (%)**	S **f (%)**	R **f (%)**	N **f (%)**
How often do you receive supervision from your supervisor?	16(9.5)	90(53.6)	58(34.5)	4(2.4)
How often do circuit supervisors organise pre- supervisory conference with you?	6(3.6)	34(20.2)	84(50)	44(26.2)
How often do you receive pre- conference discussion from your headteacher?	16(9.5)	67(39.9)	58(34.5)	27(16.1)
How often do you receive post supervision conference from your supervisor?	20(11.9)	66(39.3)	58(34.5)	24(14.3)
How often do you receive post conference discussion on supervision from your circuit supervisor?	9(5.4)	71(42.3)	55(32.7)	33(19.6)

n = 168, VF= Very Frequent, S= Sometimes, R= Rarely, N= Never, f= frequency

Results from Table 17 show that the majority 106(63.1%) of teachers said they received supervision from their supervisors either very frequent or sometimes.

However, about half of them said this was frequently done without pre-supervisory conference while about quarter of them said they never receive pre-supervisory conference from their circuit supervisors. On other hand 88(52.3%) said supervision was concluded without post-supervisory conference. Moreover about one fifth of them said they never receive post-supervisory conference from the circuit supervisors. This development seems to contradict Cogan (1973), supervision must involve the teacher and supervisor in the entire supervisory process.

The teachers were asked to indicate the average number supervision they received from circuit supervisors within the term for the mathematics teacher. The responses are shown in Table 18.

Table 18: *Distribution of Instructional Supervisions from the Circuit Supervisors' in a term*

Supervision	**Frequency**	**Percentage**
1	32	20.8
2	53	34.4
3	39	25.3
4	12	7.8
5	12	7.8
6	3	1.9
7	1	.6
11	2	1.3
Total	**154**	**100**

n=154, source field data (2013)

Results from Table 18 show that majority 148(96.2%) received 1-5 supervisions on the average from the circuit supervisor within the term with 6(3.8%) received 6-11 on the average from the circuit supervisors. The responses show that teachers did not receive enough supervision from the circuit supervisor. The results show that supervision is common to most the teachers within the study locale and this have great influence on teachers attitude towards supervision. This seems to contradict Glatthorn (2007), who placed emphasis on the need for regular supervision in order to improve the attitude of the teacher towards it.

The teachers were asked to indicate the number of supervision they receive from the headteacher. The responses are displayed in Table 19.

Table 19: *Distribution of Instructional Supervisions from the Headteachers in a term*

Supervision	**Frequency**	**Percentage**
1	16	10.3
2	22	14.2
3	37	23.9
4	19	12.3
5	13	8.4
6	16	10.3
7	10	6.5
8	5	3.2
9	1	.6
10	11	7.1
11	2	1.3
12	1	.6
13	2	1.3
Total	**155**	**100**

n=155, source field data (2013)

Results from Table 19 show that majority 107(69.1%) received an average of 1 -5 supervisions within a term, with the minority 48(30.9%) averagely received 6- 13 supervision within the term from the headteacher.

This implies that supervision was not frequently organized at the basic level for the mathematics teachers by internal supervisors.

Teacher Respondents views on what Circuit Supervisors do when supervising Teachers' Lesson

Inspect lesson plan

Check class attendance

Observe the teaching process

Ask problems of the class

Appreciate teacher's effort on lesson delivery

Inspect exercise books of pupils

The results indicate that supervisors were only concentrated in the classroom activity without engaging the teacher in effective clinical supervision. This can be observed from the comments like inspect lesson plan, check class attendance and observe teaching process, by the respondents. This seem to contradict the literature, Cogan (1973), who indicated that many times teachers expect their involvement in planning of supervision prior to actual visit of headteacher or circuit supervisors.

Again unfavourable attitude is likely to be sustained if pre-supervisory activity which is very essential tool to drive away any unfavourable attitude towards supervision is missing (Sergiovanni & Starrat, 2002).

Teacher Respondents Views on what Headmasters do when Supervising Teachers' Lesson

Vet lesson note

Check class attendance

Observe lesson quietly as teacher interacts with pupils

Again teachers' involvement at beginning of the supervisory activity was missing on the part of the headteacher too. Kupfunde (1990) indicated that teachers usually associate instructional supervision with rating of teachers and inspecting and evaluating or more popularly supervision. This can be observed from the following comments like Inspection of lesson note, unaware visit of circuit supervisors for supervision and commenting on the lesson note, by the teacher respondents.

Teacher Respondents Views on What Supervisors do after Supervising Teachers' Lesson

Discusses teacher's strengths and weaknesses and appropriate solutions suggested.

Visit the head teacher at his/her office before leaving the school

He /she also comments on the lesson note especially if it is not detailed

The responses from the teacher respondents show that supervisors mostly carry out the post-supervisory conference with teachers. This can be deduced from the comment like discusses my weakness and strength with me.

Table 20 presents the supervisors' views on what goes into supervising of mathematics teaching at the basic school.

Table 20: *Supervisors Views on What Goes into Supervising Mathematics Teaching at the Basic Schools*

Variables	**SA f (%)**	**A f (%)**	**D f (%)**	**SD f (%)**	**Mean**	**Std**
Supervision is about inspection of lesson note.	2(6.7)	10(33.3)	10(33.3)	8(26.7)	2.20	.92
There is limited on time for me to carry out pre-conference discussion for the lesson.	2(6.7)	18(6.0)	4(13.3)	6(2.0)	2.53	.89
There is limited time for me to carry out post conference discussion with the teacher.	2(6.7)	16(53.3)	7(23.3)	5(16.7)	2.50	.86
Most teachers are of the found unprepared for supervision.	3(1.0)	19(6.3)	7(23.3)	1(3.3)	2.80	.66
I often inform the teacher before. supervision session	5(16.7)	7(23.3)	15(5.0)	3(1.0)	2.46	.89
I often tell teachers to do what I ask them because I am more knowledgeable.	2(6.7)	3(1.0)	12(4.0)	13(43.3)	1.80	.87
Supervision is identified as fault findings and shortcomings.	3(1.0)	6(2.0)	9(3.0)	12(4.0)	2.00	1.01
There should be pre conference discussion towards the classroom supervision.	6(2.0)	20(66.7)	3(1.0)	1(3.3)	3.03	.67
Teachers are to be made aware of the activity only on the day of supervision.	2(6.7)	10(33.3)	10(33.3)	8(26.7)	2.20	.92

Table 20 continued

Variables	SA f (%)	A f (%)	D f (%)	SD f (%)	Mean	Std
Supervisors are to inform the teacher on what they would be expecting.	6(2.0)	9(3.0)	10(33.3)	5(16.7)	2.53	1.01
I usually enter the class after the lesson has started.	1(3.3)	2(6.7)	17(56.7)	10(33.3)	1.80	.71
Clinical supervision is a waste of time therefore I find it demanding to carry it out.	0(0)	5(16.6)	11(36.7)	14(46.7)	1.65	.72

n= 30 Scale: 4=Strongly Agree (SA), 3=Agree (A), 2=Disagree (D), 1=Strongly Disagree (SD)

The results from table 19 show that majority (60%) of the supervisors disagreed item "supervision is about inspection of lesson note". The mean score to the item was 2.2. The above analysis indicates that supervisors were aware of the supervisory processes. Thus the same significant number of supervisor respondents said they do not inform teachers before supervision session. This resulted in getting more teachers unprepared for supervisory activities. Thus majority (73.3%) said "most teacher are often found unprepared for supervision". The mean of the responses to the item was 2.8

For instance, majority (66.7%) of the respondents were Agreed that there is limited time for me to carry out pre conference discussion for the lesson. The mean of the responses to the item was 2.5. Furthermore, majority (60.0%) said "there is limited time for them to carry to carry post conference discussion with the teacher". The mean of the responses to the item was 2.5.

Majority 70.0%) disagreed that "Supervision is identified as fault

findings and shortcomings, but they have limited time to organize pre-supervisory activity with the teachers. This had a mean score of 2.6. This indicated that supervisors carry out supervisory activities to support and ensure teacher development. In addition half of the teachers agreed that "supervisors are to inform the teacher on what they would be expecting". The mean of the responses to the item was 2.5. Again majority (83.4%) Disagreed that "clinical supervision is waste of time; I find it daunting to carryout". The mean of the responses to the item was 1.7.

The supervisors respondents were asked to indicate the number of time they organise supervision with basic school mathematics teachers. The result is summarised in table 21.

Results from table 21 show about majority (53.3%) of the supervisors said they supervised the mathematics teacher either very frequently or sometimes. However, the same number of supervisors said this is sometimes done without pre-supervisory activity. Exactly half of the supervisors said they frequently organized post- supervisory activity with the teachers. The result also indicated that majority (60%) of the supervisors either very frequently or sometimes organized classroom supervision with the mathematics teacher.

Table 21: *How Often do Supervisors Organise Instructional Supervisions for Basic School Mathematics Teachers*

Variables	**VF f (%)**	**S f (%)**	**R f (%)**	**N f (%)**
How often do you supervisee the mathematics teachers in your schools?	3(1.0)	13(43.3)	13(43.3)	1(3.3)
How often do you organise pre conference discussion with mathematics teachers in your circuit?	2(6.7)	12(4.0)	12(14.0)	4(13.3)
How often do you organise post conference discussion with mathematics teachers after the Supervision?	4(13.3)	11(36.7)	11(36.7)	4(13.3)
How often do you carry out classroom supervision with the mathematics teacher?	3(1.0)	15(5.0)	11(36.7)	1(3.3)

What do you do as Circuit Supervisor When Supervising?

Report at headmaster's office to announce my presence.

Sit at the back of the classroom and watch the teacher while teaching.

Read teachers lesson plan to find out if they are teaching what was written in the plan.

Discuss strength and weakness of teacher after lesson delivery

Check punctuality and regularity of teacher through the time book

What Supervisors Look for When Supervising?

Subject matter knowledge of teacher

Skills in adopting teaching methods

Art of self in the teaching skills

How motivated the teacher in teaching

Lesson note preparation

Sitting arrangement of students

Effective use of teaching and learning materials

Proper blackboard management

Evenly distribution of questions

Class control and management

TLM's relevant to lesson objectives

Clearly and appropriately stated core points which are related to lesson objectives

Language level of teacher

Involvement of pupils in lesson

Lesson evaluation

Results from the above questions show that majority of the indicated that supervisors don't organize pre-supervisory conference. It shows that the supervisors were concentrated on what happens in the classroom and ignore the post- supervisory conference. Supervisors do not involve the teachers in the supervision activity. This contradicts the assertion made by Glatthorn (2007), the teacher must be involved in the supervisory process, which would make term more likely to follow the recommendation of the principal and the supervisor.

Research Hypothesis

There is no significant difference in the attitudes of basic school mathematics teachers toward instructional supervision in the below average, average and above average achieving school towards supervision.

The research hypothesis sought to find out if there was significant difference in the attitudes towards supervision in the various school types. One way Analysis of variance (ANOVA) between groups was computed to test whether statistically significant differences exist among the means of the three categories of schools. The results are presented in Table 22.

Table 22: *One-Way ANOVA Showing Differences in the Attitude of Teachers in the Three Categories of Schools Towards Instructional Supervision*

Categories of schools	**N**	**Mean**	**Sd**	**F**	**Sig**	**Eta squared**
Below average school	56	3.027	.3096			.06
Average school	56	3.139	.3445	4.976	.008	
Above average school	56	2.949	.3081			

P< 0.05, Source: field data (2013) n= 168

It was found from Table 22 that generally there was significant difference in the attitude of teachers within various school types. (P= 0.008), which is less than 0.05.

To identify the appropriate post hoc multiply to used levenes Test of Homogeneity of Variance conducted. The result is displayed in Table 23.

Table 23: *Levene's Test of Homogeneity of Variances*

Levene's Statistic	**Sig.**
1.545	.216

P< 0.05 Equal variance assumed

Levene's test of homogeneity of variance was also conducted to determine the appropriate post hoc multiple comparison to be used to determine where significant differences actually existed among the categories in view of the fact that the F-test showed significant differences. The results showed that the variances that existed among the three categories of schools were statistically not significant (.216) at 0.05 alpha level (Table 23). This implies that equal variances assumed among the three schools.

Since equal variances were assumed Least Significant Difference (LSD) was chosen as the appropriate post hoc multiple comparison technique for the comparison of the mean differences among the three categories of schools. The results are presented in Table 24.

The results from Table 24 show that the mean score for below average school *(M=3.027, SD=.309)* was not significantly different from the average school *(M=3.139, SD=.345)* and above average school *(M=2.949, SD=.308)*. However, the mean score of the average school *(M=3.139, SD=.345)* was significantly different from above average school *(M=2.949, SD=.308).* The actual difference in mean scores between the three categories of schools was medium. The effect size, calculated using eta squared, was 0.06 (Table 24)

Table 24: *Least Significant Difference (LSD) Post Hoc Multiple Comparison of Categories of Schools*

I	**J**	**mean df(I-J)**	**Std. Error**	**Sig.**
Below Average school	Average school	-.11224	.06069	.066
	Above Average school	.07820	.06069	.199
Average school	Below Average school	.11224	.06069	.066
	Above Average school	.19044*	.06069	.002
Above Average school	Below Average school	-.07820	.06069	.199
	Average school	-.19044*	.06069	.002

P< 0.05, Source: field data (2013) n= 168

Therefore the null hypothesis that stated there is no significant difference between the attitude towards supervision of basic school mathematics teachers from above average, average, and below average achieving schools is rejected. This seems to confirm the literature, Figueroa (2004) the difference in attitude of basic school teacher towards supervision in high performing school and low performing school is significantly high.

Discussion

The results from the study revealed that teacher considered instructional supervision as professional development activity and again see the supervisors as more knowledgeable. Thus, this has positively influence their attitudes toward supervision. Generally the study revealed that of the teacher respondents had positive attitude towards instructional supervision no matter the level and the school type. Instructional Supervision was not frequently organised at that the basic school yet the few supervisions organised was often done without pre-supervisory conference.

It was revealed that teachers in all the various school types have positive attitudes instructional supervision. Besides the attitude of basic school mathematics teachers in the average achieving school was better than the attitude of basic school mathematics teachers in above average achieving school. This might be that teachers in the average achieving schools considered instructional supervision as an activity that helped and promoted their professional development (Sergiovanni & starratt 2002). But there was no significant difference between the attitudes of basic school mathematics teachers in above and below average achieving schools; and below and average achieving schools.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary of the findings of the study, conclusion drawn and recommendations made for practice. The chapter also presents areas for further research.

Summary

The purpose of the study was to explore the attitude of basic school mathematics teachers towards supervision in the Cape Coast Metropolis. It also sought to investigate how supervision of mathematics teaching and learning at the basic level is done.

The following questions and null hypothesis were posed to guide the study;

1. What are the attitudes of basic school mathematics teachers toward instructional supervision?
2. What are the attitudes of the basic school mathematics teachers in the above average, average and below average achieving school toward instructional supervision?
3. What goes into supervision of mathematics teaching in the above average, average and below average achieving schools?

Ho: There is no significant difference in the attitude of basic school mathematics teachers towards instructional supervision in below average, average and above average achieving school.

The population for the study comprised the basic school mathematics teachers, headteachers and circuit supervisors in the Cape Coast Metropolis. The sampling techniques employed to select the schools and the respondents for the study were stratified and simple random sampling methods. A total sample size of one hundred ninety-eight (198) was used. This was made up of 168 teachers, 24 headteachers and 6 circuit supervisors. The stratified random sampling was used to categorise the schools, simple random sampling was used to select the school from the various school types (below average, average and above average achieving schools) while purposive sample was used to select the teacher and the supervisors.

The instrument used for the study was questionnaire. A reliability coefficient 0.87 and 0.81 were obtained for teachers and headteachers and circuit supervisors questionnaires respectively. These were indications that the instruments were reliable. The statistical tool used for the data were descriptive statistic such as mean and standard deviation and frequency counts. Again Inferential statistics thus, "One-way ANOVA was used to analyse the null hypothesis.

Summary of the Main Findings

1. Generally basic school mathematics teachers had positive attitude towards instructional supervision. Eight out of the fourteen (8 out of 14) items that tested the attitude of basic school mathematics teachers towards instructional supervision had a mean score of above 3.0. The overall mean for the items was 3.04. This implies that majority disagreed to the negative items and agreed to the positive items. Majority (95.3%) of the teachers

either disagreed or strongly disagreed to the item "I hate to be supervised by my head teacher because I have similar ability as him/ her". Again, (98.2%) also disagreed or strongly disagreed to the item "I hate to be supervised by headteacher because it is waste of time". majority, (86. 3%) either agreed or strongly agreed to the item "I like to be supervised by my headteacher because he/she appreciate the little effort I put."

2. The study also revealed that generally, primary school mathematics teachers had positive attitude towards instructional supervision. Eleven out of fourteen (11 out of 14) of the items that tested the attitude of primary school mathematics teachers towards instructional supervision had a mean score of not less than 3.0. The overall mean for the items was 3.0. This indicates that majority of the teachers either agreed or strongly agreed to the positive items and disagreed or strongly disagreed to the negative items. Majority (94.5%) either disagreed or strongly disagreed to the item "I hate to be supervised by my headteacher because he/she always finds fault with everything I do". Again majority (97.2%) either disagreed or strongly disagreed to the item "I hate to be supervised by my circuit supervisor because I have similar ability as the circuit supervisor." Moreover, majority (95.9%) either disagreed or strongly disagreed to the item "I dislike to be supervised by circuit supervised because it is waste of contact hours".
3. Generally, the JHS mathematics teachers had positive attitudes toward instructional supervision. Majority of the items (10 out of 14) that tested the attitudes of JHS mathematics teachers towards instructional supervision had a mean score of 3.0 and above and overall mean score of

3.0. This implies that the majority either agreed or strongly agreed to the positive items and disagreed or strongly disagreed to the negative items. All the respondents either disagreed or strongly disagreed to the items "I hate to be supervised by headteacher because I have similar ability as him/her", "I hate to be supervised by my headteacher because he always finds fault with everything I do" and "I hate to be supervised by the headteacher because it is a waste of time".

4. Generally, basic school mathematics teachers in the below average achieving school had positive attitude towards instructional supervision. Majority (9 out of 14) of the attitudinal items had a mean score of 3.0 and above. The items had overall mean score of 3.0. This implies that they agreed or strongly agreed to the positive items and disagreed or strongly disagreed to the negative items. All the respondents either disagreed or strongly disagreed to the items "I hate to be supervised by headteacher because he/she finds fault with everything I do" and "I hate to be supervised by the circuit supervisor because I have similar ability as the circuit supervisor". Again majority (94.6%) either disagreed or strongly disagreed to the item "I hate to be supervised by my headteacher because it is waste of time".
5. It emerged from the study that generally, basic school mathematics teachers in the average achieving school had positive attitude towards instructional supervision. Twelve out of the fourteen (12 out of 14) items that tested the attitude of basic school mathematics teachers in average achieving schools had a mean score of above 3.0. This implies that majority either agreed or strongly agreed to the positive items and

disagreed or strongly disagreed to the negative items. All of them either disagreed or strongly disagreed to the items "I hate to be supervised by my headteacher because he/she finds fault with everything I do" and "I hate to be supervised by the circuit supervisor because I have similar ability as the circuit supervisor. Majority (98.2%) either disagreed or strongly disagreed to the item "I hate to be supervised by headteacher because I have similar ability as him/her".

6. Generally basic school mathematics teachers in the above achieving schools had positive attitude towards instructional supervision. Majority (10 out of 14) of the items that tested the attitude of basic school mathematics teachers in the above average achieving schools had a mean score of 3.0 and above. The overall mean score for the items was 3.0. This implies that they generally agreed or strongly agreed to the positive items and disagreed or strongly disagreed to negative items. Majority (91.1%) either disagreed or strongly disagreed to the items "I hate to be supervised by the circuit supervisor because it is waste of time" and "I hate to be supervised the headteacher because I have similar ability as him/her". Again, majority (94.5%) either disagreed or strongly disagreed to the item "I hate to be supervised by the circuit supervisor because I have similar ability as him/her".
7. The study revealed that instructional supervision was either very frequently or frequently held at basic schools. Majority (63.1%) of the teachers' respondents said they either very frequently or frequently receive supervision. However, majority (76.2%) said this was frequently done without pre- supervisory conference from their supervisors. Yet most

teacher said instructional supervision was geared toward professional development.

8. Mean score for below average school *(M=3.027, SD=.309)* was not significantly different from the average school *(M=3.139, SD=.345)* and above average school *(M=2.949, SD=.308)*. However, the mean score of the average school *(M=3.139, SD=.345)* was significantly different from above average school *(M=2.949, SD=.308)*. The actual difference in mean scores between the three categories of schools was medium. The least significant difference (LSD) was chosen as appropriate Post Hoc Multiple Comparison technique for the comparison of the mean differences among the three categories of schools. The mean score of above average achieving schools was significantly different from the average achieving schools *(P=0.002*). The effect size, calculated using eta squared, was 0.06. Therefore the null hypothesis that stated there is no significant difference in the attitude of basic school mathematics teachers towards instructional supervision in above average, average, and below average achieving schools was rejected.

Conclusions

The following conclusions are made based on the findings of the study;

The basic school mathematics teachers had positive attitude towards instructional supervision. Both primary school and Junior High School mathematics teachers had positive attitude towards instructional supervision.

Basic school mathematics teachers in the various school types (Above average, average and below average achieving schools) had positive attitude

towards instructional supervision. Supervision of teachers appears to be frequently organized. Supervision appears to be organised without pre-supervisory conference.

The attitude of teachers in the average achieving schools was significantly different from the above average achieving schools. Thus, the attitude of basic school mathematics teachers in the average achieving school was better than those in above average schools.

Recommendations

Based on the findings and conclusions drawn from the study, the following recommendations are made for policy and practice.

1. The study recommends that Ghana Education Service must design a well-planned programme of instructional supervision which will involve pre-supervisory conference. This will help promote and sustain quality of instructional supervision at the basic schools level.
2. Ministry of Education and Ghana Education Service should ensure that haedteachers and the circuit supervisors engage teachers in proper clinical supervision and go beyond the inspection of lesson notes. This will help improve the professional development of the teachers and ensure sustained favourable attitude towards instructional supervision.
3. Ministry of Education should equip Supervisors and teachers with supervisory processes in the execution of their roles as supervisor and supervisee to improve and sustain healthy environment and positive attitude of the teacher towards instructional supervision.

Recommendations for Future Research

1. Basic school mathematics teachers seem to have positive attitude towards instructional supervision in the study locale, to have a clearer picture of the situation it will be recommended that further study should be conducted to find out if it reflects in the other disciplines at the basic level.
2. The research should also be conducted in the same area to find out factors that influence the positive attitude towards instructional supervision.
3. Research on the topic should be extended to other districts and municipals within the region to have broader picture of the topic.

REFERENCES

Acelajado, M. J. (2001). *The impact of using technology on students' achievement, attitude and anxiety in mathematics*. Retrieved December 12, 2006 from http/www. ICMG organizer.

Acheson, K. A. (1987). *Techniques in the clinical supervision of teachers: Perspectives and in-services applications*, (2nd ed.). New York: McGraw Hill Book Company.

Aiken, L. H. (2002). *Attitude and related Psychosocial constructs. Theories, assessment and research*. University of Mexico: Sage Publication.

Aikins, L. H., Clarke, S. P., & Sloame, D. M. (2001). *Nurses' report on Hospital Care in five countries*. Health Aff (milwood), Thousand Oaks: Sage.

Aladejana, F. O. (2000). An assessment of science classroom learning environment. *Ife Journal of Behaviour Research, 2*(2), 23-30.

Alghazo, E. M., & Gaad, E. N. (2004). General education teachers in the United Arab Emirate and their acceptance of inclusion of students with disabilities [Electronic Version]. *British Journal of Special Education, 31*(2), 94 -99.

Allport, G. W. (1996). *Pattern and growth in personality*. London: William Clowes and Sons Ltd.

Anderson, E. N., & McFarlane, J. (2000). *Community as partner: theory and practice in nursing.* New York: Lippincott.

Anamuah-Mensah, J., Mereku, D. K., & Ghartey-Ampiah, J. (2008). *Timss 2007 Ghana report; Findings from IEA's trend in international*

mathematics and science study at eight grade. Accra: Adwinsa publication (Gh) Ltd.

Armstrong, T. R. (2006). Revisiting the johari window: improving communication through self-disclosure and feedback (Electronic Version). *Human Development*, *27*(2), 10 – 14.

Baron, R. A., & Byme, D. (1997). *Social psychology* (8th ed.). Boston: Allyn and Bacon.

Bolton, G. (2010). *Reflective Practice: Writing and Professional Development* (4th ed.). Thousand Oaks: Sage

Brunning, R., Schraw, G., & Ronning, R., (1999). *Cognitive psychology* (8th ed.). Upper Sandle River, NJ: Prentice Hall.

Bryant, R. & Graham, M. C. (2002). Advanced practice nurse: A study of client satisfaction Research. *Journal of American Association of Nurse Practitioners, 14* (2), 88-92.

Burke, K., & Sutherland, C. (2004). Attitude towards inclusion: knowledge vs experience (Elecronic Version). *Education, 125*(2), 163 – 172.

Burns, N., & Grove, S. (2009). *The practices of nursing research: Appraisal, synthesis, and generation of evidence*. St. Louis, MO: Saunders Elsevier.

Burns, R. B. (2000). *Social Research Methods*. New York: Oxford University Press.

Clendon, J. & White, G. (2000). The flexibility of nursing practioner – led primary health care clinic in a school setting: A community needs analysis. *Journal for Advance Nursing, 34* (2), 171- 178.

Cogan, M. L. (1973). *Clinical supervision.* Boston: Houghton Mifflin.

Corcoran, C. A., & Leahy, R. (2003). Growing professionally through reflective practice. *Kappa delta Pi Records, 40*(1). Retrieved October 15, 2013 from http://first search.oclc.org.

Cramer, R.V. (1999). *Administration and supervision in the elementary school*. New York: Harper.

Creswell, J. W., & Clark, V. (2007). *Research Design: qualitative, quantitative and Mixed Method Approches*. Thousand Oaks, CA: Sage.

Creswell, J. W. (2007). *Educational research* (3rd ed.). Thousand Oaks, CA: Sage.

Davis, E. K., & Ampiah, J. G. (2011). An investigation of primary and JHS teachers' attitudes toward the teaching of mathematics. *Ghana Journal of Education and Teaching, 12*,137-245.

Dessler, G., Munro, C. R., & Cole, N. D. (2011). *Management of human resource* (3rd ed.). Toronto, Canada: Pearson Prentice Hall.

Dixon, S. (2005). Inclusion –not segregations or integration is where a student with Special needs belongs [electronic version]. *The Journal of educational thought, 39* (1), 33-53.

Dube, S. C. (1990). *Perception of the secondary school Teachers towards supervision*. Harare: UZ. Sage.

Edmunds, A. L., & Edmunds, G. A. (2008). *Special education in Canada*. Toronto, ON: McGraw- Hill Ryerson

Eggen, P., & Kauchak, D. (2001). *Educational psychology: windows on classrooms*. New Jersey: Prentice Hall, Inc.

Eggen, P., & Kauchak, D. (2002). *Strategies for teachers: teaching content and thinking skills* (4th ed.). Needham heights, M. A: Allyn and Bacon.

Ehindero, O. J. (1990). A Discriminant Function Analysis of Study Strategies, Logical Reasoning Ability and Achievement across Major Teacher Undergraduate Curricula. *Research in Education, 44*(1), 1-11.

Ehindero, O. J., & Alibade, Y. A. (2000). What our students say about how we teach. *Ife Journal of Educational. Studies,* 7(1), 1-9.

Erickson, f., & Gutierrez, K. (2002). Culture, rigor, science in education researcher. *Educational Research, 31*(8), 21-24.

Etsey, Y. K. A. (2005). Causes of low performance of primary school pupils in the Shama sub metro of Shama Ahanta East Metropolitan Assembly, (SAEMA) in Ghana. Present at the Regional Conference on Education in West Africa, Dakar. Senegal. *Exceptional Children, 42,* 136-144.

Everard, B., & Moris, G. (1990). *Effective school management*, (2nd ed.). London: Paul Chapman.

Fazio, R. H., & Roskes, D. (1994). *Acting as we feel*: *when and how attitudes guide Behaviour.* In S. Shavitt & T. C. Brock (Eds.), Persuasion. Boston: Allyn & Bacon.

Figueroa, R. A. N. (2004). *Actual and desired teacher attitudes towards supervision of instruction and instructional strategies in pedagogical and curriculum areas in high and low performance schools of Fajardo*. Educational Region Puerto Rico. Unpublished doctorate dissertation, Dowlins College, Long Island: New York.

Fishbein, M., & Ajen, I. (2010). *Predicting and changing behaviour: the reasoned action approach.* New York: Psychology Press.

Fraser, K. (2000). Supervisory behaviour and teacher satisfaction. *Journal of Educational Administration, 18*(2), 224-227.

Fullan, M. G. (1998). Leadership for 21st century: Breaking the bond of dependency. *Educational leadership, 55*(5), 6-10.

Fuson, K. C., Carroll, W.M., & Drueck, J. V. (2000). Achievement result for second and third grades using the standards- based curriculum, Everyday Mathematics. *Journal for Research in mathematics Education, 31*, 27-95

Gall, M. D., Borg, W., & Gall, J. P. (2002). *Educational research. An introduction* (7th ed.). Boston: Allyn and Bacon.

Ghana Education Service (2012). L*eadership for learning: a manual/handbook for headteachers and Circuit Supervisors*. Accra: Author.

Ghana Education Service Cape Coast Metropolis. (2012*). Report on students' performance in B.E.C.E*. Cape Coast: Author.

Gibson, S. E., Fludra, A., Bagenal, F., Biesecker, D., Del Zanna, G., & Bromage, B. (1999). First citation in article. In Press. *Geophys. in Press Research, 104, 10005-10007*

Glanz, J. (2000). *Paradigm debates in curriculum and supervision: modern and postmordern perspectives.* Westport conn: Bergin and Garvey.

Glatthorn, A. A. (2007). *Co-operation professional development peer centred option for teaching growth*. New York: Educational Leadership.

Glickman, C. C., Gordon, S. P., & Ross-Gordon, J. M. (2009). *The basic guide to supervision and instructional leadership*. (2nd ed.). Boston, MA: Allyn and Bacon.

Glickman, C. D. (1992). *Supervision in transition*. Alexandria, VA: ASCD.

Glover, J., & Ronning, R., (1990). *Cognitive psychology for teachers*. New York: Macmillan

Greenfield, W. (1987). *Instructional leadership*: *concepts, issues and controversies.* Toronto, Canada: Allyn & Bacon

Hammond, H., Ingalls, I., & Lawrence, K. (2003). Teachers' attitudes toward inclusion: survey results from elementary teachers in three southwestern rural school district. *Rural special Education Quarterly, 22*(2). Retrieved October 14 2007, from Ebscohost research Database.

Harris, B.M. (1985). *Supervision behaviours in education*. (3rd ed.). New Jersey: Prentice Hall.

Hart, W. A., & Bredeson, V. P. (1996). *The Principalship- A Theory of professional learning and practice.* New York: Graw Hill.

Hickey, R. (1997), *language use and attitude in Ireland. A preliminary evaluation*. Buckingham, UK: Hughes and Paterson.

Igwe, S. O. (2001). *Supervision, Evaluation and quality control in Education in Nwagwu, N. A. Current Issues in educational Management in Nigeria*. Benin City: Ambik Press Ltd

Jones, J. (1993). *Bad Blood*: *The Tuskegee Syphilis experiment* (3rd ed.). New York: Free Press

Johnson, D. (1994). *Research method in Education Management*. London: Longman.

Kapfunde, C. L. (1990). *Clinical Supervision in the Zimbabwean Context*. Harare: Zimbabwe Publishing House.

Kubiszyn, T., & Borich, G. D. (2013). *Educational Testing and Measuring Classroom*. (10th ed.). Retrieved November 2013 from http/www.eu. Wiley.com

Langton, N., Robbins, P. S., & Judge, A. T. (2011). *Fundamentals of organisation behaviour*, (4th ed.). Toronto: Pearson Education.

Laridon, P., Mosimege M. & Mogari, D. (2005). Ethnomathematics Education in South Africa. In: R Vithal, J Alter & C Keitel. *Researching Mathematics Education in South Africa: Perspectives, Practices and Possibilities.* Pretoria: HSR Press.

Leedy, P. D. (1993). *Practical research: planning and design*. (5th ed.). New York: McMillan.

Leedy, P. D. & Ormrod, J. (2001). *Methods used in research: planning and desig*n. New York: McMillan.

MacNally, C. & Isbro, E. (2001). *Elementary school Administration and Supervision.* New Jersey: Prentice Hall.

Mankoe, J. O. (2002). *Educational Administration and Management in Ghana*. Cape Coast: UCC Press.

Marks, J. R. (1985). *Handbook of educational supervision*. Boston: Allyn and Bacon Inc.

Marquez, L., & Kean, L. (2002). Making supervision supportive and sustainable: New approaches to old problems. *Maximizing Access and Quality, 10*(4), 4.

Martin, W., Loch, S., Cooley, L., Dexter, S., & Vidakovic, D. (2009). Integrating learning theories and application-based modules in teaching linear algebra. *Journal of Linear Algebra Application,* 432, 2089-2099.

McGregor, S. J. R., & Forlin, C. (2005). Attitude of students peer with disabilities: Rellocation students from an education support centre to an inclusive middle school setting. *International journal of whole schooling*. . Retrieved November 1, 2005 from http://www. Wholeschooling.net/journal of the whole schooling/IJWSIndex.html.

Ministry of Education (1994). *Headteachers Handbook.* Accra: GES.

Ministry of Education (2002). *Addendum to Headteachers' Handbook.* Accra: PaperPen Systems Ltd.

Ministry of Education Youth & Sport (2004). *Timms reports on grade eight level*. Accra: GES.

Mouton, P. R. (2011). "*Unbiased stereology: A concise guide*." Baltimore, Maryland: Johns Hopkins University Press.

Neagley, R. L., & Evans, N. D. (2004). *Handbook for supervision of instruction.* New York: Prentice Hall Inc.

Nitko, J. A. (2000). *Educational Assessment of students* (3rd ed.). New York: Prentice Hall.

Nisbet, S., Dole, S., & Warren, E. (1997). Cooperative professional development for mathematics teachers: A case study. In F. Biddulph, K. Carr (Eds.), *People in mathematics education* (Proceedings of the 20th Annual Conference of MERGA, Rotorua.). (pp.369-375). Sydney: MERGA.

Ofori, R. (2006). Measuring motivational orientation towards support-seeking: the development and predictive validity of the Motives for Tutorial Support-Seeking Questionnaire (MTSSQ). *Nurse Education Today, 26*, 228-239.

Olson, J. C., Colasanti, M., & Trujillo, K. (2006). Promoting Growth for Prospective Teachers Using Cognitive Dissonance. In J. Novotna, H. Moraova, M. Krakta & N. Stehlikova (Eds.) *Proceedings of the thirtieth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, 4*, 281-288.

Olson, D. R. (2004). The triumph of hope over experience in the research for work. A response to slavin. *Educational Researcher, 33*(1), 24-26.

Polit, D. F., Beck, C. T., & Hungler, B. P. (2001). *Essential of nursing research method, appraisal and utilization*. (5th ed.). Philadelphia: Lippincott.

Polit, D. F., & Hungler, B. P. (1999). *Nursing research, Principle and method* (6th ed.). Philadelphia Lippincott.

Reepen, N., & Barr, S. (2010). The attitude of teachers towards supervision. *Journal of experimental education, 4,* 237-301.

Riordan, J. E., & Noyce, P. E. (2001). The Impact of two standard-based Mathematics Curricula on Student achievement in Massachusetts. *Journal for Research in Mathematics Education, 32*, 368-98.

Schorr, J. (2000). *Ethic and Social responsibility, Entrepreneurship*. South Nashville Tennessee: Vanderbilt University Press.

Schwartz, B. (2000*).* Self- determination; the tyranny of freedom. *American Psychologist, 55*, 79 - 88.

Sergiovanni, T., & Starrat, R. J. (2002). *Supervision for human perspective.* New York: McGraw Hill.

Stone, E., & Morris, S. (1972). *Teaching practice: problems perspectives*. London: Methuen Wiles.

Triandis, H. C. (1971). *Attitude and attitude change*. New York: Wiley.

Wentzel, C. G. (1997). Students' perception of caring teachers' classroom motivation, and students' subjectivity interpretation of teachers' behaviour. *Journal Education*, Retrieved September 14, 2013 from http/www.accadamic journals.org

White, C. J. (2005). *Research: a practical guide*. Pretoria: Ithuthuko.

Wiles, K., & Lovell, J. (1975). *Supervision for better schools.* New York: Prentice Hall.

Zepeda, S. J., & Ponticell, J.A. (1998). At a cross-purpose what do teachers need, want, and get from supervision? *Journal of Curriculum and Supervision, 14*(1), 68-87.

Zepeda, S. (2003). *The Principal as an instructional leader: a handbook of Supervision, Larchmont*. New York: Eye on Education

APENDIX A

Teachers Questionnaire

University of Cape Coast

College of Education Studies

Department of Basic Education

Dear Sir/Madam,

This questionnaire seeks information about attitude of basic school mathematics teacher towards supervision. Your response to this will be much appreciated and would be held confidential. Your honest response will go a long way to improve the supervision of mathematics teaching and learning in the basic schools in Ghana.

Section A: background characteristics

1. Name of school ……..

Instruction: Tick (√) and supply where applicable

2 Sex: Male ☐ Female ☐

3. Age: less than 20 ☐

20– 29 ☐

30– 39 ☐

40 -49 ☐

50 and above ☐

4. Level at which you teach:

Lower Primary ☐

Upper Primary ☐

J H S ☐

5. Qualification

S. S. C. E ☐

Diploma ☐

Degree ☐

Masters ☐

6. Professional Status

Trained ☐

Untrained ☐

7. Number of years taught as mathematics teachers

Less than 5 years ☐

5 – 10 years ☐

11 – 15 years ☐

16 – 20 years ☐

21 – 25 years ☐

26 and above ☐

Section B: Supervision of Mathematics Teachers

8. On the average, how many supervisions do you obtain in a term from your circuit supervisor? .....

9. On the average, how many supervisions do you receive from headteacher in a term? ……..

10. What does your Circuit Supervisor do when he/she supervise your lesson?

……

……

……

……

……

11. What does your headteacher do when he/she supervise your lesson?

……

……

……

……

……

12. What does the Circuit Supervisor do after classroom supervision session?

……

……

……

……

13. What does the headteacher do after classroom supervision?

……

……

……

……

……

Statement	Very frequent	sometimes	Rarely	Never
14. How often do you receive supervision from your supervisors?				
15. How often do circuit supervisors organize pre supervisory conference with you?				
16. How often do you receive pre conference discussion from your headteaher?				
17. How often do you receive post supervision conference from your headteacher?				
18. How often do you receive post conference discussion on supervision from your circuit supervisor?				

Section C. Attitude towards Supervision

Statement	Strong Agree	Agree	Disagree	Strongly Disagree
19. I like being supervised by circuit supervisor because he/she is more knowledgeable.				
20.I love to see the circuit supervisors because I gain a lot when they supervise my lesson				
21. I like to be supervised by circuit supervisors because they bring a lot of development to the teaching and learning				
22. I hate to be supervised by headteacher because I have similar ability as him/her.				
23. I hate to be supervised by my headteacher because he/she always finds fault with everything I do.				
24. I hate to be supervised by the headteacher because it is a waste of time.				
25. I love to be supervised by the headteacher because he/she is more knowledgeable than I.				
26. I like to be supervised by the headteacher because I gain a lot when he/she supervises my lesson.				
27. I hate to be Supervised by circuit supervisors because they impose their teaching method on me.				

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
28. I hate to be supervised by the circuit supervisor because I have similar ability as the circuit supervisor.				
29. I dislike to be supervised by circuit supervisors because they carry the supervision activities as fault finding activities.				
30. I dislike to be supervised by circuit supervisor because it is a waste of contact hours				
31. I like to be supervised by the headteacher because he appreciates the little effort I put.				
32. I love to be supervised by the circuit supervisors because they appreciate the little effort from me.				

Thank you

APPENDIX B:

Questionnaire for the Circuit Supervisor and Headteachers

University of Cape Coast

College of Education Studies

Department of Basic Education

Dear Sir/Madam,

This questionnaire seeks information about attitude of basic school mathematics teacher towards supervision. Your response to this will be much appreciated and would be held confidential. Your honest response will go a long way to improve the supervision of mathematics teaching and learning in the basic schools in Ghana.

Background Characteristics

1. Circuit …….

2. Sex: male ☐ Female ☐

3. Age:

Less than 20 years ☐

20 -29years ☐

30 – 39 years ☐

40- 49 years ☐

50 and Above ☐

4. Number of year as circuit supervisor or headteacher

Less than 5 years ☐

5 – 10 years ☐

11- 15 years ☐

16- 20 years ☐

21- 25 years ☐

26 and above ☐

5. Qualification

Cert A ☐

Diploma ☐

Degree ☐

Masters ☐

Other specify ……

Section B: what goes into supervision?

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
6.Supervision is about inspection of lesson note				
7. There is limited time for me to carry out pre conference discussion before the lesson				
8. There is limited time for me to carry out post conference discussion with the teacher				
9.There is enough time for me to organize pre conference discussion before the lesson				
10. Most teacher are often found unprepared for supervision.				
11. I often tell teachers to do what I ask them because I am more knowledgeable.				
12. I don't inform teachers before embarking on supervisory activities				

Statement	Strongly Agree	Agree	Strongly Disagree	Disagree
13. Supervision is identified as fault findings and shortcomings				
14. There should be pre conference discussion towards the classroom supervision				
15. Teachers are to be made aware of the activity only on the day of supervision				
16. I don't inform teachers on what I will be expecting during the lesson				
17. Clinical supervision is a waste of time; therefore I find it daunting to carry it out.				
18. I usually enter the class before the lesson commence				

19. What do you do as circuit supervisor when supervising?

……

……

……

……

……

Statement	Very frequent	Sometimes	Rarely	Never
20. How often do you supervise the mathematics teachers in your schools?				
21. How often do you organize pre conference discussion with the mathematics teachers in your circuit?				
22. How often do you organize post conference discussion with the mathematics after the supervision?				
23. How often do you carry out classroom supervision with the mathematics teacher?				

24. What do look for when you are supervising?

……

……

……

……

……

Thank you.