THE PROFESSIONAL RELATIONSHIPS BETWEEN

SCHOOL MANAGERS AND THE TEACHING/LEARNING

OF MATHEMATICS IN SELECTED SECONDARY SCHOOLS IN

KAPIRI – MPOSHI DISTRICT

A QUALITATIVE STUDY

BY

JOSEPH, SIKATALI.

A Dissertation submitted to the University of Zambia and Zimbabwe Open

University in partial fulfillment of the requirement for the award of the degree of
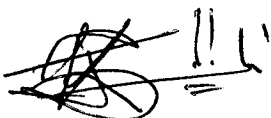
Master of Education in Educational Management.

THE UNIVERSITY OF ZAMBIA.

LUSAKA

2016

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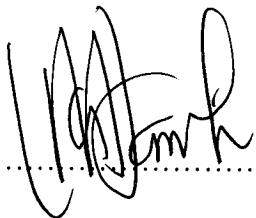
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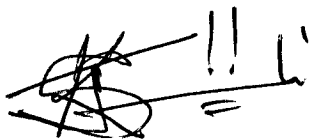
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# DEDICATION

I sincerely dedicate this study to my Parents Mr. and Mrs. Sikatali. Their genuine love, unwavering support and belief in my ability have always spurred me on.

I also dedicate this work to my lovely daughters Jedidiah and Favour Nakatali who I challenge to reach their academic potential and excellency.

And to my dear wife Melba Sipalo Kabelele, my sincere gratitude for her love, economic and financial support which inspired me to achieve my academic potentials.

# ABSTRACT

The success of a school, like any other institution, rests primarily on the dynamics of inspiration, collaboration and team work between the school manager and other members of staff. However, in Kapiri Mposhi district, concerns have been raised by some teachers, parents and other members of the community about the lack of good collaboration and team work between the school manager and teachers in some schools of Kapiri Mposhi district. The study examined the kind of relationship that existed between school managers and the teaching/learning of mathematics in selected secondary schools in Kapiri Mposhi district. A sample of 32 respondents were purposively selected and interviewed. These included eight (8) secondary school managers, [five (5) male and three (3) females] and twenty-four (24) teachers of Mathematics including 3 group interviews. The study was mainly qualitative in nature and used descriptive surveys. Thematic analysis was used to analyze data.

The findings suggested that most teachers of Mathematics enjoyed a good relationship with their school managers and that the relationship inspired them to teach better. Collaboration and team work with their school managers inspired most teachers to teach better. However, other non- interpersonal de-motivating factors were cited such as the deplorable state of Mathematical equipment and latest reference books including graphed blackboards in classrooms.

Arising from these findings, several recommendations were advanced to stakeholders. Government through the Ministry of General Education (MOGE) was urged to put in place elaborate policies and guidelines that would spur increased collaboration of school managers and teachers of mathematics. It was further recommended that the Senior Education Standards Officer (SESO) in charge of Mathematics in the province must address other non-interpersonal de-motivating factors by school managers. Similarly, school managers and teachers of mathematics should maintain and foster cordial and professional interpersonal relationships to enhance the academic performance of pupils in secondary schools.

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# LIST OF ACRONYMS

DEBS:            District Education Board Secretary

ECZ:             Examinations Council of Zambia

MOGE:            Ministry of General Education

PTA:             Parent- Teacher Association

PEO:             Provincial Educational Officer.

SESO:            Senior Education Standards Officer.

# CHAPTER ONE

## INTRODUCTION

### 1.1    Background

The success of a school, like any other institution, depends on the dynamics of team work between the school management and other members of staff. School administration requires collaboration and professional interaction to achieve certain objectives and set goals. The school management need to closely work with the teachers who play a critical role in the teaching and learning of pupils which in turn translates into either good or bad performance. This relationship between school managers and teachers is characterized by various forms of managerial skills, interpersonal interactions, collaboration and team work. Since, the teaching fraternity is characterized by a number of professional and interpersonal relationships that encompass various collegial interactions among the human resource in a particular school. The dynamism of these interactions with the school management in a school tends to follow the kind of leadership that the school management has established in the school. Moreover, these interpersonal interactions seem to affect the level of motivation among the teachers. Kip (2014) pointed out that creating a collaborative environment can breathe new life into a company and reinvigorate employees. He further stipulated that, sharing new ideas and knowledge lets others see things from different perspectives, spurs their own work in new directions, and moves the organization forward.

Bush (2007) also agreed that good communication between the school management and staff helps to build participatory management, which is vital in establishing school management teams. These school management teams are empowered by the school manager as he/she delegates responsibilities to them. Effective communication also establishes the foundation for good professional interactions and a shared vision and mission. In addition, the school's vision and mission helps to focus the attention of teachers and shows the learner the principles for which the school stands. Since the learner is the most important client in the school, there is need to harness his/ her potential to ensure excellent results. The school manager by using her/his managerial skills, must therefore work closely with members of staff to achieve the desired goals of the school. She/he must be aware of factors that affect the motivation of the teaching staff. Some of these factors are intricately linked to the relationship between the school manager and the teachers. In addition, team work exhibited in a school contributes positively to the academic performance of pupils.

Moreover, healthy and vibrant interpersonal interactions between the school management and teachers foster good instructional output. They create a climate that helps the school management and other staffs to work closely as a team. As regards to the subject of Mathematics, it is a well-known fact that Mathematics plays a vital role in the Zambian School Curriculum. It enhances the learners' understanding of the world around and prepares them for further education and challenges in life.

Mathematics is an important tool for the development and improvement of a person's intellectual competence in logical reasoning, spatial visualization, analysis and abstract thought. It also equips learners with vital knowledge, skills and values that are necessary to contribute to the attainment of Vision 2030(CDC, 2013). Furthermore, the Ministry of General Education is now encouraging every child in Zambia to study mathematics as it is regarded by most people as essential (Cockcroft, 1982). Despite the perceived usefulness of mathematics, there have been repeated failures by many learners in Zambia (Nkhata, 1996). According to MOE (1996) the overall unsatisfactory performance in school Certificate is attributable in large measure to poor performance in mathematics and science. Statistics have also shown difficulties in teaching and learning of mathematics. According to the Examinations Council of Zambia Examiners' Report (2014) performance in mathematics at grades 9 and 12 levels over the years have continued to be poor in the nation to date. A number of reasons have been given for this kind of performance in public examinations. MOE (1996) stipulates that, the distressing picture of poor performance in mathematics and science could be attributed to deficiencies at school level in the facilities, resources or the teaching. This continuous poor performance of pupils in mathematics has prompted this study to find out the relationships between school managers and the teaching/learning of mathematics. Do teachers of mathematics have enough teaching and learning materials to address the situation? Or maybe they do not receive the much-needed support from the school managers, or do they work together to find a lasting solution to the problem?

## 1.2    Statement of the Problem

There has been a growing concern by some teachers, parents and other members of the community over the lack of managerial skills, collaboration and team work between the school management and teachers of mathematics in Kapiri Mposhi District.

The District Education Board Secretaries (DEBS) in Kapiri District received reports of some bad relationships that existed between school management and teachers. This might have contributed to pupils' academic performance particularly in mathematics where school managers were not supportive to the Mathematics department in terms of equipping it with rightful resources to use in the teaching and learning of the subject. Could it be that most school managers are not inclined to Mathematics? Or could it be that the management team does not provide its most needed skills to help mitigate the problem? Could it be that management does not provide qualified and experienced teachers to teach the subject? Effective leadership is critical in virtually any type of for-profit or service-based organization. When managers lack the ability to provide direction, coaching and training and motivation for staff, the organizational culture and morale often suffer. Poor leadership can have several negative effects on the organization and staff (Kokemuller, 2013).

This study will therefore endeavour to establish the professional relationship between school managers and the teaching/learning of mathematics in selected secondary schools in Kapiri Mposhi District.

## 1.3    Purpose of Study

The purpose of this study was to examine the relationships that existed between school managers and the teaching/learning of mathematics as well as establishing whether managerial skills, managerial styles, collaboration and team work existed, and how this could affect the teaching and learning of mathematics.

## 1.4    Research Objectives

The objectives of this study were:

1.    To ascertain the Professional relationships that existed between school managers and teachers of Mathematics.

2.    To examine the impact, the relationships between school managers and Teachers of Mathematics have on the teaching and learning of mathematics.

3.    To explore the effectiveness of managerial skills used by school managers to enhance the teaching and learning of mathematics.

## 1.5    Research Questions.

The study will seek to answer the following questions:

1.    What kind of Professional relationships exists between school managers

and Teachers of Mathematics?

2.    Does the relationship between the school managers and teachers of mathematics

have an impact on the teaching and learning of mathematics?

3.    What administrative roles or managerial skills do school managers practice in order

to enhance the teaching and learning of mathematics?

## 1.6    Scope of the Study.

The study was carried out in Kapiri Mposhi District which is located in the Central Province of Zambia. Due to financial and human resource constraints, the study was limited to government-run secondary schools and eight (8) of them were sampled out of eleven (11) secondary schools in Kapiri Mposhi Urban. It would have been worthwhile to include all the government-run schools and private secondary schools if resources were adequate.

Nevertheless, the study had limitations which affected the study findings. These limitations included among others lack of cooperation from some respondents and participants and unwillingness to provide the right information. The study required personal interviews and most people do not like to be interviewed.

## 1.7    Significance of the Study

It is envisaged that the study will make a theoretical contribution to the body of knowledge related to the relationships that exist between school management and the teaching and learning of Mathematics. The study findings would bring more specific insights to the roles of school managers in enhancing the teaching and learning of mathematics. Further, the results from this study could be helpful to the Ministry of General Education and education practitioners in training, monitoring and evaluating administrative staff.

It would also contribute to the existing literature on educational administration. Decision makers, researchers, Examinations Council of Zambia (ECZ) and Non-Governmental Organizations(NGOs) might also find the study helpful.

## 1.8 Theoretical Framework

This study was underpinned by Blake and Mouton managerial grid (1985) which was used in management development as a means of explaining individual leadership styles. The Blake Mouton Managerial Grid spells out five (5) leadership styles based on the grid. The grid uses two axes measuring the concern for people (y-axis) and concern for production or completing tasks (x- axis). (See figure 1).

**Figure 1      The Managerial Grid**
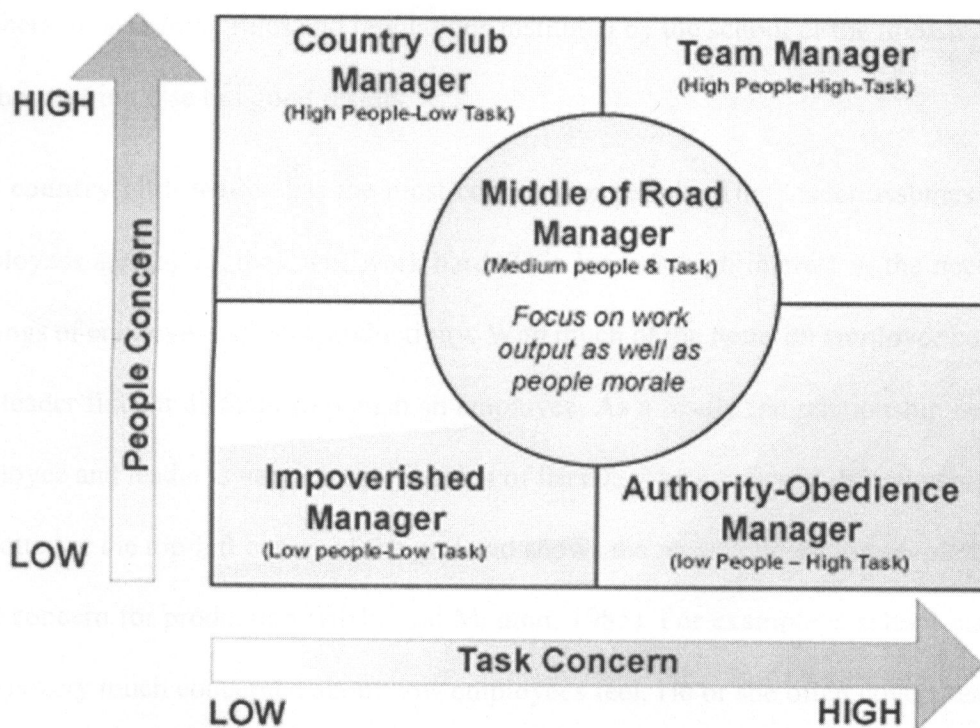


**Blake & Mouton's Leadership Grid**

Source: Blake and Mouton (1985).

**Concern for people** is the degree to which a leader considers the needs of employees when deciding how tasks or jobs should be done. This can be personal or professional development. This behavior dimension moves along the $y$-axis vertically from bottom to top of the grid. This employs school managers to first consider the needs of teachers when giving them tasks and not just what they are expected to do.

**Concern for production** is the degree to which a leader emphasizes objectives and productivity goals when deciding how tasks or jobs should be done. This can be rules, policies or performance standards. This behavior dimension moves horizontally along the $x$-axis from left to right (Blake and Mouton, 1985). Most school managers expect all teachers to operate by rules and regulations instituted by the school or the ministry. They further nothing else but good results.

The **country club leader** has the most concern for people. This leader assumes that if employees are happy, they will work hard. This leader's high interest in the needs and feelings of employees affects productivity. With much of the focus on employee comfort, this leader finds it difficult to punish an employee. As a result, the relationship between employee and leader is very casual, like that of friends. The country club leadership style is plotted at the top-left corner of the grid and shows the most concern for people but the least concern for production (Blake and Mouton, 1985). For example, a school manager who is very much concerned about how employees feel. He or she often covers teaching periods for late or absent employees, doesn't want to overwork employees and teachers are always very happy at work.

Blake and Mouton (1985), contends that an **impoverished leader** has the least concern for people and for production. This leader has no system of getting work done, nor is the work environment satisfying or motivating for employees. This leader's low interest in the work and the work environment results in disorganized work, dissatisfied employees and a lack of harmony. The impoverished leadership style is plotted at the bottom-left corner of the grid and shows the least concern for production and for people. For example, a school manager who is not concerned about how teachers are teaching and the pupils in class are performing. He or does not hold meetings with teachers to guide them on how the school is expected to operate.

According to Blake and Mouton (1985), the **middle-of-the-road leader** has a balanced concern for both production and people. This leader settles for average performance from employees. This leader's balanced interest results in mediocre production and employee satisfaction. The middle-of-the-road leadership style is plotted in the center of the grid and shows balanced concern for production and people. For example, a school manager who directs his or her teaching staff to do their jobs and rewards them for their services. He or she does not push them to teach or prepare lesson plans. He/She does not offer additional training or opportunities to attend workshops. Pupils are attended to on time, but no small talk is exchanged. As a result, teachers are neither satisfied nor dissatisfied with their work, and their performance is average.

The **team leader** stresses high production and employee satisfaction equally. This leader stresses high production by employees and believes employees who are satisfied will be committed to high production. This type of person leads by positive example and endeavors to foster a team environment in which all team members can reach their highest potential, both as team members and as people. They encourage the team to reach team goals as effectively as possible, while also working tirelessly to strengthen the bonds among the various members. They normally form and lead some of the most productive teams. The team leadership style is plotted at the top-right corner of the grid and stresses high production from employees.

For example, a school manager who sets high standards for his teachers and rewards them with incentives for producing very good results at both grade nine (9) and twelve (12) levels. He/she makes sure that the teaching staff is given refreshments at break and lunch time but expects them to accomplish the set production goals and works with them to ensure that all of their needs are met.

Authoritarian Leaders are high task orientated and low when it comes to relationships with the workers. They are very much task oriented and hard on their workers (autocratic). There is little or no allowance for cooperation or collaboration. These leaders are very strong on schedules; they expect people to do what they are told without question or debate; when something goes wrong they tend to focus on who is to blame rather than concentrate on exactly what is wrong and how to prevent it; they are intolerant of what they see as dissent, so it is difficult for their subordinates to contribute or develop.

Cole (2009) argues that the managerial grid explains why some organizations fail to perform because their managers are only concerned with production and show no concern for people while others are only concerned with the welfare of people and have no concern for production. An effective manager is therefore the one who strikes a balance between a concern for people and a concern for production. This managerial grid of five management styles will help the research to establish the type of relationship that exist between school managers and the teaching/learning of mathematics.

## 1.9    Conceptual Framework

### 1.91    Introduction

A conceptual framework is a plan or framework that shows or explains, either diagrammatically or in narrative form, the main things to be studied. It spells out the key factors, concepts or variable to be used and the presumed relationship among them (Miles and Huberman, 2008).

The conceptual frame work for this study was formulated from the literature which was reviewed and the concepts used in the theoretical framework on the five leadership styles based on Blake Mouton Managerial Grid. We can therefore deduce that the relationship between managers and teachers of mathematics improves the teaching and learning of mathematics. School Managers who have a concern for both people's needs and production with managerial skills, managerial styles, interpersonal relationships, managerial knowledge provide better leadership in an organization.

All these elements are important to make an organization achieve its goals. For example, school managers who have managerial skills, managerial styles, interpersonal relationships and managerial knowledge including being concerned for both people's needs and production are likely to bring a number of changes to their respective schools. These include among others social change, succession planning, effective leadership and effective appraisal system of employees. This entails that school managers who have managerial skills, managerial styles, interpersonal relationships and managerial knowledge are vital leadership components in any organization. It will make school managers to be aware of employees' needs other than financial and other forms of motivation offered by the school.

## FIGURE 2:   CONCEPTUAL FRAME WORK

**Intervening** Variables

**Independent** Variables

| School Managers | Managerial skills |
| | Managerial Styles |
| | Managerial knowledge |
| | Interpersonal relationships |

**Current School Position:**

**Organization needs**

**organization culture**

**School Managers**

Managerial skills

Managerial Styles

Managerial knowledge

Interpersonal relationships

Country club leadership style

Impoverished leadership style

Middle-of-the-road leadership style

Team leadership style.

Authoritarian leadership style.

**Dependent Variable**

**Teaching and learning of mathematics**

**Source: Formulated by the author, 2016.**

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## 1.10   Clarification of terms.

For the purpose of this research study, the following terms were used.

**Administrative Knowledge:** This is what the manager needs to know about the organization, the job, and the procedure involved.

**Administrative Skill:** This is the ability to make proper decisions that leads to goal achievement in the organization and leading subordinates.

**Administrative Style:** Is about expectations that people have concerning the way the manager exercise leadership.

**Collaboration:** Teachers and administrators working together, in small groups and school-wide, to identify sources of student success and then struggle collectively to implement school improvement.

**Deputy Headteacher:** The person who is second in charge of the school.

**Head of Department: The** person who oversees a particular department in the school and a subject specialist.

**Head teacher:** The person in charge of the school.

**Instructional objective**: A statement that specifies in behavioural (measurable) terms what a learner will be able to do as a result of instruction. It describes the intended outcome of your instruction rather than a description or summary of your content.

**Interpersonal relationship:** The reciprocal influences that individuals exert upon one another in primary social groups.

**Performance:** Is a relative concept defined in terms of some referent employing complex set of time based measurement of generating future results.

**Role:** A role is a set of behaviors or tasks a person is expected to perform because of the position she or he holds in a group or organization.

**School Management**: The administrative authority in the school.

**School Managers**: The Head teacher, Deputy Head teacher and heads of department.

**Teacher Performance**: Is about all aspects of a teacher that include reporting on time, preparing well for teaching, assessing learners, exhibiting good behaviour and spending adequate time on the task.

**Team Work:** A group of people interacting and co-operating in a work-related action. It involves hands-on working together, as well as processes of organization planning, decision-making and development.

## 1.11    Ethical considerations

According to Nation (1997), ethics is the discipline of dealing with what is right and wrong within a moral framework that is built on obligation and duty. Punch (2000) also asserts that all social research involves consent, access and associated ethical issues, since such data is from people and about people. Kumar (2005) acknowledges that it is unethical to accumulate information without the knowledge of participants and their expressed willingness and informed consent. Therefore, the researcher made it clear to all participants that their participation was on a voluntary basis and that they were free to withdraw from the study at any time.

While conducting this study, the researcher ensured informed consent from all participants. They were also advised that they were under no obligation to answer any questions which they may not have felt comfortable with. Participants were given advanced notice prior to the interview, a broad outline of the subject to be discussed, an indication of the type of information that was required of the participant, the reasons why the research was being carried out and how the information which they provided would be used (see appendix I and II).

Prior to the commencement of each interview the participants were told of the length of time involved with the interview and sufficient time was allowed before and after the interview for the participant to ask any questions relating to the research topic. All participants signed a consent form stating that they were willing to participate in the interview while also ensuring them confidentiality and anonymity throughout the process (see appendix v).

Therefore, the following was used to refer to participants in this study: Participants 1 to 14 for teachers of mathematics from the one to one interviews, Participants 1 to 10 for teachers of mathematics from the focus group interviews and Participants 1 to 8 from the Head teacher interviews. The researcher did not use the language or words that are biased against persons because of gender, sexual orientation, racial or ethnic group, disability or age (Cresswell, 2003).

# CHAPTER TWO

## LITERATURE REVIEW

### 2.0    Introduction

This chapter reviews literature related to several aspects of the study that are considered essential factors in fostering good professional interpersonal relationships. It first presents an explanation on management, a summary on educational administrators, managerial skills, managerial knowledge, Instructional Leadership & Administrative Leadership, some school-based interpersonal relationships that exist in some schools and factors that affect the teaching of mathematics. The selected literature will help in establishing the professional relationships that exist between school managers and the teaching/learning of mathematics.

### 2.1    Management

Helms (2006) define Management as the process of planning, organizing, leading, and controlling an organization's human, financial and material resources to increase its effectiveness. In planning, managers establish their organization's strategy, in other words, how best to allocate and use resources to achieve organizational goals. In organizing, managers establish a structure of relationships that dictate how members of an organization work together to achieve organizational goals.

Organizing involves grouping workers into departments, groups, and teams based on the tasks they perform. When leading, managers encourage workers to do a good job and coordinate individual and groups so that all organizational members are working toward organizational goals.

This is also typical of a team leader stated in the theoretical framework by Blake and Mouton, who treasures team work in order to achieve organizational goals.

The study of different leadership methods and how to match leadership styles to the characteristics of the organization is a major concern of organizational behavior. When controlling, managers monitor and evaluate individual, group, and organizational performance to see whether organizational goals are being achieved.

Knowledge of management acquired through management development allows managers to understand and accurately diagnose work situations and pinpoint the need for corrective action or strive to maintain and improve performance. Several processes at the individual or group levels such as personality conflicts, and poor job design may cause poor performance. Managers perform their functions by assuming a number of roles in organizations.

In conclusion, this literature was used to help the study ascertain the professional relationship that exist between the teaching/learning of mathematics by pointing out that managers establish a structure of relationships that dictate how members of an organization work together to achieve organizational goals. As managers work towards the establishment of health relationships in school, then the set goals are likely to be achieved.

## 2.2    Educational Administrators

In each educational organization, the right to govern or manage rests squarely on the educational administrators. Educational administrators are represented at any hierarchical level of any educational organization. These administrators supervise different educational institutions at different levels. Provinces and Districts are supervised by the Provincial Education Officer (PEO) and District Education Board Secretary (DEBS) respectively.

Those who supervise Primary and Secondary schools are called school managers, Head Teachers or Principals. The school manager in any school is the cardinal person that determines the kind of policies, practices and procedures that the school adopts. School leadership is an important key factor to ensuring improved academic performance of all pupils and enhances proper teaching and learning in school. This entails that the school manager needs to work with heads of departments, teachers, counsellors and other staff in order to enhance the academic achievement of the pupils. In addition, school managers "set the academic tone, hire, evaluate, and help to improve the skills of teachers and other staffs (UNESCO, 2014). This establishes a wide range of interpersonal relationships between the school manager and teachers, as well as support staff. The school manager also engages in a number of collaborative activities that must be characterized by team work and mutual communication, if they are to achieve their intended objectives. Therefore, there is need to develop strong interpersonal and communication skills because these are essential factors in an administrator's job.

The school manager determines the kind of teaching and learning morale that is exhibited in the school. This is due to the fact that the policies, practices and procedures that the school adopts inevitably affect teaching and learning. It is also worth noting that school managers are perceived to play a vital role in teaching and learning when; they visit classrooms, observe teaching methods, review instructional objectives, and examine learning materials.

They actively work with teachers to develop and maintain high curriculum standards, develop mission statements and set performance goals and objectives. Characteristics of effective leadership, entails the availability to pupils, teachers, parents, and others in the school. This implies that the school manager should not work in isolation. He/she must maintain a high form of visibility and accessibility.

Since, good leadership is based on excellence, an initiative must be taken to ensure that the administrative structure of the school has values, ideas and policies that work towards making the school system effective. The school manager must also possess a drive to keep things under control. In essence, a leader must not have a weak character but must handle stress and adverse conditions in a temperate manner. The school manager must not tolerate indiscipline among teachers and must ensure that time is not wasted by lack of punctuality in teachers and pupils (Blake and Mouton, 1985).

Late coming of teachers causes pupils to lose interest in their school work. This is because the teacher portrays no enthusiasm in the material that he/ she presents to the class. Therefore, a policy must be drawn in the school to inculcate school rules and practices in new members of staff. This will save the school manager time and effort in dealing with disciplinary cases. These rules must be well documented to enable quick and easy reference. The new members of staff must also be informed about the administrative structure of the school which must include who they should report to, who is responsible for what and other channels of communication.

In addition, effective administrators are generally tactful, tough, and ambitious. They apply conceptualize goals, believe in the efficacy of education and are determined to keep things under control. As perceived by Fullan (1996) in Edgerson & Kritsonis (2006), effective administrators are those who constantly foster purposeful interaction and problem solving, and are wary of easy consensus. Daily interpersonal interactions of a manager are important links that can gain trust and support from teachers.

In conclusion, this literature was used to inform the study that school managers are the cardinal people that determines the kind of policies, practices and procedures that the school adopts. The leadership they offer is an important key factor to ensuring improved academic performance of all pupils and enhances proper teaching and learning in school.

## 2.3    Instructional Leadership & Administrative Leadership

Instructional leadership can narrowly be defined as leadership functions directly related to teaching and learning (Murphy, 1990). Further, instructional leadership also refers to all other functions that contribute to student learning, including managerial behaviors (Donmoyer & Wagstaff, 1990). Such an action orientation theoretically encompasses everything a school manager does during the day to support the achievement of leaners and the ability of teachers to teach (Sebring & Bryk, 2000).

There are a number of challenges that school managers face in carrying out their daily school responsibilities. One of these is the balance of power between instructional leadership and administrative leadership. Instructional leadership involves facilitating change, providing teachers with a platform to work together, monitoring as well as furthering school improvement (Horng et al, 2010).

As an Instructional leader, a school manager has a passion to achieve the vision of the school, clarify the vision of the school so that it is understood by all members of staff, is greatly concerned about the academic achievement of the pupils, does not encourage the disruption of instructional time, makes sure that all members of staff are highly motivated to teach, believes in achieving the purpose and aim of education in the most efficient manner. Further, they make sure that punctuality is observed in the school and ensures that members of staff and the pupils work diligently towards the achievement of instructional goals. This type of a leader is typical of a team leader who has concern for both production and people's needs.

As an Administrative leader on the other hand, a school manager is more concerned about his/ her paper work, spending more time out of the school, not concerned about the punctuality of members of staff but interested in attending workshops where allowances are assured, does not express empathy for members of staff that have problems is not concerned about poor academic achievement of pupils, works in isolation towards achieving the vision of the school and never consults members of staff over major changes in the school. Sarason (1982) points out that, administrative leadership mainly centres on housekeeping matters and maintaining order.

Fullan (2001) points out that, pressures of the day to day responsibilities forces most school managers to focus on pressing matters rather than following their own premeditated agenda. The school manager has no set of priorities except to keep small problems from becoming big ones. His is a continuous task of crisis management. He responds to emergencies daily. He is always on call. All problems are seen as important.

This global response to any and all concerns means he never has the time, energy, or inclination to develop or carry out a set of premeditated plans of his own. Containment of all problems is his/her theme. The manager cannot be a change agent or leader under these conditions. These dynamics in educational administration prompted Fullan (1996) to classify instructional leaders as effective, while administrative leaders were referred to as typical leaders (ineffective leaders). Effective managers act as instructional leaders, whereas leadership provided by typical managers is largely administrative. The primary goal of these managers is to run organizations smoothly with emphasis on keeping activities in the school manageable.

School managers are constantly plagued with the choice to keep things neat and tidy in the school or to focus on instructional objectives. Nevertheless, recent studies have indicated that the instructional leadership role of the school manager and the effectiveness of a school are directly related to each other. This implies that the efficacy of education in a school is the product of the leadership role of the school manager. Horng et al (2010) observed that, effective school managers showed an active interest by spending time talking with teachers, planning, helping teachers get together, and being knowledgeable about what was happening. They all figured out ways of reducing the amount of time spent on routine administrative matters. According to Edgerson & Kritsonis (2006) an essential feature to keep in mind is the fact that Head Teachers are instructional leaders of their schools. This is a quality that all effective schools possess.

In conclusion, this literature was selected so that it can inform the study on leadership styles. How leadership styles affect the relationship between school managers and the teaching/learning of mathematics. As an Instructional leader, the school manager must have a passion to achieve the vision of the school, clarify the vision of the school so that it is understood by all members of staff and is greatly concerned about the academic achievement of the pupils. Whereas, an administrative leader is more concerned about his/ her paper work and not about how teachers are teaching or how pupils are performing academically.

## 2.4    School Based Interpersonal Relationships

It is important to point out that a school manager does not work in isolation from the rest of the teaching staff in a school. The kind of interpersonal relationships that are established between the school manager and others, determines the kind of collaboration that is practiced. This collaboration has varying degrees and facets in any given school and the centrist point of view of the leader is likely to encourage the utilization of the collective human capital available to a school and ultimately stifle school improvement efforts.

The best way to govern a school is by involving the teachers and parents in decision making. School managers must also pay attention to the concerns of parents, teachers, pupils and other members of the community when making administrative decisions.

Their decisions should benefit the school, and also help the school to accomplish its instructional objectives. Kumuyi (2006) contends that, the running of any organization involves making decisions. While inputs come from members, it is the leader who sets the stage, gamers the inputs and decides what holds and goes.

Decision making is the most crucial aspect of leadership. If decisions are wrong, the organization is heading for a storm. In addition, the most satisfying schools must have a favourable climate for learning. This includes parents' interest in, and knowledge of, the schools and positive relationships between school managers and teachers and between teachers and students.

Interpersonal relationships seem to affect the level of communication, teacher involvement in school governance as well as teacher involvement in the formulation of school policies. Good communication has been cited by Edwards (1997) as a critical ingredient of effective schools as well as a constant flow of information between administrators, teachers, students and parents.

According to Johnson et al (1996), there must be fairness in leadership and fairness in decision making to create a healthy environment that promotes sound mental health among teachers and learners. Good administrators therefore, are those who strive to protect teachers and students from interruptions during instructional time, supply necessary materials, create opportunities for faculty development, encourage new ideas, involve teachers in the formulation of policies, and provide aid to assist with routine work (Edwards, 1997).

Furthermore, the interpersonal interaction between the school manager and teachers seem to be the fundamental ground upon which other relationships stem from. Fullan (1996) in quoting Barth (1990) says, if the teacher- Headteacher relationship can be characterized as helpful, supportive, trusting, revealing of craft knowledge, so too will others.

To the extent that the teacher- Headteacher interactions are suspicious, guarded, distant, adversarial, acrimonious or judgmental, we are likely to see these traits pervade the school. The relationship between teacher and Headteacher seems to have an extraordinary amplifying effect. It models what all relationships will be. He further considered the kind of interaction that exists between teachers and how it helps them to achieve desired change in the school. His findings show that many teachers consider interaction with colleagues on improvements essential and also appreciate direct support from Headteachers. This suggests that they cherish the fruit of team work and collaboration.

Schools that exhibit such trends are termed as collaboratively led schools. Such schools experience more interventions and multiple target interventions, more action in consulting with teachers, more direction by the school manager, more action taken by the teachers, and more focus on students and learning. This is also supported by Edgerson & Kritsonis (2006) who have argued that with improved relationships things get better. If they remain the same or get worse, the other sectors of the organization lose focus.

In conclusion, this literature was selected so that it can inform the study on the importance of school managers to establish health relationships with the teachers. For the school to collaborate and achieve its goals, the school manager must make decisions in consultation with the teaching staff. Improved relationships make things to get even better. This leads to the teaching staff to be motivated and teach with a health mind.

## 2.5    Factors that Affect Teaching

The success of teaching in a school seems to be a fundamental responsibility of the school manager. Through the utilization of all its human and material resources the Head Teacher helps the school to achieve a high level of performance.

Moreover, the school manager must have a clear understanding of his/ her subordinates so as to satisfy their individual work needs. The individual work needs among the teachers of Mathematics includes a wide range of Mathematical equipment and facilities including latest text books. The availability of the equipment has been cited as one of the factors that affects teaching and learning. Mbiti (1984) contends that, equipment and supplies for any one school should be adequate and available on time. Teachers cannot be expected to teach well, no matter how qualified they are, without supplies. The equipment must not only be available on time but latest also. Therefore, the school manager must ensure that none of his/ her classes suffers as a result of using outdated equipment or books. We must also note that Mathematics teaching is greatly influenced by the availability of Mathematical equipment and supplies. This implies that for a school to produce "well baked" pupils there is need to have adequate resources. The Mathematical supplies and equipment seem to be some of the ingredients that make a Mathematics programme worthwhile. Moreover, effective leadership exists when the school manager ensures that resources are available to provide adequate support to teachers, sufficient learning materials, and an adequate and well maintained learning facility. This clearly underscores the need for school managers to be more involved in the instructional objectives of the school.

In addition, collegial collaboration and a central strategy of the Effective Schools model, shows that unusually effective schools are marked by productive communication and joint work among staff members. This suggests that the arrangement of physical space and free time affects the working patterns of teachers. Therefore, managers can affect the working patterns of teachers by arranging physical space and free time to encourage norms of collegiality and experimentation.

The school manager not only seeks means and ways of establishing collaboration and team work with the teachers but also looks at their objectives.

The school manager must also involve the teachers in decision making if the academic goals of the school are going to be achieved. This is important in the sense that, giving teachers a role in decision making helps the school manager to empower and train them. This in turn, makes educators feel accountable for what they do at school and also enhances their satisfaction. This empowerment enables the school manager to influence the teachers to achieve their instructional objectives.

The empowerment of subordinates involves the sharing of influence with effective leaders and spreading of authority down the hierarchical lines. This also underscores the importance of establishing a shared vision and goals. The vision of the school manager if shared and well understood could motivate members of staff. Kumuyi (2006) states that, without a vision development is not possible. For example, the people may be dissatisfied with the status quo and begin to press for novelties to tum the tide; but it takes a leader to conceive, characterize and crystalize the change so desired and then construct the mechanism for its realization.

Therefore, collaboration and team work between the school managers and teachers can be categorically stated as some of the factors that are needed to effectively run a school. They also seem to affect the way teachers focus their role in the classroom. This team work must not only be established with the school manager but also among the teachers. They must share ideas and also ask each other for advice and help. Such an environment is naturally established in the staff room where such interactions occur.

This discourages teachers from working as 'lone rangers' and helps them to work as a team. It further helps to reduce problems that surround teaching as well as establishing teacher consensus and oneness.

In addition, as cited by Edgerson & Kritsonis (2006) the most successful teachers are those who are inspired by the beautiful relationships developed with their managers, which motivate them to do their very best. These relationships make the teachers project their image of teaching and this inevitably makes them feel good about their role. As teachers begin to feel better about themselves and their collective mission, as a result of significant interactions with their principals, they become more effective in the classroom.

In conclusion, this literature was used so that it can inform the study on what affects the teaching and learning of mathematics. Effective teaching and learning of mathematics requires the availability a wider range of Mathematical equipment and facilities which may include latest text books and board mathematical instruments. Further, effective leadership exists when the school manager ensures that resources are available to provide adequate support to teachers, sufficient learning materials, and an adequate and well maintained learning facility. The most successful teachers are those who are inspired by the beautiful relationships developed with their managers, which motivate them to do their very best.

## 2.6    Academic Performance of High School Pupils in Public Examinations

Pupils are admitted to secondary schools based on their academic performance in the terminal examination (Junior Secondary School Leaving Examination). On the basis of the performance in public examination, about 30% of the school candidates proceed into Grade ten (10) (MOE, 1996).

However, it is surprising to note that the general performance of this cohort of students is far from satisfactory in the grade 12 examination (Zambia School Certificate Examination). It is estimated that less than two- thirds of the candidates obtain a full pass in the School Certificate each year. A number of reasons have been given for this kind of performance in public examinations. According to MOE (1996), this distressing picture of poor performance in mathematics and science and subsequent inadequacy in these areas points to deficiencies at school level. The deficiency may be in the facilities, the resources or the teaching. It may be in the balance of the curriculum. It may be in the expectations that pupils set for themselves and that others entertain for them, since these are known to have a major impact on student performance.

Legotho et al (2002) in their studies of causes of poor performance of pupils in grade twelve have noted that the major causes of poor student performance included lack of resources, lack of discipline and poor morale, problems concerning the implementation of policies, and inadequate parental involvement. The lack of sufficient resources seems to be a factor that is considered to have a profound impact on the academic achievement of pupils in Grade 12. Students should not just be told about Mathematics but must practice it, gathering facts, generalizing, speculating, checking, and criticizing.

These are necessary if they are to fully understand what Mathematics is and profit from their instruction. This attests to the fact that pupils who only encounter Mathematics that is presented in text books think that the subject is dull.

This may also hinder them from developing skills that could help them to appreciate Mathematics in their everyday lives.

Another problem that has been cited to be the cause of poor academic performance in Grade12 is a poor culture of learning, which is caused by poor educator and learner motivation. It must be noted from Masitsa (2005) that when high academic standards are maintained, the educators and learners develop a work ethic whereas the contrary leads to laxity and complacency.

Moreover, staff stability ensures that there is room for building a school personality. Therefore, an effective school must have a stable staff. A school that is characterized by a continuous change of teachers has no way of creating good interpersonal ties between teachers and pupils as well as teachers and school managers. A school that is characterized by stability in staffing will develop mutual standard in terms of the academic achievement that will reflect the personality of the school. Fullan (1996) stated how the interaction between teachers and students can affect their commitment in positive or negative ways.

The commitment of teachers can be influenced by the feedback they get from pupils. Some teachers are highly motivated by the good academic performance exhibited by the pupils. However, some frustrated teachers place the blame on other factors such as pupils' family background, lack of firm leadership both at the school and district levels. When pupils are accorded respect, patience and care by their teachers in explaining and re-explaining a subject, they tend to exhibit good academic performance.

Another factor that is critical is the motivation of the pupils. It has been noted by Fullan (1996) that students who are not interested in going to college or university impatiently wait for the day that they will leave school and make money.

This points to the fact that they are not interested in the curriculum, and therefore, they regard school as a place merely for social interaction with friends and not for academic achievement. Moreover, the teacher is regarded as the source of inspiration according to the material that he/ she presents to the class. Farrant (1991) argues that, teachers must play a part in selecting the material from which the child will learn. He/she can make the classroom a worthwhile environment full of challenging experiences. He can make the environment of the classroom educational as well as his lessons.

This double approach is most worthwhile. This argument seems to suggest that there are some teachers' classroom practices that tend to affect the academic performance of the pupils. Nevertheless, there are also some personal problems that seem to affect the availability and performance of teachers in the classroom. Some of these factors are sickness and conditions of service.

In such moments, the school manager should demonstrate empathy. The failure to demonstrate this attribute sometimes breeds de-motivation among the teachers. The school manager in such moments should not merely show his/ her concern but should seek some means of alleviating the problem. Most literature in educational administration focuses on the role of the school manager in providing school leadership. However, the literature cited has tried to shed light on the importance of school managers and teacher relationships rather than leadership styles or behaviours in isolation.

In conclusion, this literature was used to inform the study on the academic performance of pupils in secondary schools in relation to the professional relationships that exit between school managers and the teaching/learning of mathematics.

The literature pointed out that the major causes of poor student performance included among others lack of resources, lack of discipline, poor culture of learning which is caused by poor educators and learner motivation. Others include, continuous change of teachers which does not create good interpersonal ties between teachers and pupils as well as teachers and school managers, pupils' family background and lack of firm leadership both at the school and district levels to mention but a few.

## 2.7    Lessons learnt

From the literature review, there are various lessons that can be drawn. First and foremost, it has come out clearly that managerial skills, managerial knowledge, managerial styles and team leadership style from Blake and Mouton managerial grid, are catalysts for running organizations effectively. These should be part of the organization culture where every manager must be taken for management training to acquire these elements. It must be borne in mind that not every individual is born with leadership qualities.

Secondly, poor performance by both teachers and pupils is lack of available teaching and learning equipment which include latest text books and mathematical board instrument to mention but a few. These must be available and the school mangers must ensure that they are acquired and used effectively to produce better results in mathematics.

Thirdly, improved professional relationships between school managers and the teaching/ learning of mathematics make things to get better. This leads to the teaching staff to be motivated and teach with a health mind.

Lastly, lack of stability in the teaching staff affects the good interpersonal ties which exits between teachers and pupils as well as teachers and school managers

## 2.8    Identified gaps in the reviewed literature

Much of the literature consulted in the study was based on international studies. Therefore, this study would greatly help in contributing to the gap on the scarcity of local literature.

A study carried out by M'soni (2010) in the same field did not point out specific material and equipment such as mathematical board instruments, graphed blackboards in classes to mention but a few. Therefore, this study helped in establishing the importance of using these materials and equipment to enhance the teaching and learning of mathematics in relation with the professional relationship which exist between school managers and the teaching/learning of mathematics.

## 2.9    Summary

This chapter presented the literature review employed in the study. The major sections included explanation on management, a summary on educational administrators, managerial skills, managerial knowledge, Instructional Leadership & Administrative Leadership, some school-based interpersonal relationships that exist in some schools and factors that affect the teaching of mathematics.

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.0    Introduction.

This chapter will describe the research design, study area, study population, study sample, sampling procedure or techniques, data collection instruments, data collection procedures and data analysis. This is a very important section as it attempts to clarify on the research methods chosen and how they intend to address the research questions. It also explains why some methods are preferred ahead of others.

## 3.1    Research Approach

The current study opted for a qualitative approach owing to the fact that it provided a good situational analysis of what actually obtained on the ground. This approach paved way for participants to fully express themselves without any restrictions. It was considered more appropriate because it would allow for in-depth understanding of the phenomena being studied: professional relationship between school managers and the teaching/learning of mathematics (Cohen et al, 2007). Maxwell (2007), further notes that the qualitative approach was suitable for documenting people's beliefs and interpretation of reality as well as their actions. Qualitative data was derived from semi-structured interviews. Owing to the fact that the study was confined to one district targeting eight schools, the researcher's desire was to describe the phenomenon "professional relationship between school managers and the teaching/learning of mathematics" in detail and in a holistic manner.

## 3.2    Research Design

A research design is a structure of the study that holds together all important elements of the research. It is seen as the scheme or plan that is used to uncover answers to identified research problems. Alternatively, a design can also be seen as an arrangement of conditions for collection and analysis of data in a manner that fulfills both the importance and the need for the study (Cohen et al, 2007). Being an exploratory study aimed at getting primary information that could be used in subsequent researches, and arising from the need to describe the phenomenon "professional relationship between school managers and the teaching/learning of mathematics" in a detailed and holistic manner, the descriptive case study design became the most preferred approaches to achieving the envisaged goals (Jackson, 2009). The stated descriptive research design was chosen because it was considered appropriate in collecting detailed qualitative data on the subject. As Jackson (2009) notes; "descriptive methods are pretty much as they sound, they describe situations. They do not make accurate predictions, and they do not determine cause and effect". Descriptive methods are ideal for collecting rich information to understand the prevailing situations and help make interpretations.

Three main types of descriptive methods are identified to include: observational methods, case-study methods and survey methods. Out of the three descriptive methods, this study settled for the case study method. In nature, case study research involves an in-depth study of an individual or group of individuals.

Case studies are not used to determine cause and effect, but used to understand phenomena. These designs allowed for in-depth investigation and discussion of the problem at hand, therefore, bringing about deeper insights and a better understanding of the theme under study (Maxwell, 2007).

## 3.3    Study population and site

The population of a study refers to the target group under investigation in a study. Trochim (2006), describes a population of a study as a set of elements that the research focuses upon and which the results obtained by testing the sample should be generalized. Population is also defined by Kombo and Tromp (2006) as a group of individuals, objects or items from which samples are taken for measurement and these have one thing in common.

The greater the variability and diversity in a population, the larger the researcher's sample size should be. Capturing the variability of the population allows for more reliability of the study. Consequently, the definitions above provide that, a population comprises individuals or objects known to have similar characteristics. In this study, the population was made up of teachers of mathematics and administrators in Kapiri Mposhi District. The population of the study therefore, comprised eleven (11) secondary school managers and eighty (80) teachers of mathematics in eleven (11) secondary schools of Kapiri urban.

## 3.4    Study Sample

According to Cohen, et al. (2007), a sample refers to the total number of subjects selected to participate in a given study. Usually, researchers are made to select a "sample population" that is considered representative of groups of people to whom results will be generalized or transferred.

This study therefore had a population sample which comprised eight (8) secondary schools. These were selected from the eight (11) government (G. R. Z.) run secondary schools in Kapiri urban. Therefore, eight (8) secondary school managers [five (5) male and three (3) females] and twenty-four (24) teachers of Mathematics were sampled.

## 3.5    Sampling procedure

In research, there are mainly two types of sampling techniques namely; probability and non-probability sampling techniques (Miles & Huberman, 2008). Further, in probability sampling, there is a system of random selection of participants whereby all members of the population stand an equal chance of being selected. This method is used in selecting participants so as to avoid biasness.

On the other hand, Fretterman (2006) refers to non-probability sampling as a method of selecting participants with a bias towards certain individuals within the population considered to have certain desired characteristics. Non-probability sampling is also referred to as convenient or purposive sampling.

The ideas behind a specific sampling approach vary significantly, and reflect the purposes and questions directing the study (Punch, 1998). To come up with the desired sample of the current study, stratified sampling and purposive sampling procedures were used. Therefore, the researcher obtained a list of all secondary schools in Kapiri district from the district education office. Stratified sampling was used to select schools for the study. Thus, schools were categorized according to ownership, hence government and private owned schools. By stratifying schools according to ownership, it facilitated comparison of School performance. This was done in order to attain a balanced representation of responses.

In choosing the sample of participants the researcher used a purposive sampling method. This form of sampling is essentially strategic and necessitates an attempt to establish a good correspondence between research questions and sampling (Bryman, 2004). Purposive sampling means that the participants are selected because of some defining characteristics that make the holders of the data needed for the study. According to McMillan and Schumacher (2006), purposive sampling is done to increase the utility of information obtained from small samples. Samples are chosen because they are likely to be knowledgeable and informative about the phenomenon that the researcher is investigating. Sample decisions are made for the purpose of obtaining the richest possible source of information to answer the research questions (Nieuwenhuis, 2007). In this study, the Headteachers were purposively selected from the schools who were selected through stratified sampling because the researcher wanted detailed information from these same schools. The 24 teachers of mathematics were also purposively selected through the help of heads of departments who knew them very well and that they were able to provide the much-needed information for the study. These teachers were obtained from the same schools which were stratified sampled. Specific attention was paid to inclusion of both male and female in the study sample.

## 3.6 Instruments for data collection

The tools that were used for data collection were self-administered semi-structured interviews. The interviews were used to collect data from all the thirty-two (32) respondents comprising both school managers and teachers of mathematics.

### 3.6.1 Semi-structured interviews

This study used semi-structured interviews as the main tool for collecting data. May (1997), views semi-structured interviews as in-depth interviews often referred to as a "conversation with a purpose". They plough a path between structured and unstructured interviews. With semi-structured interviews, the interviewer and interviewee are equal partners. Basically, in a semi-structured interview, the interviewer knows the areas to be covered, but allows the interviewee the options to take different paths and explore different thoughts and feelings. However, digressions are controlled by probes and prompts (Cohen et al, 2006).

Typically, in a semi-structured interview, the interviewer has a paper-based interview guide that he or she follows. Since semi-structured interviews often contain open-ended questions and discussions may diverge from the interview guide, it is generally best to record interviews and later transcript these tapes for analysis. While it is possible to try to jot notes to capture respondents' answers, it is difficult to focus on conducting an interview and jotting notes.

This approach of writing notes is usually not recommended because it diminishes the development of rapport between the interviewer and interviewee which may result in poor notes all together. Development of rapport and dialogue is essential in unstructured interviews (Cohen et al, 2006). It is for this reason that the researcher used a voice recorder throughout the research to capture responses in detail.

## 3.6.2 Focused group discussions.

Focus group interviews are an efficient way of collecting data particularly when the interviewer wants to gain insight into the attitudes and opinions of groups rather than acquiring specific information about individuals. Focus group interviews provide the researcher with the opportunity to directly observe the social processes and dynamics of group interaction (Clarke 1999). Nieuwenhuis (2007) stipulate that focus group interview strategy is based on the assumption that group interaction will produce a wide range of responses, activating forgotten details of experience and releasing inhibitions that may otherwise discourage participants from disclosing information. He further argues that many researchers argue that focus group interviews produce data rich in detail that is difficult to achieve with other research methods, but it may happen that other participants experience focus group as threatening.

According to Punch (2009), the role of the researcher in group interview is more of a moderator or a facilitator, and less of an interviewer. Punch (2009) further argue that the researcher facilitate, moderate, monitor and record group interaction. The distinguishing features of focus group is that the discussion is focused on a particular topic, that debate and even conflict are encouraged, and that group dynamics assist in data generation. Group dynamics become an important dimension of what will be analyzed as part of data generated (Nieuwenhuis, 2007). According to Leedy and Ormrod (2005) to conduct a focus group, the researcher gathers several people to discuss issues for one or two hours. The researcher should make sure that no one dominates the discussion.

Leedy and Ormrod (2005) further stipulate that focus groups are useful in terms of the following: when time is limited, people feel more comfortable talking in a group than alone, interaction among participants may be more informative than individually conducted interviews and when the researcher is having difficulty interpreting what he or she has observed.

Focus group discussions in this study were utilized after the one-to-one interviews were conducted. This was done so as to facilitate a discussion amongst teachers of mathematics on the subject of relationships between school managers and the teaching/learning of mathematics. The discussion allowed the members to agree or disagree on certain issues in their interaction.

### 3.6.3 Document Analysis.

Birley and Moreland (1998) indicate that document analysis is a common approach which allows for the analysis of various types of documents. Birley and Moreland further argue that these documents can either be official, semi-official or non-official. McMillan and Schumacher (2006) argue that data can be gathered from official documents such as memos, minutes of meetings, working papers and draft proposals. These documents describe functions and values and how various people define the organization. Internal documents can show the official chain of command and provide clues about leadership style and values. Documents used for external communication are those that are produced for public consumption such as newsletters, brochures, reports, public statements and news releases. Punch (2009) adds on to say that documents are rich source of data for education and social research.

Punch (2009:) also indicated that documents that might be used by the researchers include diaries, letters, essays, personal notes, biographies, institutional memoranda and reports, government pronouncement and proceedings, and [policy documents.

Documents in this study will be in a form of grade 9 and 12 Examinations Council of Zambia results which were analyzed by various schools in this study. The results used were from 2011 to 2015 examinations period. This will allow the researcher to compare responses from the interviews and the information from the documents. The purpose of using document analysis in this study is to eliminate bias and compare responses from one-to-one and group interviews.

## 3.8    Data Collection

According to Leedy and Ormrod (2005), data collection in a qualitative study takes a great deal of time. The researcher should record any potential useful data thoroughly, accurately and systematically using field notes, audiotapes, sketches, photograph or any other suitable means. Leedy and Ormrod further argue that as qualitative researchers collect data they also begin jotting down notes about their initial interpretations of what they are seeing and hearing. Different techniques were used for this study. According to Arksey and Knight (1999), the use of different techniques in exploring a research question is called triangulation. Arksey and Knight further argue that the basic idea of triangulation allowed data to be obtained from a wide range of different and multiple sources, using a variety of methods. Triangulation is a strategy that is used to overcome problems of validity and bias (Punch 2006).

The researcher used three types of data collection; one-to-one interviews, focus group interviews and document analysis (Result analysis 2011to 2015). Interviews assisted the researcher in understanding the perceptions the interviewees have on the professional relationship which exist between them pertaining to the teaching and learning of mathematics. Focus group interviews also assisted the researcher in corroborating ideas expressed in one-to-one interviews in a sense that the respondents were given a chance to agree and disagree on how the relationship between school managers and teachers of mathematics affected the teaching and learning of mathematics whilst the researcher was facilitating the discussion. The researcher believed that by using these methods it helped to eliminate the element of bias in the study.

After all the necessary permission was obtained, the researcher personally conducted all the thirty-two (32) interviews and 3 group interviews. It is worth mentioning that before each interview was conducted with the respective managers and teachers, consent was sought with all the respondents. This provided a mutual and professional understanding between the respondents and the researcher.

A semi-structured interview guide was administered to the school managers and to selected teachers of mathematics in the selected schools. Interviews with the school managers and teachers were recorded on a voice recorder and transcribed after the interview.

## 3.9    Limitations of the Study

The study had limitations which affected the study findings. Sometimes the researcher had to wait for long hours before he could be attended to. The study required personal interviews and most people do not like to be interviewed. At other times, appointments with some interviewees had to be postponed due to their busy schedules. Some teachers also claimed to have been busy preparing for mock examinations, while some members of staff were unwilling to cooperate fully with the researcher despite the fact that the school manager had granted permission to carry out the research especially recording them.

The setting and location of interviews can have a significant influence on the success of the interview. Different settings are likely to induce and constrain talk of a particular kind (Clarke 1999). Some participants were not free to be interviewed at school. This was a challenge. The researcher therefore used different locations to carry out the interviews depending on where the respondent was comfortable.

Some interviews were conducted at school and others at respondent's places of choice; namely at home or in town at a restaurant. This was a limitation because I was not comfortable as a researcher to meet the participants in certain places.

## 3.10    Data analysis and interpretation.

Whenever information is just collected in research, it is usually raw and requires processing for valuable meanings to be deduced from it. The stage at which information is processed is called data analysis.

According to Tabachnick and Fidell (2007), analysis of data is a process of inspecting, cleaning, transforming, and modeling data with the goal of highlighting useful information, suggesting conclusions, and supporting decision making. Data analysis has multiple facets and approaches, encompassing diverse techniques under a variety of names.

In processing the data of this study, a unidirectional approach was used. Owing to the fact that the study was qualitative, the analysis was also positioned heavily on the qualitative approach. As such, thematic analysis was used to analyze the collected data set. As advanced by Patton (1990), thematic analyses involve identifying major themes and describing them. This form of analysis categorizes related topics by identifying major concepts or variables usually, from the questions or objectives. As such, the bulk of the gathered qualitative data was placed and analyzed under the identified themes and were appropriately coded to help develop summary reports according to the frequency with which the issues emerged. For reporting purposes, simple tables were used.

## 3.11    Validity and Reliability.

Validity and reliability are crucial aspects in quantitative research. In qualitative research, the researcher is the data gathering instrument (Nieuwenhuis 2007). Bless, Higson-Smith and Kagee (2006) argue that measurement in social sciences is not perfect. Bless, Higson-Smith and Kagee further argue that it is important that researchers always evaluate the measures that they use. The criteria such as trustworthiness and authenticity have been developed as viable standards for measuring validity and reliability by qualitative researchers.

**Validity** refers to the degree of congruence between the explanations of the phenomena and the realities of the world (McMillan and Schumacher 2006). According to Nieuwenhuis (2007), it is generally accepted that engaging multiple methods of data collection, such as one to one interviews, focus group interviews and document analysis will lead to trustworthiness. The researcher triangulated the three methods of data collection used in this study.

Merriam (1998) defined validity as the trustworthiness of research results. Glesne (1999) indicated that validity pertains to the trustworthiness of the research design as well as in the midst of data collection. Validity of research is the interpretation of the research results with confidence and the manner in which results can be generalized. It involves the extent to which the results can be accurate and the extent to which the results can be generalized to the population and prevailing conditions (Wiersma, 1991). The researcher used qualitative research design in the study; therefore, multiple strategies were used to ensure validity in the study. Methods of data collection that were used are one-to-one interviews, focus group interviews and document analysis.

The methods selected were expected to yield truth on the phenomena under investigation. There are two types of validity; namely internal and external validity. Internal validity refers to the extent to which the phenomenon studied relates to the realities of the world (McMillan and Schumacher 2006).

External validity is concerned with the extent to which the findings of the study can be applied to other situations and also how the findings can be generalized (Wiersma 1991). The researcher relied on internal validity as the purpose of the research was not to generalize findings, but to relate findings of the phenomenon under investigation to the realities of the world.

Bailey (1989), refers to **reliability** as consistency of measurement whilst Wiersma (1991) sees it as the extent to which an instrument gives similar results for the same individual at different times. Another way of conceptualizing reliability is to determine the extent to which measures are free from error. If the instrument has little error, then it is reliable, and if it has great amount of error, then it is unreliable (McMillan and Schumacher 2006).

Fowler (1993) argued that reliability is related to the researcher's interaction, which could lead to biasness. Fowler also argued that reliability refers to consistency. To eliminate the element of biasness, the qualitative researcher used a range of strategies aimed at cross referencing findings and interpretations. To eliminate the element of biasness, the researcher used different data collection strategies such as recording interviews through tape recorder, writing notes during one-to-one interviews, focus group interviews and analyzing document (results analysis from 2011 to 2015).

To ensure that validity and reliability was observed in this study, evidence in participants own words was provided in relation to the themes generated so that the reader could confirm or otherwise suggest changes according to the argument.

## 3.12    Conclusion

This chapter has provided an overview of the research method and design that were used in the study. Qualitative research method as an applicable method to this study has been discussed fully. Data collection methods, sampling, reliability and validity were discussed. The one-to-one interviews, focus group interviews and document analysis were outlined as methods of data collection. Population for the study has been sampled using purposive sampling procedure because the sample utilized was small. The researcher made sure that results of the study were reliable through triangulation of data. The descriptive or interpretative process of analyzing data was also highlighted.

# CHAPTER FOUR

# PRESENTATION OF RESEARCH FINDINGS

## 4.0    Introduction

This chapter is concerned with presenting the major findings that emerged from the study. The findings are presented using a combination of tables and reflective notes to give a voice to the responses provided. Essentially, the findings appear under themes derived from the data collected from the interviews.

In this study, 14 teachers of mathematics from 5 secondary schools were subjected to a one to one interviews while 10 teachers from 3 secondary schools were subjected to focus group interviews. All the 8 Headteachers were subjected to a one to one interviews. Gender responses were also considered. This study used both simple tables to present the collected date with explanations. The study was guided by the following three research questions:

(a) What kind of Professional relationships exists between school managers and

   Teachers of Mathematics

(b) Does the relationship between the school managers and teachers of mathematics have an impact on the teaching and learning of mathematics?

(c) What administrative roles or managerial skills do School Managers practice in order   to enhance the teaching and learning of mathematics?

## 4.1 Position of the Respondents

Out of the 32 people who participated in the study, 8 (25%) were Headteachers and 24 (75%) were teachers of mathematics respectively. This result entails that the majority of respondents were teachers of mathematics (see table 1).

Table 1: Position of the Respondents

| POSITION | FREQUENCY | TOTAL NUMBER |
|---|---|---|
| HEADTEACHER | 8 | 8 |
| TEACHERS | 24 | 24 |
| GRAND TOTAL | 32 | 32 |

Source: Author's field survey compilation, 2016

## 4.3. Demographic Data

This section of the report provides the personal information of respondents based on their gender, age, marital status and the highest level of education. The demographic data for respondents was as follows:

## 4.3.1 Gender

Data for this study was from both males and females. The former constituted the majority with 21 (65.6%) while the latter had 11 (34.4%). This result is a clear indication that the majority teachers of mathematics in Kapiri District are male. The results are summarized in table 2.

**Table 2 Distribution according to Gender**

| POSITION | FREQUECY | | GRADE TOTAL |
|---|---|---|---|
| | **MALE** | **FEMALE** | |
| HEADTEACHER | 5 | 3 | 8 |
| TEACHERS | 16 | 8 | 24 |
| GENDER TOTAL | 21 | 11 | 32 |

Source: Author's field data, 2016.

## 4.4    Relationship not cordial. (Research Question 1).

In the five-secondary schools and three secondary schools where I conducted one to one interviews and focus group discussions respectively, 6 participants from one to one interviews, 5 participants from the focus group discussions and 2 participants from the Headteachers felt that the relationship between School Managers and teachers of mathematics was not cordial (See Table 3).

### 4.4.1 Antisocial relationship.

5 participants thus: 3 from one to one interviews and 2 from the focus groups spoke in a similar manner about the School Managers being antisocial. The following was a typical example:

> *Well to tell you the truth sir, our Headteacher does not take kin interest in finding out why a certain teacher is not coming for work. Sometimes you can even by pass each other without greeting you. So, we not free with him. We even fear to ask anything from him because his actions are not welcoming (Participant 2 from focus group discussions).*

### 4.4.1.1 Not Cooperative.

Two participants from the Headteachers also spoke in similar ways. The following was a typical example from the one to one interviews:

> *In my opinion, I don't enjoy a good relationship with the teachers of mathematics because every time you give them a task to do, they don't do it instead they will give you excuses. To me they are not cooperative (Participant 3 from the Headteachers).*

### 4.4.2 Uncaring Relationship.

5 participants thus: 3 from one to one interviews and 2 from the focus group spoke in a similar manner about the Headteachers not being caring. The following was a typical example:

> *It was on a Thursday afternoon when I got sick and told my Head of department that I needed to go for treatment to the clinic. I got a sick slip and went to the clinic.*

*The following morning, I was called by the Headteacher and instead of asking me how I was feeling she just started shouting at me and told me that I was a lazy teacher and I always fen illnesses. I left her office crying and since then, my relationship with my Headteacher has not been good. I even pray for the day to end fast so that I can go home. (Participant 4 from one to one interviews).*

**Table 3 Summary of responses of teachers of mathematics on their relationship with school managers.**

| School | Good Relationship | Fair Relationship | Poor Relationship | Total Number of Teachers |
|---|---|---|---|---|
| School A | 2 | 0 | 0 | 2 |
| School B | 1 | 1 | 1 | 3 |
| School C | 0 | 2 | 1 | 3 |
| School D | 0 | 2 | 1 | 3 |
| School E | 0 | 0 | 3 | 3 |
| Focus group 1 | 1 | 0 | 2 | 3 |
| Focus group 2 | 2 | 1 | 0 | 3 |
| Focus group 3 | 1 | 0 | 3 | 4 |
| Headteachers | 3 | 3 | 2 | 8 |
| **Relationship Total** | **10** | **9** | **13** | **32** |

Source: Author's field data, 2016

## 4.5 Relationship fairly good. (Research Question 1).

From the five-secondary schools and three secondary schools where I conducted one to one interviews and focus group discussions respectively, 5 participants from one to one interviews, 1 participant from the focus group discussions and 3 participants from the Headteachers felt that the relationship between School Managers and teachers of mathematics was fairly good (See Table 3).

### 4.5.1 Mood Relationship.

The 6 teachers from both the interviews and group discussions described the relationship in a similar way. The following was a typical example:

*Sometimes the Headteachers is good and you can like him that day but when he is annoyed everything in school goes sour. I could say the relationship is not very bad (Participant 3 from focus group discussions).*

### 4.5.2 Not Consistent commitment

The 3 Headteachers from the interviews described the relationship in a similar manner. The following was a typical example:

*Well, these teachers, sometimes I enjoy a good relationship with them especially their commitment in class. The only problem I have is that they don't participate in co-curricular activities, they always rush home during co-curricular activities days leaving the pupils alone. On that one, anyway the relationship it is not consistent (Participant 5 from Headteacher).*

### 4.6    Relationship Cordial.

From the five-secondary schools and three secondary schools where I conducted one to one interviews and focus group discussions respectively, 3 participants from one to one interviews, 4 participant from the focus group discussions and 3 participants from the Headteachers felt that the relationship between School Managers and teachers of mathematics was good

(See Table 3).

### 4.6.1    Understanding and Supportive.

7 participants from the teachers (3from interviews and 4 from focus group discussions) described the relationship between Headteachers and teachers of mathematics in a similar manner. The following was a typical example:

> *I can say that the relationship I have with my Headteacher is sound and cordial. I have*
>
> *no problems with her because she is very understanding and supportive. She will always*
>
> *support what you want to do as a teacher as long as it is for the benefit of the school*
>
> *(Participant 1 from focus group discussions).*

### 4.6.2 Committed and Hardworking.

3 participants from the Headteachers also spoke in a similar way pertaining the cordial relationship they have with teachers of mathematics. The following was a representation of their views:

> *I have absolutely no problem with the teachers of mathematics because they are*
> *hardworking and always put in their best to improve results in school. Sometimes they*
> *give extra lessons to their classes during weekends at no cost. I really love their*
> *commitment to duty (Participant 6 from Headteachers).*

## 4.7 Had an Impact on the Teaching/ Learning of Mathematics (Research question 2).

The 6 participants from the interviews, 5 participants from the focus group discussions and 2 participants from the Headteachers who felt that the relationship between School Managers and teachers of mathematics was not cordial also confessed that the relationship had an impact on the teaching and learning of mathematics.

### 4.7.1 Lack of adequate teaching and learning materials.

3 participants from the interviews and 2 participants from the focus group acknowledged the lack of adequate teaching and learning material needed to facilitate quality teaching and learning in their departments. The following was a typical example of their expression:

> *Our pupils do not perform well in mathematics because our departments are not well stocked with latest books that can help them to practice mathematics. Our school mangers are not eager to acquire these much-needed books simply because they are expensive. Quality is always expensive and for quality to be archived school managers should just approve the purchase of such important books in our department. (Participant 5 from the interviews).*

### 4.7.1.1 Negative attitude by School Managers.

2 participants from the interviews and 1 participant from the focus group also spoke in a similar manner about the negative attitudes which Headteachers have towards the purchase of teaching and learning materials. The following was a typical example of their expression:

*The negative attitude which the Headteacher has on us as teachers of mathematics is not*

*good. We have developed a poor relationship with him such that he always says no to*

*whatever we request from him. He perceives us to be a group of pompous teachers.*

*(Participant 6 from the focus group).*

### 4.7.1.2 Teaching Morale going down.

1 participant from the interviews and 2 participant from the focus group also spoke in a similar

manner about their teaching morale doing down. The following was a typical example of their

expression:

> *The negative attitude expressed by the Headteacher has made my teaching morale*
>
> *to go down, I even stopped conducting weekend lessons for my classes. I have*
>
> *stopped because my efforts are not recognized (Participant 2 from the focus group).*

### 4.7.2 Teachers of Mathematics as being Superior.

2 participants from the Headteachers also spoke in a similar way concerning teachers of

mathematics as being a superior group. The following was a typical example of their

expression:

> *I have a problem with teachers of mathematics because they view themselves as*
>
> *superior and wanting a certain type of treatment different from others. This has*
>
> *always caused misunderstandings between us. They should understand that all*
>
> *teachers are the same and treatment should not be exceptional in school. This has*
>
> *even made them develop a bad attitude towards teaching which is not good*
>
> *(Participant 7 from the Headteachers).*

### 4.7.3  Academic performance of pupils.

The academic performance is the reflection of what exactly happens in a classroom. It gives an explanation as to whether proper teaching and learning of mathematics was taking place. The results analysis from the eight secondary schools shows that the performance of pupils in mathematics was not impressive from 2011 to 2015. From the Grade 12 ECZ results analysis gotten from these schools, 3 schools recorded a pass rate above 40% whilst 5schools performed below 40% with only one school scoring above 75% (See Table 4).

Grade 9 ECZ results analysis gotten from the eight schools also shows a similar scenario to that of the Grade twelve's. 4schools recorded a pass rate above 40% and 4schools performed below 40% with only one school scoring above 75 %( See Table 5).

Table 4 **Academic performance of Grade 12 pupils.**

| School | 2011 | 2012 | 2013 | 2014 | 2015 | School Average Percentage |
|--------|------|------|------|------|------|---------------------------|
| School A | 49 | 61 | 29 | 30 | 71 | 48 |
| School B | 60 | 59 | 61 | 43 | 30 | 50.6 |
| School C | 21 | 17 | 18 | 40 | 42 | 26.6 |
| School D | 33 | 38 | 49 | 17 | 47 | 36.8 |
| School E | 45 | 44 | 20 | 41 | 43 | 38.6 |
| School F | 67 | 70 | 72 | 89 | 80 | 75.6 |
| School G | 33 | 38 | 23 | 40 | 46 | 36 |
| School H | 34 | 45 | 30 | 39 | 46 | 38.8 |

Source: Author's field data, 2016

Table 5 **Academic performance of Grade 9 pupils.**

| School | 2011 | 2012 | 2013 | 2014 | 2015 | School Average Percentage |
|--------|------|------|------|------|------|---------------------------|
| School A | 32 | 46 | 40 | 50 | 57 | 45 |
| School B | 57 | 50 | 53 | 60 | 67 | 57.4 |
| School C | 19 | 18 | 26 | 39 | 48 | 30 |
| School D | 39 | 34 | 46 | 18 | 50 | 37.4 |
| School E | 40 | 43 | 20 | 43 | 40 | 37.2 |
| School F | 67 | 69 | 81 | 90 | 97 | 80.8 |
| School G | 32 | 30 | 20 | 43 | 50 | 35 |
| School H | 44 | 41 | 38 | 43 | 57 | 44.6 |

Source: Author's field data, 2016.

## 4.8 Not effective Leadership styles. (Research question 3).

The 8 participants from the interviews and the 6 participants from the focus group discussions felt that the leadership styles practiced by the School Managers were not effective (See Table 4).

### 4.8.1 Authoritarian Leadership (See 1.8).

4 participants from the teacher's interviews and 2 from the focused group discussion described the leadership styles of Headteachers in similar ways. The following was a typical example:

*Mmmmmmm, my Headteacher's leadership styles are poor and I don't see any effectiveness in it. He likes making most of the decisions in isolation and if they do not yield any results he blames the teaching staff for not supporting it. I will lie to you sir if I said I knew his vision for the school. He is very much concerned with the performance of both pupils and teachers but does very little concerning staff welfare. I think he has a lot to learn from other Head teachers. (Participant 1 from teacher's interviews).*

### 4.8.2 Administrative leadership (See 2.3).

2 participant from the teacher's interviews and 2 from the focused group discussion described the leadership styles of Headteachers in similar ways. The following was a typical example:

*I really don't understand our Headteacher because he spends most his time in the office and cares very little about what happens in the classroom or what teachers are doing. He will only ask the Deputy Headteacher whether all teachers have reported for work or not. His type of leadership has caused a lot of teachers to be reporting for work at any time and leave school at any time. His type of leadership has a negative effect on the performance of the school as a whole (Participant 8 from the focus group discussions).*

**4.8.2.1 No Time For Internal Monitoring (See Table 6).**

2 participant from the teacher's interviews and 2 from the focused group discussion described the leadership styles of Headteachers in similar ways. The following was a typical example:

> *You know, as administrators we have a lot of work to do in the offices. So, we really do have the time to monitor each and every teacher but I try sometimes when am not very busy. We normally relay on Heads of departments to do that since these teachers are directly under them (Participant 4 from teacher's interviews).*

Table 6. **Leadership styles of school managers**

| School | Effective leadership style | Not Effective leadership style | Total Number of Teachers |
|--------|----------------------------|--------------------------------|--------------------------|
| School A | 2 | 0 | 2 |
| School B | 0 | 3 | 3 |
| School C | 2 | 1 | 3 |
| School D | 1 | 2 | 3 |
| School E | 1 | 2 | 3 |
| Focus group | 4 | 6 | 10 |
| **Grand Total** | **10** | **14** | **24** |

Source: Author's field data, 2016.

**Table 7: Number of teachers of mathematics monitored in a term by school managers.**

| School | Monitored | Not Monitored |
|---|---|---|
| School A | 2 | 1 |
| School B | 0 | 3 |
| School C | 0 | 3 |
| School D | 1 | 2 |
| School E | 1 | 2 |
| School F | 0 | 3 |
| School G | 3 | 0 |
| School H | 2 | 1 |
| **Total Number of Teachers** | **9** | **15** |

Source: Author's field data, 2016.

## 4.9    Effective Leadership styles.

The 6 participants from the interviews and the 4 participants from the focus group discussions felt that the leadership styles practiced by the School Managers were effective (See Table 4).

### 4.9.1 Team Leadership (See 1.8).

All the 6 participant from the teacher's interviews and 4 from the focused group discussion described the leadership styles of Headteachers in similar ways. The following was a typical example:

> *I really love how our Headteacher works. She would want to have everyone on the same page and always would want to consult teachers on certain sensitive matters concerning school projects and on academic issues. She always want as to work as a team and not in isolation. If you have a problem as a teacher, she will always see to it that the problem is sorted out (Participant 10 from the focus group).*

### 4.9.2 Desire To Acquire Leadership Skills.

All 8 School Managers expressed the desire to acquire leadership skills if given chance to train. They spoke in a similar manner and following was a typical example:

> *I really have the desire to attend one of these courses offered by the ministry of Education on leadership but I have no opportunity. Previously, the ministry used to send Headteachers for refresher courses on leadership to Chalimbana College of education but now it's selective because the funds are not enough. I wish I could get the opportunity because I have a lot to learn out there (participant 1 from the Headteachers).*

# CHAPTER FIVE

# DISCUSSION OF FINDINGS

## 5.0    Introduction

This section of the study is a discussion of findings that were presented in the preceding chapter. It provides details of the themes that were presented in brief. The discussion is presented in line with the objectives of the study. The objectives that guided the study were:

1.    To ascertain the Professional relationship that existed between school managers and teachers of Mathematics.

2.    To examine the impact, the relationship between school managers and Teachers of Mathematics have on the teaching and learning of mathematics.

3.    To explore the effectiveness of managerial skills used by school managers to enhance the teaching and learning of mathematics.

The findings of the study from all the three categories of instruments namely; one to one interviews with both the teachers of mathematics and school managers, focus group interviews with teachers of mathematics in the department and document analysis from results analysis were simultaneously discussed based on the themes raised in the presentation chapter. The researcher chose this approach to avoid duplication of work and maintain a consistent flow of ideas. Additionally, it was easy to reach conclusions when all similar findings were presented together. In this way, incidences of ambiguity and repetition were reduced, if not avoided entirely.

## 5.1 Distribution according to Gender.

According to Table 1, the study revealed that more male respondents participated in the research than females. Nevertheless, it provided a mixture to the responses of the study.

## 5.2 Relationships between school managers and teachers of mathematics.

The study revealed that most teachers of mathematics did not have a good relationship with their school managers, while in other schools teachers of mathematics enjoyed a good relationship with their managers (See table 3). This shows that a considerably large number of teachers of mathematics do not enjoy a cordial relationship with their school managers

(See 4.4). This could be one the reasons for low academic performance for most teachers and pupils in the district.

As was discussed in the literature review, interpersonal relationships seem to affect the level of communication, teacher involvement in school governance as well as teacher involvement in the formulation of school policies. According to Edwards (1997), good communication is a critical ingredient of effective schools as well as a constant flow of information between administrators, teachers, students and parents. Furthermore, the interpersonal interaction between the school manager and teachers seem to be the fundamental ground upon which other relationships stem from. Fullan (1996) adds on to say, if the teacher- Headteacher relationship can be characterized as helpful, supportive, trusting, revealing of craft knowledge, so too will others. If this type of relationship lacks in a school, then the teaching and learning environment is affected.

It come out clearly from the participant's comments that some school managers had no concern for welfare of teachers. As the study discussed in the theoretical framework, this type of a manger can be liked to an authoritarian leader who is only mindful about production and not concern for human resource. Blake and Mouton (1985), contends that authoritarian leaders are high task orientated and low when it comes to relationships with the workers. They are very strong on schedules; they expect people to do what they are told without question or debate; when something goes wrong they tend to focus on who is to blame rather than concentrate on exactly what is wrong. (See 1.8 page 10).

## 5.3    Leadership styles of school managers.

On the leadership style of school managers, the study revealed that most teachers of mathematics viewed some school manager's leadership styles as not effective and having little impact in the academic affairs of school (See 4.6 participant 1). Most of the School Managers were just concerned with good results without attending to teachers concerns and problems. In other schools, Headteachers worked with their teachers as a team and attending to the teachers concerns as well as consulting them on certain matters.

A study done by Mwape (2009) in the Northern Province of Zambia on the effects of Head teachers' leadership styles on school climate also shows that the manner in which school managers carried out their duties affected the way teachers discharged their duties, as well as how they related to authority and one another which helped to create the type of climate in schools. What was coming out prominent in Mwape's assertion is the relationship between the style of management adopted by school managers and how it eventually affects the performance of teachers. He further stated that, school managers determine the kind of teaching and learning morale that is exhibited in the school.

An effective leader is therefore one who should be able to impact and inspire his or her subordinates. Cole (2009) argues that the managerial grid (in the theoretical frame work) explains why some organizations fail to perform. An effective manager is therefore one who strikes a balance between a concern for people and a concern for production. On the other hand, impoverished leadership style may bring disorder in school. According to Blake and Mouton (1985), an impoverished leader has no system of getting work done, nor is the work environment satisfying or motivating for employees. This leader's low interest in the work and the work environment results in disorganized work, dissatisfied employees and a lack of harmony. (See 4.8).

## 5.4    Internal Monitoring

One of the administrative roles of a school manager is to conduct internal monitoring. Thus, ensuring that proper teaching and learning is taking place smoothly. This improves the performance of both teachers and pupils in school. This study has however revealed that a lot of school managers in Kapiri district do not conduct internal monitoring which is very vital and exposes a lot of strengths and weakness in the way teaching is done (See 4.6.2).

From the literature review discussion, Cole (2009) stipulates that due to the fact that the policies, practices and procedures that the school adopts inevitably affect teaching and learning. It is also worth noting that school managers are perceived to play a vital role in teaching and learning when; they visit classrooms, observe teaching methods, review instructional objectives, and examine learning materials.

Helms (2006) also agrees that one of the administrative roles of school managers is to monitor, evaluate individuals, groups, and organizational performance to see whether organizational goals are being achieved. This makes them understand and accurately diagnose work situations and pinpoint the need for corrective action or strive to maintain and improve performance. Most Head teachers who were interviewed, acknowledged having a schedule showing how the internal monitoring and evaluation would be carried out in a particular term but the biggest challenge was implementation due to what they termed as office duties. This means that most school managers in Kapiri District do not carry out their administrative roles effectively and this could result in poor performance in the teaching and learning of mathematics.

## 5.5    Impact on the Teaching/ Learning of Mathematics.

The findings of the study showed that most teachers lamented over the lack of mathematical equipment and inadequate resource books. This discouraged the teachers from teaching effectively (See 4.7.1). The literature review discussion supports this view on the lack of teaching and learning materials.  Mbiti (1984) contends that the success of teaching in a school is a fundamental responsibility of the school manager. Through the utilization of all its human and material resources the Head Teacher helps the school to achieve a high level of performance. Moreover, the school manager must have a clear understanding of his/ her subordinates so as to satisfy their individual work needs. The individual work needs among the teachers of Mathematics includes a wide range of Mathematical equipment and facilities including latest text books.

The availability of the equipment has been cited as one of the factors that affects teaching and learning. Mbiti (1984) urges that, equipment and supplies for any one school should be adequate and available on time. Teachers cannot be expected to teach well, no matter how qualified they are, without supplies. The equipment must not only be available on time but latest also. Therefore, the school manager must ensure that none of his/ her classes suffers as a result of using outdated equipment or books.

The study shows that lack of latest and adequate teaching and learning equipment affects the proper teaching and learning of mathematics hence affecting the performance of both teachers of mathematics and the learners.

## 5.6    Academic performance of pupils.

According to the data analysis on grade nine (9) and twelve (12) results which were obtained from eight secondary schools in Kapiri Mposhi District, the performance of pupils in mathematics from 2011 to 2015 were not impressive. The study revealed that majority of pupils in these selected secondary schools performed below 40% normal pass rate (See 4.7.3). This could be attributed to lack of teaching and learning material as well as lack of close supervision by school managers. (See 4.8.2.1  participant 4).

## 5.7    School managers trained in managerial courses.

The study revealed that most school managers in Kapiri urban had relatively little experience as school managers and did not receive any training in managerial skills but have the desire to acquire these leadership skills (See 4.9.2 Participant 1).

When school managers were asked as to why they have not done training on management, many of them said that government through the Ministry of General Education allocate little resources for training of school managers at Chalimbana. Otherwise School Managers in Kapiri Mponshi were eager to train given an opportunity. This is a sad state of affairs considering that a special programme to train school managers at Chalimbana was put in place some time back to improve leadership skills in schools.

Mwanza (2004) adds on to say that Headteachers need to be trained in educational management in order for them to sharpen their leadership skills. The training enables mangers to be equipped with the much needed managerial skills, managerial attitudes, managerial knowledge and managerial styles which are catalysts for running organizations effectively. He further stipulated that management development should be part of the organization culture where every manager must be taken for management training. It must be borne in mind that not every individual is born with leadership qualities.

Lack of training by school managers is one of the reasons why teacher performance is low as revealed by this study. Therefore, it is imperative that relevant authorities must consider school manager's training as one of the priority sectors to enhance teacher and pupil performance.

## 5.8    Conclusion.

This chapter offered an interpretation of the findings obtained and demonstrated why the findings were relevant to the research and to other research carried out. It is hoped that the limitations of researcher bias was kept to a minimum in terms of its effect on respondents answers.

# CHAPTER SIX

## CONCLUSION AND RECOMMENDATIONS

### 6.0    Introduction.

This chapter presents the conclusions of the study and further makes recommendations to various stakeholders on things that ought to be improved or completely altered. The conclusions are closely tied to the study objectives which it sought.

### 6.1    Conclusion

### 6.1.1 Relationships between school managers and teachers of mathematics

On the overall the, study shows that most of the teachers of mathematics in the sampled schools did not enjoy a good relationship with their school managers and that discouraged most of them from teaching well. There was no collaboration and team work in most schools. Other teachers of mathematics enjoyed good interpersonal relationships with their school mangers which enabled them to work hard. This poor relationship affected the working culture in schools and in turn affected the performance of both teachers and learners.

### 6.1.2 Leadership styles of school managers.

As regards to the leadership styles of school managers, most teacher viewed the leadership styles of their Headteacher as not being effective and contributes little to the well-being of the school. In other schools, the leadership styles of Headteachers proved to be effective and contributed a lot to the academic performance of both teachers and pupils.

### 6.1.3   Internal Monitoring

On administrative roles of school managers, the study revealed that most managers in Kapiri Mposhi District did not carry out their administrative roles properly in terms of internal monitoring and supervision. This role lacked in most of the Headteachers despite having a programme to follow. Headteachers should be able to know that they are in management to shape and enhance proper teaching and learning and not to be in offices. This contributed to the poor performance of teachers in the classroom.

### 6.1.4. School managers trained in managerial or leadership courses.

Pertaining school managers being trained in managerial or leadership skills, the study reviewed that lack of management training by men and women who are appointed into management positions coupled with minimal experience in management contributed greatly to most of the poor performances in schools as regards to mathematics results. The implication is that as performance of teachers goes down, school managers do not use managerial skills, managerial attitudes and managerial styles to reverse the situation because they do not possess them.

On the other hand, there is minimal use of managerial knowledge in the day to day activities of school managers as revealed by the study.

### 6.1.5.   Impact on the Teaching/ Learning of Mathematics.

The study revealed that lack of teaching and learning equipment affected the proper teaching and learning of mathematics in most schools which were sampled. The teacher's qualifications only cannot produce good results. He/she need to use latest books and equipment to enhance proper teaching and learning of pupils.

Even if other pupils may access these books from their parents, an average pupil cannot manage to buy these books because they are costly.

### 6.1.6 Academic performance of pupils.

As regards academic performance of pupils, the study showed that most of the pupils in Kapiri Mposhi District performed poorly in final Mathematics examinations from the 2011 to 2015. From the triangulation results, it is evident that the poor performance of pupils can be as a results of poor relationships between teachers of mathematics and school managers, lack of adequate teaching and learning materials and lack of proper supervision by school mangers.

### 6.2    Recommendations.

The findings of the study highlighted on some issues that could be considered to improve secondary school education. The study therefore made the following recommendations:

### 6.2.1   On Policy

Government through the Ministry of General Education (MOGE) must put in place appropriate and objective measures which will help to monitor and correct school managers that have a tendency of frustrating teachers.

The Senior Education Standards Officer (SESO) in charge of Mathematics in the province must address other non-interpersonal de-motivating factors by school managers. These includes among other, latest reference books, mathematical equipment, making blackboards in classrooms to have square boxes to mention but a few.

It is important that those charged with the responsibility of running education must consider sending school managers for management training. This will enable them to be equipped with the much-needed skills in management to run school effectively, one of which is to enhance teacher performance a key element for the success of every education institution.

### 6.2.2 On Practice

School managers should maintain and foster cordial and professional interpersonal relationships with teachers to enhance the academic performance of pupils in secondary schools.

Headteacher should make sure that money for buying books and other equipment are utilized accordingly.

### 6.2.3 Prospects for future research.

After the findings were concluded, the study advances the following suggestions as considerations for future research:

Increasing the scope of the study to include more respondents and observe if the findings would be consistent.

Conducting a comparative study of rural and urban schools on the topic. This could provide vital information on whether professional relationships between school managers and teachers of mathematics could be affected by location or environment.

Future research should look at the relationship between school manager's length of service in management position and teacher performance.

## 6.3    Contribution.

This study would contribute a lot in ensuring that there is a balance of relationships between School managers, the teaching staff and academic performance.

School Managers will also appreciate that leadership styles and skills add value to the smooth running of a school.

## 6.4    Summary

The objective of this research was to:

1. To ascertain the Professional relationships that existed between school managers and teachers of Mathematics.

2. To examine the impact, the relationships between school managers and Teachers of Mathematics have on the teaching and learning of mathematics.

3. To explore the effectiveness of managerial skills used by school managers to enhance the teaching and learning of mathematics.

The study has ascertained that the relationships that existed between the school managers and the teachers of Mathematics were cordial, fair and not cordial. These relationships had an impact on the teaching and learning of mathematics.

The study also explored the effectiveness of managerial skills and leadership styles. These included among others team leadership, authoritarian and administrative leadership styles. These also had an effect on the teaching and learning of mathematics.

# REFERENCES

Arksey, H. and Knight, P. (1999). **Interviewing for social scientists.** London: Sage.

Bailey, K.D. (1989). **Methods of social research.** California: Wardworth.

Barth, R. (1990). **Improving Schools from within. Teachers, Parents and Principals c an make the Difference.** San Francisco: Jossey- Bass.

Birley, G and Moreland, N. (1999). **A practical guide to academic research.** London: Kogan.

Blake, R.; Mouton, J. (1985). **The Managerial Grid III: The Key to Leadership Excellence.** Houston: Gulf Publishing Co.

Bless, C., Higson-Smith, C. and Kagee, A. (2006). **Fundamentals of social research methods: An African perspective.** (4th ed). Cape Town: Juta.

Bryman, A. (2004). **Social Research Methods.** (2nd Ed.). Oxford: Oxford University Press.

Bush, T. (2007). Educational leadership and management: theory, policy and practice. **South African Journal of Education** 27 (3) 391-406.

Clarke A (1999). **Evaluation Research: An introduction to principles, methods and practice.** London: Sage.

Cohen, L., Manion, L and Morrison, K (2007). **Research Methods in Education (6th ed).** New York: Routledge publication.

Cole, A.G. (2009). **Personnel and Human Resource Management.** 5th Edition, Kogan Page, London.

Corkcroft, W. H (1982). **Mathematics Counts**. London: Her Majesty's Stationary Office.

Creswell, J. W. (2003). **Research design: Qualitative, quantitative, and mixed method Approaches (2nd ed).** Thousand Oaks, California: Sage Publications Ltd.

Curriculum Development Centre, (2013). **"O" Level Mathematics Syllabus Grade 10 to 12**. Lusaka: CDC.

Donmoyer, R., & Wagstaff, J. G. (1990). Principals can be effective managers and instructional leaders. **NASSP Bulletin,** *74***(525)**, 20-29.

Edgerson, D. E. & Kritsonis, W. A. (2006) "Analysis of the Influence of Principal Teacher Relationships on Student Academic Achievement; **A National Focus "National Journal for Publishing and Mentoring Doctoral Student Research***:* **1(1).**

Edwards, C. H. (1997). **Classroom Discipline and Management (2th Ed.).** New Jersey: Prentice-Hall, Inc.

Examinations Council of Zambia. (2014). **School Certificate and GCE Mathematics Examiners Report.** Lusaka.

Farrant, J. S. (1991). **Principles and Practice of Education**. England: Longman.

Fowler, F.J. jr (1993). **Survey research methods** (2nd ed.) Newbury Park: Sage.

Fretterman, D.M. (2006). Ethnography: Step by step. **Applied Social Research Methods Series**, Vol. 17. California: Sage.

Fullan, M. (2001). **Leading in a Culture of Change**. San Francisco: Jossey-Bass.

Fullan, M. G. (1996). **The New Meaning of Educational Change (2"" Ed.)**. London: Cassell Educational Limited.

Glesne, C. (1999). **Becoming qualitative researchers: An introduction** (2nd ed.) New York: Longman.

Helms, M.M. (2006). **Encyclopedia of Management 5th edition**. Thomson Gale, New York.

Horng, E.L., Klasik, D and Loeb, S (2010). "Principal Time-Use and School Effectiveness. **"American Journal of Education 116,** no. 4: 492-523.

Jackson, S.L. (2009). **Research methods and statistics: A critical thinking approach. 3rd edition.** Belmont, CA: Wadsworth.

Johnson, J, A., Dupuis, V. L., Musail, D., Hall, G. E., & Gollnick, D. M. (1996**). Introdu ction to the Foundations of American Education (10th" Ed.).** Boston: Allyn & Bacon.

Kumar, R. (2005). **Research Methodology – A Step by Step Guide for Beginners.** (2nd Ed.). London: SAGE Publications Ltd.

Kip, K. (2014). **Creating a Collaborative Organizational Culture**. Northern Carolina, U.S.A: UNC Executive Development.

Kokemuller, N. (2013**). Poor Leadership & Its Effects on the Staff and Company**. Retrieved from Business & Entrepreneurship from http://yourbusiness.azcentral.com/ Poor Leadership & Its Effects on the Staff and Company -219.html.

Leedy, P.D. and Ormrod, J.E. 2005. **Practical research: Planning and design. (8th ed.)** New Jersey: Pearson Education International.

Kombo, D.K. & Tromp, D.L.A. (2006). **Proposal and thesis writing: An introduction.** Nairobi: Paulines

Kumuyi, W. F. (2006) "Wanted; Leaders!" **New African:** No. 456: 20.

Legotho, M. W., Maaga, M. P., & Sebego, M. G. (2002) "Perceptions of Stakeholders on Causes of Poor Performance in Grade 12 in a Province in South Africa" South **African Journal of Education.** 22(2): 113-118.

Maxwell, J. (2007). **Qualitative research design (2nd ed. Vol. 42).** Thousand Oaks, CA: Sage.

May, T. (1997). **Social Research – Issues, Methods & Process.** (2ⁿᵈ Ed.). Buckingham: Open University Press.

Mbiti, D. M. (1984). **Foundations of School Administration.** Nairobi: Oxford University Press.

Mc Millan J H & Schumacher S (2006) **Research in Education: Evidence based Inquiry** sixth edition USA: Pearson.

M'soni, J. (2010). **A Comparative Study of Academic Performance of Girls in Mathematics. Lusaka, Zambia:** University of Zambia.

Mwape, K (2009). **The effects of Headteacher's Leadership Styles on School Climate.** M.Ed Thesis, University of Zambia.

Mwanza, P (2004**). Teacher Perception of School Management Practice and their Influence on Teacher Performance in Selected High Schools in Lusaka,** M.Ed. Thesis, University of Zambia.

Nation, J. (1997). **Research Methods**. New Jersey: Prentice-Hall Inc.

Nieuwenhuis J (2007) Qualitative research designs and data gathering techniques in Maree K (ed). **First Steps in research**. Pretoria: Van Schaik.

Nkhata, B (1999). **The relationship between Learning of Mathematics and learning of Science and Technology Amongst Girls in Zambia**. In Goeland Burton (Eds), Mathematics as a Barrier to the Learning of Girls. London: Commonwealth Secretariat.

Punch, K. (2000). **Developing Effective Research Proposals**. London, California, New Delhi: Sage.

Punch, K.F. (2009). **Introduction to research methods in education.** London: Sage. Masitsa, M. G. (2005) "The Principal's Role in Restoring a Culture of Learning in Township Secondary Schools" **Africa Education Review**: 2(2): 205- 220.

Miles, M.B. & Huberman, A.M. (2008**). Qualitative data analysis. 2nd Edition**. Newbury, CA: Sage.

Ministry of Education (1996). **Educating Our Future: National Policy on Education.** Ministry of Education, Lusaka.

Murphy, J. (1990). Principal instructional leadership. In R. S. Lotto & P. W. Thurston (Eds.), Advances in educational administration: Changing perspectives on the school (Vol. 1, Pt. B, pp. 163-200). **Greenwich, CT: JAI.**

Patton, M.Q. (1990). **Qualitative evaluation and research methods 2. 2nd edition.** California: Sage.

Punch, K. (1998). **Introduction to Social Research: Quantitative & Qualitative**

**Approaches.** London: SAGE Publications Ltd.

Sarason, S. (1982). **The Culture of the School and the Problem of Change (Rev Ed.).** Boston: Allyn & Bacon.

Sebring, P. B., & Bryk, A. S. (2000). **School leadership and the bottom line in Chicago.** Phi Delta Kappan, 81, 440-443.

Tabachnick, B.G. & Fidell, L.S. (2007). **Using multivariate statistics. Fifth edition.**
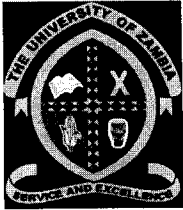
Boston: Allyn and Bacon.

Trochim, W.M.K. (2006). **Research methods knowledge base. 2nd edition.** USA: Atomic Dog.

UNESCO (2014). **Introduction to Educational Management.** Nairobi, Kenya: UNESCO.

Wiersma, W. (1991). **Research methods in education.** (5th ed.). Boston: Allyn & Bacon.

Appendix I

Interview Guide for Head Teachers

UNIVERSITY OF ZAMBIA/ ZIMBABWE OPEN UNIVERSITY

SCHOOL OF EDUCATION

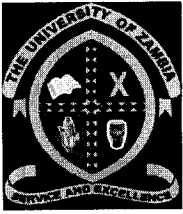## AN INTERVIEW GUIDE FOR HEAD TEACHERS (ADMINISTRATORS) (A)

Introduction

I am a student at the University of Zambia currently studying Master's degree in Educational Administration and Management. I am researching on the relationship between the Administration and teachers of Mathematics and its effect on teaching and learning. Whatever information that I shall collect will be treated with the highest level of confidentiality and for academic purposes only.

1. How many teachers of Mathematics do you have?

2. How many of these teachers offer purely Mathematics?

3. How many are degree holders and diploma holders?

4. How can you rate your relationship with the teachers in the Mathematics department?

5. Do you have any programme which you use with your team to monitor teachers?

6. How often do you monitor the teachers in the mathematics department?

7. Given a chance to choose between being a teacher of Mathematics and a teacher of any

other subject, what could be your choice and why?

8. How many years have you been a head teacher at this school?

9. How do you rate the performance of teachers of Mathematics?

10. What reasons can you give for good performance of teachers of Mathematics?

11. What factors contribute to poor performance of teachers of Mathematics?

12. How is your collaboration and team work with the teachers of Mathematics?

13. What reasons can you give for your answer?

14. How do you rate the performance of pupils in Mathematics in your school?

15. What reasons can you give for good performance of pupils in Mathematics?

16. What factors contribute to poor performance in Mathematics?

17. Have you at any time been trained in any managerial course either offered by the Ministry of general education or by any university.

**Interview Guide for Teachers of Mathematics**

UNIVERSITY OF ZAMBIA/ ZIMBABWE OPEN UNIVERSITY

SCHOOL OF EDUCATION

**AN INTERVIEW GUIDE FOR TEACHERS OF MATHEMATICS (B)**

Introduction

I am a student at the University of Zambia currently studying Master's degree in Educational Administration and Management. I am researching on the relationship between the Administration and teachers of Mathematics and its effect on teaching and learning of Mathematics. Whatever information that I shall collect will be treated with the highest level of confidentiality and will not be revealed to any unauthorized persons. The data I shall collect will be for academic purposes only.

1. How many years have you been teaching in your school?

2. How can you describe your relationship with the school manager?

3. Does your relationship with your Headteacher affect the teaching and learning of

mathematics?

4. What reasons can you give for your answer?

5. How can you describe your future interpersonal relationship with your Headteacher?

6. Do you always receive adequate teaching materials and support from the head teacher?

7. What has contributed to this situation?

8. Who supplies your materials for teaching and learning of Mathematics (Free or you buy)?

9. Do you receive materials that are recommended by the Ministry of General Education?

10. Are there any problems that are affecting the teaching and learning of Mathematics in your school?

11. How can you describe the leadership style of your Headteacher?

12. What things would you have wanted your Headteacher to do in order to enhance the teaching and learning of Mathematics at this school?

13. How many times has the Headteacher or Deputy visited you to observe any of your lessons?
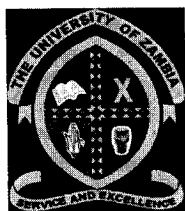
**DISCUSSION QUESTIONS FOR THE FOCUS GROUP**
**Mathematics Department Teachers.**

UNIVERSITY OF ZAMBIA/ ZIMBABWE OPEN UNIVERSITY

SCHOOL OF EDUCATION

**AN INTERVIEW GUIDE FOR THE FOCUS GROUP.**

Introduction

I am a student at the University of Zambia currently studying Master's degree in Educational Administration and Management. I am researching on the relationship between the Administration and teachers of Mathematics and its effect on teaching and learning of Mathematics. Whatever information that I shall collect will be treated with the highest level of confidentiality and will not be revealed to any unauthorized persons. The data I shall collect will be for academic purposes only.

1. Discuss the challenges that you face in the department which affect the teaching and learning of mathematics.

2. Discuss how managerial and leadership skill affect the relationship between school managers and teachers of mathematics in the department.

3. How willing is the school manager to approve the budget for mathematics department

and ensure that the budgeted items are purchased?

## APPENDIX IV: TIME LINE

| DATE | ACTIVITY | EVALUATION |
|---|---|---|
| Jan- Feb. 2016 | Preparing & presentation Proposal | |
| Mar 2016 | Chapter 1 - Introduction | |
| Apr 2016 | Chapter II – Literature Review | |
| May 2016 | Chapter III – Research Methodology | |
| Jun 2016 | Chapter IV – Data Presentation Analysis and Interpretation | |
| Jul 2016 | Chapter V, Chapter VI – Summary Conclusions and recommendation | |
| Jul 2016 | Submission of Draft | |
| **July 2011** | **Final Draft** | |

In regards to establishing an active plan, my anticipated time line is set flexibly as follows:

# APPENDIX V

## COVER LETTER FOR DATA COLLECTION

Dear Madam/Sir,

**RE: REQUEST FOR DATA**

I am a post graduate student pursuing a Master of Education Degree (M.Ed.) at The University of Zambia. As part of the course, I am required to submit a research project on; **PROFESSIONAL RELATIONSHIP BETWEEN SCHOOL MANAGERS AND THE TEACHING/LEARNING OF MATHEMATICS IN SELECTED SECONDARY SCHOOLS IN KAPIRI – MPOSHI DISTRICT.** To achieve this, you have been selected to participate in the study. I kindly request you to fill the attached questionnaire to generate data required for this study. This information will be used purely for academic purposes and will be treated in confidence and will not be used for publicity. Your name will not be mentioned in the report.

Your assistance and cooperation will be highly appreciated.


Thank you in advance.


Yours faithfully,

Joseph, Sikatali

Comp #: 714802783

The University of Zambia/Zimbabwe Open University

## APPENDIX VI

### Participant Consent Letter

The purpose of this research study is to determine the professional relationships that exist between School managers and the teaching/learning of mathematics. I understand that the research is being carried out in part fulfilment of the requirements leading to the award of a Masters degree in Educational Management.

I ……………………………………………..agree to be interviewed and take part in this study about the professional relationships that exist between School managers and the teaching/learning of mathematics. I understand that my participation is on a voluntary basis and I am free to withdraw from the study at any time. I also understand that all the information I provide will be confidential and my name will be anonymous throughout.

I agree to have the interview recorded.

Signed: ……………………………....

Date: ………………………………

# APPENDIX VII

## BUDGET

| ITEM | COST | TOTAL AMOUNT |
|---|---|---|
| Paper | 4 Reams at K 60 each | K240.00 |
| Printing of documents | 4 x K250 | K1000.00 |
| Binding of documents | 4 x K25 | K100.00 |
| Photocopying | | K250.00 |
| Transport | | K1000.00 |
| Accommodation | | K5000.00 |
| Food | | K4000.00 |
| Miscellaneous | | K2000.00 |
| TOTAL | | **K13, 590.00** |