

**CAUSAL ATTRIBUTIONS OF FAILURE IN MATHEMATICS EXAMINATIONS BY
PUPILS IN SELECTED JUNIOR SECONDARY SCHOOLS IN NAKONDE DISTRICT,
ZAMBIA**

BY

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**A dissertation submitted to the University of Zambia in partial fulfilment of the
requirement for the award of the degree of master of education (Educational Psychology)**

THE UNIVERSITY OF ZAMBIA

LUSAKA

2015

AUTHOR'S DECLARATION

I, Silomba Harry Jordan,do hereby solemnly declare that this dissertation is my own originalwork and that it has not been previously submitted for an award of a degree at this or any other university.

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CERTIFICATE OF APPROVAL

This dissertation by Silomba Harry Jordan is approved as a partial fulfilment of the requirements for the award of the degree of Master of Education in Educational Psychology at the University of Zambia.

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DEDICATION

To my beloved wife Mutale Gift Silomba, whose love, understanding, patience and support I will always cherish in my life. To my beautiful daughters Precious Nalomba, Chilufya Nalomba, my handsome sons Silomba Gerald and Silomba Harry Junior. To entire extended family and friends for all the love and sacrifices they made for me and to God who gives me strength.

ABSTRACT

This study sought to investigate the causal attributions to failure in public grade nine mathematics examinations in Nakonde district. A mixed method research design utilizing both quantitative and qualitative techniques of research was used in the study. A likert scale questionnaires, focus group discussions and interview schedules were used to collect data. Participants (N=150) were made up of 30 teachers and 120 pupils who were drawn from 6 junior secondary schools. Descriptive statistics and content analysis were used to analyse quantitative and qualitative data respectively. The study provides evidence that pupils attribute their failure largely to external causes than to internal ones. Internal causal attributes included lack of interest/effort, lack of natural ability, inability to study, pupil's laziness, and pupil's absenteeism. In this case pupils' belief was that they were failing not because of their own making but because of factors that were emanating from their external learning environment, including, incompetent teaching, poor teaching methods, subject being difficult, and the works of odds. The results clearly showed that pupils lacked innate talent (i.e. internal stable uncontrollable) of attributing failure to themselves. It was also established that teachers attributed lack of their own effort, ability, interest, incompetence, subject disliking, bad study habits and not making the subject enjoyable as internal factors which contributed to low performance in mathematics. Furthermore, external teachers' causal attributions such as non motivating environment, school type, peer influence, pupils been unlucky, pupils' absenteeism, mathematics being difficult, pupils not liking the subject and lack of teaching/learning materials, were considered as additional causal factors to poor performance. Finally it was revealed that effects due to locus of control, stability and controllability, had a detrimental effect on academic performance. The study concluded that lack of innate talent, low self-esteem, lack of interest, negative attitude, anger, feeling of shame, non motivating environment, laziness in teaching and learning led to unpleasant low grades in mathematics. The results of this study confirm the predictions of the attribution theory and are in line with the findings of similar studies conducted in other countries. Recommendations to improve performance include helping pupils to focus on effort as the main driver of success, teachers to intensify guidance and counseling sessions where the importance of doing mathematics is shared. Further, empowering the pupils with the awareness that, they have control over their actions and that they can change outcomes, academic self-esteem can be enhanced and future success optimized.

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TABLE OF CONTENTS

AUTHOR’S DECLARARTION.....	i
COPYRIGHT APPROVAL.....	ii
CERTIFICATE OF APPROVAL	iii
DEDICATION	iv
ABSTRACT.....	v
ACKNOWLEDGEMENTS	vi
TABLE OF CONTENTS	vii
LISTS OF FIGURES.....	xi
LISTS OF TABLES	xii
LIST OF APPENDICES.....	xiii
LIST OF ABBREVIATIONS.....	xiv
CHAPTER ONE INTRODUCTION.....	1
1.0 Overview	1
1.1 Background of the study	1
1.2 Causal attributions - Overview	6
1.2.1 The first causal dimension: locus.....	7
1.2.2 The second causal dimension: stability	8
1.2.3 The third causal dimension: controllability	9
1.3 Statement of the problem	11
1.4 Purpose of the study.....	11
1.5 Specific objectives of the study:	12
1.6 Research questions.....	12
1.7 Significance of the study	12
1.8 Theoretical frame work.....	13
1.9 Study Sites.....	13
1.10 Limitation of the study:.....	14
1.11 Delimitation of the study:.....	14
1.12 Operational definition of terms.....	14
1.13 Organisation of the Study.....	15

CHAPTER TWO LITERATURE REVIEW	16
2.0 Overview	16
2.1 Pupils’ attributions to their failure in public grade nine mathematics examinations	16
2.2 Teachers’ attributions to the failure of pupils in public grade nine mathematics examinations.....	26
2.2.1 Taking on a blame as a causal attribution.....	27
2.2.2 Negative peer influence as a causal attribution.....	29
2.2.3 The attributions caused by the influence of school type	30
2.3 Effects of attribution to failure on performance in mathematics	31
2.3.1 Effects due to locus of control	33
2.3.2 Attribution effects due to negative teachers’ feedback	36
2.3.3 Attribution effects due to teacher expectations.....	39
2.3.4 Past history of successes and failures as causal attribution	40
2.4 Summary	41
CHAPTER THREE METHODOLOGY	43
3.0 Overview	43
3.1 Research designs.....	43
3.2 Study Sites.....	46
3.3 Target population.....	46
3.4 Sample size.....	46
3.5 Sampling procedure	47
3.5.1 Demographic details of teacher’s qualifications and teaching experiences.....	48
3.6 Instrument for data collection.....	49
3.6.1 Focus Group Discussion Guide	49
3.6.2 Likert scale Questionnaires.....	50
3.6.3 Interview guide	51
3.7 Pilot study sampling procedure	51
3.8 Procedure for data collection.....	52
3.9 Data analysis	52
3.10 Ethical considerations	53
CHAPTER FOUR RESEARCH FINDINGS	54
4.0 Overview	54
4.1 Pupils’ causal attributions to their failure in grade nine public mathematics examinations.....	54

4.1.1	Pupils’ internal causal attributions	54
4.1.2	Pupils’ external causal attributions.....	61
4.2	Teachers’ attributions on the failure of grade nine pupils in public mathematics examinations.	69
4.2.1	Internal teacher’s causal attributions	69
4.2.2	External teachers’ causal attributions to the failure of grade nine pupils in public mathematics examinations	73
4.3	How attributions of failure affect future performance in public grade nine mathematics examinations	82
4.3.1	Effects due to locus of control and stability.....	82
4.3.2	Effects due to controllability and stability.....	85
4.3.3	Attribution Effects due to teacher expectations	87
4.3.5	Attribution effects due to past history	89
4.6	Summary	90
CHAPTER FIVE DISCUSSION		91
5.0	Overview	91
5.1	Pupils’ causal attributions to their failure in grade nine public mathematics examinations.....	91
5.1.1	Pupils’ internal causal attributions	91
5.1.2	Pupils’ external causal attributions.....	96
5.2	Teachers’ causal attributions to the failure of grade nine pupils in public mathematics examinations	100
5.2.1	Teachers’ internal causal attributions	101
5.2.2	Teachers’ external causal attributions	102
5.3	How attribution of failure affects future performance in public grade nine mathematics examinations?.....	109
5.3.1	Taking on the responsibility for negative academic outcomes	110
5.3.2	Effects due to controllability.....	113
5.3.3	Attributions effects due to expectations.....	115
5.3.4	Attributions effects due to negative feedbacks	116
5.3.5	Attributions to past academic history	118
5.4	Summary	119
CHAPTER SIX CONCLUSIONS AND RECOMMENDATIONS		121
6.1	Introduction	121
6.2	Conclusion.....	121

6.3 Recommendations.....	122
6.4 Suggestions for Further Research.....	123
REFERENCES.....	125
APPENDICES	141

LISTS OF FIGURES

Figure 1: lack of interest in mathematics	56
Figure 2: Pupils' responses to not having natural ability in mathematics	59
Figure 3: Responses on poor teachers' methods/strategies.....	62
Figure 4: Pupils' response as to whether the odds worked against their performance	68
Figure 5: Internal Teachers' causal attributions to pupils' performance	69
Figure 6: External Teachers' causal attributions	73
Figure 7: Whether educators and pupils were satisfied with pupil's result	82
Figure 8: Whether pupils' failure was due to pupils themselves or other people or circumstances	83

LISTS OF TABLES

Table 1: Muchinga Province Scores as Percentage: 2012 – 2014	4
Table 2: Nakonde Scores as Percentage: 2009 – 2014	4
Table 3: Locus and Stability classification scheme for perceived causality.....	9
Table 4: Dimensional Classification Scheme for Causal Attributions	10
Table 5: Demographic information of respondents by gender	47
Table 6: Details of teachers' qualifications, age and their teaching experiences	49

LIST OF APPENDICES

Appendix 1:-Mathematics causal attribution scale- questionnaire for pupils.....	141
Appendix 2: In-depth interviews thematic questions for pupils	145
Appendix 3: Mathematics causal attribution scale -questionnaire for teachers.....	148
Appendix 4: In-depth interviews thematic questions for mathematics Teachers	152
Appendix 5: FGD for the Head Teachers, Deputy Head Teachers, Mathematics Heads of Department and Guidance and Counselling Teachers	155
Appendix 6: Exemption from full ethical clearance	158

LIST OF ABBREVIATIONS

CBU:	Copper belt University
DEBS:	District Education Board Secretary
ECZ:	Examinations Council of Zambia
GCT:	Guidance and Counseling Teacher
FGD:	Focus Group Discussion
IQ:	Intelligent Quotient
MCAS:	Mathematics Causal Attribution of Scale
MESVTEE:	Ministry of Education Science, Vocation Training Early Education
MoE:	Ministry of Education
MMR:	Mixed Method Research
SPSS:	Statistical Package for Social Sciences
SACMEQ:	Southern and Eastern Africa Consortium for Monitoring Education Quality
TV:	Television
UNESCO:	United Nation Educational Scientific and Cultural Organisation
USA:	United States of America
UNZA:	University of Zambia

CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter presents the background of the study, the statement of the problem and the purpose of the study. It also includes the study objectives, research questions, limitations and delimitation of the study. It further highlights the significance of the study and the operational definition of terms.

1.1 Background of the study

Academic performance of pupils has been the subject of intensive research over the past years as it occupies a very important place in education as well as in the learning process. Academic failure is often a matter of great concern to stakeholders in education as it indicates wastage of the enormous resources which are channelled to the system (Ministry of Education Science, Vocation Training Early Education, 2011). The extremely low performance also poses some threats to the future educational development of pupils. It also poses some negative effect on the overall development of the country. Achievement is influenced by many factors which educational research has been tasked to determine and feed the findings to the teaching-learning process in order to enhance its effectiveness. In this regard researchers and educationists have a huge task of exploring variables that are associated with the quality of performance of pupils.

In Zambia, the education system comprises of pre-school, seven years primary and five years of secondary education. The secondary level is divided into two; namely; grade eight to nine as junior secondary and grade ten to twelve as senior secondary (MESVTEE, 2011). At all levels of the education system in Zambia, mathematics is an indispensable subject accorded with a premium position among school subjects. It is an important subject that every pupil must register and pass in order to advance to higher levels of education. Umamer (2011) in his study supports by stating that learning mathematic is like bedrock which is a tool for advancement of any nation. In his research, Mthethwa (2011) views mathematics as a branch of study that deals with logic, decision-making, deductions, assumptions, precision, clarity of thought and the ability to solve problems in a calculative manner by following a series of steps. This subject affects all

aspects of human life at different degrees. For instance, UNESCO (2003) reports that mathematics is relevant in economics, political, geographical, scientific and technological aspects of human. This is because it is centred on the use of numbers which is an integral component of every aspect of knowledge. Other areas where the use of numbers predominantly include: statistics, accounts, arithmetic, engineering and so on. Ideally, mathematics is an important subject not only from the point of view of getting an academic qualification at school, but also as a subject that prepares the pupils for the future tasks, irrespective of which career path they choose to follow (Davis & Hersh, 2012).

In addition, as Schoenfield (2012) observes, mathematical acquaintance plays a vital role in understanding the contents of other junior secondary school subjects. The subject is seen as the language used to describe the problems arising in most branches of science and technology. It is a subject that is related to other school subjects in areas like number and numeration in geography, solution of equation, area and volume in science subjects. In spite of the premium position occupied by mathematics, there has not been a remarkable improvement in the pupils' performance as reviewed by the study conducted in 2010 by the Southern and Eastern Africa Consortium for Monitoring Education Quality (SACMEQ). The study aimed at testing mathematics and reading achievements in 15 countries in Eastern and Southern Africa. Zambia was ranked as the worst with a decline in its performance in mathematics and reading (Meshack & Mark 2010).

Furthermore, UNESCO (2003:p79) also notes that "pupils' performance in mathematics has been a great concern to the society, poor performance in mathematics has resulted in opting out of many courses and eventually, opting out of many job opportunities." Despite the beneficial role exhibited by mathematics both in enhancing intellectual capacity of other school subjects and its general role in individual's day to day life, pupils continue to fail the subject at various levels in the school system (Meshack&Mark, 2010). The poor performance of pupils in mathematics subjects is arguably an indication of a danger signal in the educational system owing to its continued image as stumbling-block in the realization of the educational and employment desire of many candidates. The situation also deters entry into other high education levels such as in those higher grades in the secondary schools in Zambia (MESVTEE, 2011).

In Zambia, good performances at grade nine levels paves way to grade ten in secondary schools and such performance is measured through public examinations conducted by the Examinations Council of Zambia (ECZ). ECZ is the foremost examining board established by law to determine the examinations required in the public interest. The board conducts examinations and awards certificates comparable to those of equivalent examining authorities internationally. The board also passes judgment on the quality of education offered by academic institutions such as primary, secondary and some colleges. Results from ECZ are the yardstick for the measurement of quality education at grade nine levels by many educators (ECZ, 2007).

Academic performance therefore, becomes a great source of concern both by educators and pupils at large upon publication of results. For example, the grade nine 2013 results which were announced by the ministry of education indicated a drop pass rate compared to the previous year's examination results. It was noted that out of the 291,018 who sat for the examinations in 2012, only 100,824 candidates passed, compared to 124,331 who made it in 2011 (Post newspaper, 1st February, 2013). The announcement of the results perpetuated endless heated debates in secondary schools on what or on whom to lay the blame for the drop rate. Basically success in academics is a socially desirable event while failure is socially undesirable. It is undesirable as at times it brings misery and discomfort to pupils and society, for example, on 29th April, 2014, a 23 year old woman of Livingstone committed suicide by jumping into the Victoria falls after allegedly failing the examination and in the same year, a katete boy committed suicide after failing grade 12 examination (post news paper 29th April 2014).

Mathematics performance in Muchinga province and at district levels has persistently remained low in comparison with other Subjects as shown in Table 1 below.

Table 1: Muchinga Province Scores as Percentage: 2012 – 2014

Year	2012	2013	2014
English	29.9	30.9	31.6
Mathematics	27.4	24.3	26.7

Source: Muchinga Province Education Office

Muchinga is among the 10 provinces found in Zambia, the province was created in 2011. Performance in mathematic in Muchinga has been poor in comparison with other subjects. The best performance attained was 27.4% in 2012. Equally at district level performance in mathematics have not been so much impressive. From Table 1.1, it can be noticed that mathematics was always below other subjects and it shows ups and downs as the year's progress.

Table 2: Nakonde Scores as Percentage: 2009 – 2014

Year	2009	2010	2011	2012	2013	2014
English	38.5	34.0	32.8	37.8	39.6	33.8
Mathematics	15.5	16.7	16.9	21.8	18.7	19.6

Source: Nakonde District Education Office

In response to such performance, there have been government efforts like in servicing mathematics teachers through the introduction of fast track degree, review of the syllabus, scrapping off the examination fees at grade nine levels and establishing of mathematics

association in districts among others. Despite such effort, mathematics performance is still very low (MESVTEE 2013). The portrayed failure in national examinations stimulates stake holders in education; teachers are being blamed for the state of affairs. Equally among other questions that arise are how do pupils themselves see the phenomenon of academic failure and how do they feel after learning that they have failed the examination? Ideally such questions enlighten educators and pupils that academic achievement is characterized by achievement disparities which at time become problematic in terms of sourcing for its roots.

In view of the aforementioned, stakeholders in education, including researchers have long been interested in exploring variables that are associated with the quality of performance of pupils in mathematics. The variables may be grouped as either inside or outside the school. Literature has also classified studies on pupils' performance in terms of pupils' factors, family factors, school factors and peer factors (Crosnoe, Johnson & Elder, 2004). In Zambia researchers have studied various factors that have been identified as possible contributors to the variations in academic performance. The variables include: Self-concept and Psycho-social Adjustment (Munsaka, 2000; Kasonde -Ng'andu, 2007); Relevance of Guidance and Counselling Services offered to Pupils (Ndhlovu, Kasonde-Ngandu, & Phiri, 2012); Teacher-Students Attitude (Serenje, 2012); Reading Difficulties (Matafwali, 2005); School Environment and Discipline (Banja, 2002). These are some of the variables researchers have investigated and considered vital in the comprehension and prediction of pupils' academic performance. Despite all these possible predictors, the quality of educational achievement, particularly in mathematics, is still low (MESVTEE 2013). As earlier stated, some researchers have looked beyond the aforementioned factors to other related areas within the teaching-learning arena including cognitive structures and psychological constructs. Under such psychological domain are constructs like self-efficacy, self-esteem, self-concept, intelligence quotient, emotional quotient amongst others, which are concerned about different stimuli that drive attainment of high quality educational achievement. An emerging variable within this realm of the psychological constructs is the teacher-pupil causal attributions, the anticipated variable which might be spearheading high failure rate in mathematics in the district, province and country at large.

The aforementioned situation reveals a knowledge gap in the study of this unique psychological construct among pupils and its probable effect on achievement in Zambian public grade nine

mathematics examinations. However, it must be noted that what is not known in Zambia is whether the causal attribution of failure in academic performance and its effect could negatively affect educational outcomes. Research has shown that a negative and unexpected pupils' outcome such as test failure frequently results in an attributional search by teachers (Clark, 1997). Educators employ pupils' prior knowledge or antecedent cues (Graham, 1991), such as performance history and social norms, to deduce the causes of any unpleasant educational outcome (Kelley & Michaela, 1980; Weiner, 1979). Causal attributions become unavoidable when searching for the failure causality.

1.2 Causal attributions- Overview

Academic achievement is characterized by achievement disparities which at times becomes challenging in terms of sourcing for its roots. However one of the bases of understanding such disparity is based on Weiner's (1979) attribution studies, which contends that the causal attributions toward success or failure are of great importance to understand achievement behaviour. To quote Weiner (1986:2), individuals are in "a constant pursuit of 'why?'" The "why" questions are often asked by individuals when they express causes or explanations behind theirs or others failure. For example, a parent may pose this question "why did my child fail in mathematics?" or a more well-known question "why does she or he succeed or fail in mathematics more than others?" In general, the responses of the "why" questions are in the form of causal explanations and give us an idea about reasons of events or actions (Weiner, 1986). Thus, attributions can be considered as the explanations and justifications individuals give for their successes and failures.

When applying attribution theory to an event such as why one failed in studying a subject, for example, Weiner (1992) suggests that there are three questions attribution theorists tend to ask. First, what are the perceived causes of this event or failure? The perceived causes can be, for example, inadequate effort, too difficult exams, or adoption of inappropriate learning strategies. Second, what information influenced this causal inference? The information can be that the observation of the pupils who put more effort into extracurricular activities easily fail in learning well, or the observation that pupils who do not pay attention to the teaching are likely to fail. Third, what are the consequences of the causal ascription? The consequences could be: deserved

punishment from the parents, re-sit of the examinations, or retake the subject for the second time and so on (Weiner,1986).

The theory suggests that, individuals have a need to either find or fabricate reasons for why a particular outcome occurs especially when the events are important or unexpected (Weiner, 1992). For example, a pupil may wonder why she or he did not get the good results after a lengthy examination preparation, or why administrators always put blame on teachers for the decline in academic performance at a particular school.

According to Weiner (1986; p22), one of the most important aspects of this attributional construct of ability was ‘the perceived causes of success and failure in achievement-related situations.’ However Weiner concluded that the numbers of potential causes of pupils’ academic performance were infinite. Nevertheless, to Weiner (1986), the attributions of ability and effort predominated when considering explanations of failure. The relative importance of each of the four major factors influencing achievement (effort, ability, task difficulty and luck) depended, to Weiner (1986), upon a particular situation. Success in a particular subject assignment would be followed by a greater belief that achievement goals would be met, while failure would lead to a decrease in the belief of future academic performance. However it must be noted that, the continuous inquiries during Weiners studies further confirmed that, most of these causal attributions (effort, ability, luck and task difficulty) were less important than the three main causal dimensions that determine event outcomes (Weiner 1986; 1992; 2000). These dimensions were referred to by Weiner (1986) as locus of control, stability and controllability, and were constant whatever the situation.

1.2.1 The first causal dimension: locus

Heider (1958) was the first to propose a systematic analysis of causal explanations success and failure. According to him, causal explanation depends on two sets of conditions, namely “factors within the person and factors within the environment” (internal and external). If an individual perceives that achievement comes from inside (locus of control), then there is a greater expectancy that the initial behaviour would be reinforced. For example, a pupil may say that she or he failed an important examination, because she or he did not study enough or because she or he was not gifted in that particular subject. On the other hand, she or he may say that the teacher

did not prepare the pupils for the examination properly or that the questions were too difficult, both of which are factors within the environment and thus external to the person. If the reinforcement was seen to be outside the individual's control, then there was less likelihood of that behaviour being followed in the future (Bar-Tal, 1978 & Weiner, 1992).

According to Weiner (1986), this internal-external dimension became very popular in psychology especially with the work of Rotter who labelled it locus of control (Rotter 1966 as quoted in Weiner 1986), while studying causal beliefs he suggested that people differed in the way they ascribed and reacted to events regarded as rewards or reinforcements. He claimed that an individual might perceive these rewards to follow from his or her own behaviour (belief in internal control), while another individual might feel that the reward depended on factors outside him or herself and did not follow from the way she or he acted (belief in external control). People could be thus divided into internals and externals according to where they perceived the locus of control to be. However to Weiner, the distinction between external and internal attributions did not provide sufficient information to explain outcomes, especially given that the goal for attribution theorists is to decide the causes of events and thus predict behaviour in various achievement situations (Weiner, 1986).

1.2.2 The second causal dimension: stability

Weiner (1986) claimed that a stability dimension was required to describe causal ascriptions in addition to the well established locus of control (internal-external dimension). He argued that within the internal causes of behaviour, some causes were stable while others fluctuated. For example, a pupil may explain his/her success in mathematics examination with his/ her ability in mathematics, which can be considered to be fairly stable. On the other hand, he/she can explain his/her success with effort, which can vary from time to time and is thus unstable. The same stable-unstable dimension also applies to external causes. For instance, if the pupil claims that she succeeded in social and development studies examination because the questions were easy, the cause of success is considered stable. However, if the cause of success is said to be lucky guessing, the cause is considered unstable (Abodunrin, 1988) as shown in Table 1.3 below.

Table 3: Locus and Stability classification scheme for perceived causality

	INTERNAL	EXTERNAL
STABLE	ability	Task difficulty
UNSTABLE	effort	lucky

(Adopted from Weiner 1986:46)

1.2.3 The third causal dimension: controllability

According to Weiner (1986) a third causal dimension was first suggested by Rosenbaum (1972 as quoted in Weiner, 1986), who noted that, for example, mood, fatigue and temporary effort were all internal and unstable causes; however, temporary effort was different in that it could be controlled by an individual. Weiner (1979 as quoted in Weiner, 1986) labelled this third dimension as controllability. Consequently, what Rotter (1966) had called locus of control was now seen more clearly as two separate dimensions: “*locus of causality and controllability*” (Weiner 1986; p48). With three causal dimensions, the classification of causal explanations became more specific and reached the form in which it is known today. For example, if a pupil claims she or he failed examinations because she or he is not gifted in the particular subject, the cause can be characterized as internal, stable and uncontrollable. On the other hand, if she or he says the failure was due to not studying for this particular exam, the cause will be characterized as internal, unstable and controllable. When using the three dimensions refer to eight types of possible causal explanations indicated in table 1.3 below.

Table 4: Dimensional Classification Scheme for Causal Attributions

Attribution Dimension	Locus	Stability	Controllability
Ability	Internal	Stable	Uncontrollable
Effort	Internal	Unstable	Controllable
Strategy	Internal	Unstable	Controllable
Interest	Internal	Unstable	Controllable
Task difficulty	External	Stable	Uncontrollable
Luck	External	Unstable	Uncontrollable
Family influence	External	Stable	Uncontrollable
Teacher influence	External	Stable	Uncontrollable

From Vispoel & Austin (1995) based on Weiner (1979)

In causal attribution, the three dimensions form the basis that is used to classify the specific causes of any failure. It is important to find the causes that pupils ascribe to an achievement outcome, such as passing or failing mathematics subject. The main reason is that causes play a major role in moulding future expectancies and emotions of pupils that is their motivational states. The latter, in turn, determine pupils' achievement strivings (Weiner 1997, 2000, 2006). It is therefore crucial in this context to consider teachers' and pupils' causal attributions with specific regard to pupil achievement in mathematics. It is possible that their beliefs about ability will affect their perceptions of pupil achievement and may even influence the way in which teachers teach.

Much research has been done on the causal attributions toward failure within the scope of academic achievements outside the country. These studies provide evidence that pupils' performance is significantly influenced by what pupils attribute their performance to (Nenty,

2010). As yet, it appears no studies have been conducted in Zambia that support or deny the claims in literature. Furthermore, research targeted at junior secondary pupils' mathematics public examinations in terms of attribution of failure by teachers and pupils has been so far sporadic even in other African countries. In order to bring positive changes in any education system, it is also necessary to know attribution patterns of its pupils and teachers. Based on the causal attributions, the present research picks up the challenge and seeks to provide empirical evidence to this pressing issue especially by obtaining information from nature subjects on causal attributions of failure in public mathematics examinations amongst grade nine secondary school pupils in Nakonde district Zambia.

1.3 Statement of the problem

High failure rate in mathematics compared to other subjects have been a great source of concern by a number of educators in Zambia for years now (ECZ, 2013). A number of factors have been cited as being responsible for the poor performance: self-concept and psycho-social adjustment of pupils are some of them (Munsaka 2000 & Kasonde 2007). Despite all these studies, achievement in mathematics continues to be low (ECZ, 2013; Meshack & Mark, 2010). However, studies done outside Zambia on the causes of failure indicate that causality for failure affect education outcome negatively (Mkumbo & Amani 2012, Ojo Wale 2011, Tachie & Chireshe 2013, Weiner, 1979). Although the attributions are viewed as the cause, the notion of teacher-pupils' attribution of educational outcome has seen endless heated debate in Zambian schools and one of the most frustrating circumstances behind this debate is that, sometimes, neither pupils nor teachers take on the blame. For instance teachers and their pupils in this case do not exhibit the same explanation in attributing failure upon publication of grade nine public examinations. What is not known in Zambia is whether the causal attributions of failure in academic performance and its effect could negatively affect educational outcomes particularly in mathematics examinations. Hence the need for this study taking grade nine mathematics repeaters as a case in point.

1.4 Purpose of the study

The purpose of this study is to determine factors influencing teachers' and pupils' causal attributions of failure in grade nine mathematics public examinations.

1.5 Specific objectives of the study:

- (i) To ascertain pupils' causal attributions to their failure in grade nine public mathematics examinations.
- (ii) To establish teachers' causal attributions on the failure of grade nine pupils in public mathematics examinations.
- (iii) To determine how attribution of failure affects future performance in public grade nine mathematics examinations.

1.6 Research questions

- (i) What do pupils attribute their failure to in public grade nine mathematics examinations?
- (ii) What causes do teachers' attribute the failure of grade nine pupils to, in public grade nine mathematics examinations?
- (iii) How does the nature of attribution of failure affect future performance in public grade nine mathematics examinations?

1.7 Significance of the study

According to Kasonde Ng'andu (2013) significance of the study is the section in a research that shows the relevance and implications of the study for researchers, practitioners and policy makers in the country. Hence, at the time when there is a knowledge gap on the causal attributions, it is significant to determine teachers' and pupils' causal attributions of failure in grade nine mathematics examinations as the study may generate information that may be useful to educators who are concerned about the rising rate of academic failures in mathematics. Moreover, the results of the study might be fruitful to motivate the pupils while developing high attributions, thereby improving their academic performance.

It is also necessary to understand how pupils perceive and react to academic failures before one can formulate appropriate policies, intervention programmes and design relevant remedial

counselling services which could aid in remediating the problem of academic failure in mathematics amongst pupils. In this regard it is assumed that based on the results of the findings of the study, stakeholders in the education sector will have to look beyond cognitive structures for answers to the decline in mathematics performance.

Thus, through this study, which is a veritable means of increasing educators' knowledge and understanding of teacher and pupil causal attributions, pupils' achievement can be positively influenced, ultimately resulting in a more successful teaching-learning outcome in the school. It may also trigger further research in trying to come up with effective strategies to foster intrinsic motivation among pupils.

1.8 Theoretical frame work

This study was guided by the attribution theory which was coined by Bernard Weiner. The attribution of failure in learning is an aspect of learning in the constructivist perspective. According to Weiner (1992) the theory deals with the ways through which individuals shape their own views about the world around them. The researcher singled out the attribution theory as an area that could be explored to reach a better understanding of pupils' and teachers' regarding their attributions towards educational outcomes. Hence the theory in this study seeks to explain how individuals evaluate their levels of academic failure. According to Hogg and Vaughan (2005) casual attribution of failure in an academic task denotes ones' acceptance or denial of responsibility for their performance in the academic task. In this regard, pupils are considered to be responsible for their learning.

1.9 Study Sites

The study was conducted in the following six selected junior secondary schools in Nakonde district of Muchinga province, Zambia: Nakonde secondary school, Ikawa secondary school, Donald Siwale secondary school, katozi secondary school, Waitwika secondary school and Chilolwa secondary school.

1.10 Limitation of the study:

As earlier stated, this study was conducted in six secondary schools in Nakonde District. The study sampled only 150 respondents from the six selected secondary schools in the district. The number of participants in the study was small compared to the target population of the district and the province at large. The implication is that caution should be exercised when generalising the results to other junior secondary schools in the country.

1.11 Delimitation of the study:

The study's focus was narrowed in scope to six secondary schools of which only grade eight and nine mathematics repeaters were sampled in Nakonde District. The repeaters were sampled because the study focused on those pupils who failed grade nine final mathematics examinations and have been made to repeat either in grade nine or eight.

1.12 Operational definition of terms

Ability: The innate component of a person, which can be dormant, passive or active.

Attribution: The ascribing of something to somebody or something.

Attribution theory: A perspective on motivation that assumes that people seek to understand why they succeed or fail (Weiner, 1979).

Blame: Holding someone or something else for any consequence of behaviour (Ormrod, 1998).

Causal attribution: It is the perceived reasons given by an individual to explain his/her success and failure (Weiner, 1986).

Educators: It refers to professional teachers; head teachers, deputy head, Guidance and counseling teachers (GCT)

Effort: An entity (e.g. an action, event, occurrence) that triggers the innate component of a person. On the other hand, according to the attribution theorists, it is affected by an individual's past achievement history, and is thus under the control of the individual (Weiner, 1979).

Extrinsic motivation: Motivation promoted by factors external to the individual and unrelated to the task being performed. It drives an individual to do things for tangible rewards or pressures, rather than for the fun of it (Munsaka & Matafwali, 2013).

Learned helplessness: A general belief that one is incapable of accomplishing tasks and has little or no control of the environment

Locus of Control: It is perceived experiences that are either being within the individuals' internal control or under the control of forces outside that person (Mkumbo & Amani, 2012).

Innate talent: It is executing an intended action better than most people would if they performed that action at the same level of dedication as you.

Intrinsic motivation: It refers to the motivation that is driven by an interest or enjoyment in the task itself, and exists within the individual rather than relying on external rewards (Munsaka & Matafwali, 2013).

Odds: These are bad omens (bad luck) believed to bring misfortunes to individuals or pupils.

Perception: This is insight into something or the faculty of perceiving or the result of perception.

Self efficacy: One's belief that one is capable of executing certain behaviors or reaching certain goals (Ormrod, 1998).

1.13 Organisation of the Study

The study is organised into six chapters. The first chapter comprises the introduction. Chapter two consists of the literature review, while chapter three contains methodology. Chapter four presents the research findings. Chapter five consists of discussion of findings and chapter six contains conclusion and recommendations. It ends with references and appendices.

CHAPTER TWO

LITERATURE REVIEW

2.0 Overview

The chapter focuses on the review of available researched information in the past relevant to the current study. The need for further research arises due to gaps revealed in the previous studies. The study examines the causal attribution of failure in public grade nine mathematics examinations. The following themes derived from objectives were used in the presentation of literature review; ascertain pupils' causal attributions to their failure in grade nine public mathematics examinations, establish teachers' causal attributions to the failure of their grade nine pupils in public mathematics examinations. The aforementioned themes also explore the extent to which attribution behaviour originates inside or outside the individual and the extent to which it is controlled. It further reviews how attributions of failure affects future performance in public grade nine mathematics examinations and ends with a summary.

2.1 Pupils' attributions to their failure in public grade nine mathematics examinations

This sub-section reviews the external and internal attributions of pupils' to their failure in public grade nine mathematics examinations. Gordon and Graham (2006) postulated that external attribution refers to understanding an event or behaviour as being caused by the situation that the individual is in. For example, if Chitekwe's car tire is punctured, he may attribute that to a hole in the road, by making attributions to the poor condition of the highway, he can make sense of the event without any discomfort that it may in reality have been the result of he's bad driving. According to Gordon and Graham (2006) internal attributions is the act of placing blame on some type of factors or criteria that could be controlled by an individual for the cause of a certain event. Basically it infers that an event or a persons' behavior is due to personal factors such as traits, abilities, or feelings.

Pupils explain the educational outcomes through reference to a wide variety of causal factors. Although evidence indicates that four of Weiner's classic causes (ability, effort, luck and task difficulty) are among the most frequently offered explanations of causal attributions in academic performance (Bempechat, 1999; Boruchovitch, 2004; Hunter & Barker 1987; Lei, 2009; Weiner

2008, Zheng, 2012) additional factors are also sometimes suggested as causes of attribution of failure. Furthermore, it has been argued that Weiner's four attributions are limiting in that they fail to take into consideration the complexities and variations on the causal attributions of all those involved in the teaching and learning processes (Bempechat, 1999). In amplifying the foursome causes Salami (1997; p2) showed that:

Individuals view the causes of their failures as mainly due to ability, efforts, the difficulty of the task or good/bad luck. Ability and efforts were considered as internal causes because they originate within the person while task difficulty and luck were external because they originate outside the person.

Similarly McLeod (1995:p372) pointed out that "attribution could be formed by three major factors: (1) the pupils' past performance, (2) the pupils' characteristic and (3) the effect of the teacher being an actor rather than an observer in teacher-pupil interaction." Further research reported additional causes such as learning strategies, inadequate training, low self-esteem and motivation. Lack of knowledge, the increasing age of teachers, teacher being clever, liking the content, fatigue, health, and teaching methods have been some of the reasons proffered for the attribution teachers and pupils make in academic circles (Alderman, 2008).

It is evident that there are many more attributions to the causes of failures which need to be established and documented (Weiner, 2006). For example, when Forsyth and McMillan (1981) carried out a study in Colombia to investigate the causal attributions of pupils regarding their outcomes on a test, they identified various causes which included luck, support from friends, classroom atmosphere, knowledge, personal problems, pupil-teachers personality and study habits. Conversely a number of studies have found that there are various reasons which pupils give for failing mathematics. Among other causes include attitude, motivation, negative emotions, anxiety, expectations, deteriorating performance, teacher competence and learning environment (Abodunrin, 1989, Boruchovitch, 2004, Williams & Burden, 1999).

In the study by Williams, Burden, Poulet and Maun, (2004) in United Kingdom, learners' needs, motivation and self-awareness of pupils were explored by focusing on their perceptions of their successes and failures in foreign language teaching and learning. The findings indicated a clear link between control of their learning and success. The effect of disruptive behaviour and peer

pressures, for instance, few of the attributions mentioned by the pupils relate to the notion of reward, or the value of learning a foreign language. In this regard, it is vital to assume that causal attribution which has been studied in various countries among pupils of different levels for measuring their causal attributions of failures has a rich history. It started with four prominent causes and it is still a growing empirical construct for researchers (Boruchovitch, 2004; Tachie & Chireshe 2013; Lei, 2009; Nenty, 2010; Zheng 2012). For Weiner (2008), attribution inquiry is still strong enough to attract attention of the researchers as pupils still react when they hear about their grades obtained in an examination.

Research has shown that certain methods that researchers employ when measuring pupils attributions yield results which seems to be incomplete, in most cases pupils are not given chance to explain in detail why they performed in such a way (Williams & Burden, 1999) for example, on pupils' attributions of failure that was conducted by Bar-Tal and Darom (1979), the researchers selected 236 fifth and sixth grade pupils out of which 103 were boys and 133 were girls. Data was collected using four point scales ranging from little influence to great influence. These pupils attributed their failure on a test given in their classroom to eight different forced choice causes. The results of the study indicated that the pupils tended to attribute failure mainly to internal causes.

One could argue that, the above findings were incomplete, as the methodology used did not allow the respondent to air out their experiences. For instance, in the kinds of experiments described above, the research participants had to cope with the limited information of an outcome provided by the experimenter without the possibility of negotiating meaning. Further, they were forced to choose their answers from the alternatives provided by the experimenter and could not come up with their own explanations nor decide whether an explanation was necessary at all. As Heikkinen (1999:p17) points out, “the kinds of experiments could only confirm the preformed ideas of the pupils.” It does not produce new ones hence other methods needs to be explored. It is in this regard that the current study adopted both numerical (forced choice) and narrative approaches in attempt to resolve the contradictions on approaches.

Savas and Ilyas (2010) investigated causal attributions of success and failure in mathematics instructions of pupils in Turkish high schools. The researchers administered a questionnaire

which composed a 5-point Likert type questions to 96 pupils who were enrolled in some public schools of Istanbul. The findings revealed that pupils' causal attributions were based on situations used in the teaching methods that their teachers were using in mathematics, insufficiency of mathematical textbooks to meet the pupils' needs and having the belief that mathematics is difficult due to pupils' previous experiences.

Studies conducted by Williams and Burden, (1999) revealed that the way teachers interact with the pupils in the classrooms, affect the pupils' attitudes of developing their notions of themselves as they progress in learning as well as in examinations. Similarly, in his studies on language learning achievement, Yang (2012) reported that the low achievers attributed most of their failure to poor learning environment and the teacher. Attributing pupils failure in mathematics to lack of skill has been alluded to by Ojose (2011) who conducted a study in Nigeria on causal attributions and affective reaction to academic failure and found that their teachers who were supposed to guide did not know the subject. The pupils thus believed they failed the subject because there was no one capable to teach them, the pupils also believed that their teachers could not adequately discuss mathematical problems with them. It may be interesting to note however, that pupils often fail mathematics even if they are taught by highly qualified teachers, a cause which needs attention to establish the facts (Nenty, 2010).

In addition, a similar study which was conducted by Nyaumwe, Bappoo, Buzuzi Kasiyandima (2004) in Zimbabwe, reported that, some of the methods teachers used did not help pupils develop conceptual understanding of mathematics, hence the high failure rate in the subject. In this regard pupils condemned teachers' way of approaching the subject they attributed their failure to inappropriate methods employed by the teachers during the teaching and learning situations.

Similarly, a study conducted by Tomomi Saeki (2002) on Japaneses' pupils who were in 5th and 8th grades. The researcher used a questionnaire survey to explore the relationship between pupils' attribution to their perceived mathematics performance and their affective attitudes towards mathematics learning as promoted by the different teaching methods, indicated that 5th graders and 8th graders overall gave effort-based attributions in the case of failure. While for 5th graders, ability was regarded as being as important as effort, in attributing failure in mathematics

learning. Pupils' who attributed their success in mathematics learning indicated effort, support at school and home, preferred teacher explanation and reading a textbook as learning strategies, while those who attributed to their ability preferred individual work. In Tomomi's study it was seen that the relationships between pupils' effort and ability based attributions to failure and their preference for different teaching methods were not coming out comprehensively. Basing on the aforementioned literature, it could be suggested that utilizing various teaching methods in mathematics classes would seem to be beneficial to pupils who have different attribution styles as pupils differ in their needs.

In terms of teacher qualifications, Agyeman (1993) as cited in Tella (2008) state that teachers who were professionally under-qualified in mathematics had a negative influence on the teaching and learning of the subject which later adversely affect performance in examinations. However, it could be argued that, teachers with higher academic qualification have more knowledge of the subject matter and in terms of high quality of teaching skills (feedback, questioning, explaining things clearly to pupils). According to Nyaumwe et al (2004) a teacher with higher qualification in a given subject is most likely to ask higher level cognitively based questions; thus helping the pupils to learn and perform better.

On the characteristics of teachers, Abodunrin (1989) indicated that, pupils attributed their failure to teachers' behaviour such as absenteeism from work, insulting and not motivating pupils. Some teachers were alleged to come to school drunk and did not concentrate in teaching the subject. Some teachers were also alleged to 'de-motivate' pupils in class even if they gave the right answers during class discussions. Equally, in his study, Abdelaziz Zohri (2011) investigated Moroccan university learners' perceptions of failure. The results showed that Moroccan learners attributed their failure to teachers' bad attitude. However it was revealed that factors related to social problems, lack of teachers' help and ability were not important. Regarding teachers' characteristic, Kolenski (2009) argued that pupils' attributions may as the result of a strong dislike for a certain subject whose teacher habitually ridicules him or her in front of his or her peers. However, caution must be exercised when submitting and taking on the attributions by educators and pupils, as at times the dislike could be due to the one making attributions who may be a problem.

In another study that was done by Nenty(2010) on analysis of some factors that influence causal attributions of mathematics performance among secondary school students in Lesotho have indicated that pupil who preferred engineering and medicine did not attribute their performance in mathematics to luck. While those who preferred law attributed their low performance to task difficulty. In addition causal attributions of performance in mathematics among Lesotho secondary school pupils depended significantly on: (a) their gender; (b) the person with whom they are living; (c) the proprietor of their school; (e) the rural/urban location of the school they are attending and (f) the high/lowland location of the school they are attending.

Mathematics is not really a necessarily required subject for law and force-related primary occupations. While this may likely explain the observed attributional trend, it is interesting to note that pupils did not like occupations such as science and mathematics related occupations and this contributed much for the loss of interest in the subject. Thus, those who preferred occupation like law tended to attribute their performance to external but stable factors a situation which could prevail even among Zambia grade nine pupils.

A study conducted by Yang (2012) in China indicated that pupils attributed their positive outcome more to ability, effort and luck than they did their negative outcomes. Similarly, Cao and Bishop (2001) conducted a study in Australian and established that pupils attributed their failure in mathematics to task difficulty which forced pupils not to put effort because of the belief that the subject was difficult. Similarly, Ojo and Wale (2011) and Mkumbo and Amani (2012), in their studies confirmed that pupils attributed their failure in mathematics that it was a challenging subject, teachers were not serious. Equally, in his study on "causal attributions and affective reactions to academic performance of Chinese students in Hong Kong" Pan (1993) found that in an actual examination of mathematics, individual students had different perceptions of the cause of their performance. High achievers attributed their causes of success to effort, ability, intelligence, while low achievers attributed their causes of failure to ability and difficult examination.

In another study involving 110 Brazilian students, Boruchovitch (2004) investigated how students attribute their performance in Mathematics. He found that students who performed poorly attributed their failure to external factors, such as examination difficulty and bad luck,

Boruchovitch concluded that external attributions were made when pupils explain their failure, and they seldom attributed internally when explaining their failure. In addition, a study conducted by Tachie and Chireshe (2013) indicated that students attributed their failure to the belief that mathematics is by nature difficult and there was nothing they could do to pass. Furthermore, Ipaye (1981) and Igbalajobi (1985) as cited in Salami, (1997) revealed that pupils in Nigerians had been found to attribute their failures to external factors such as witchcraft, devils, and bad luck while they attributed their success to internal factors such as ability, hard work, good memory and devotion to duties

Asmus (1985) conducted a study with 143 undergraduate and graduate students enrolled in music education or music therapy program. The study aimed at determining whether there was a relationship between the students' perceived causes of failure when talking about themselves and their perceived causes of failure when talking about others. Results showed that failure was attributed to task difficulty when pupils were talking about themselves and to effort when talking about others. In this study the two variables (task difficulties, effort) were foreseen as the cause of their attributions.

In another study, Asmus (1986) examined the views of sixth-grade general maths pupils to gain a better understanding of why pupils fail in maths. Findings revealed that the majority of pupils selected the internal-stable attribution of ability and the internal-unstable attribution of effort as the major causes of their failures in maths. Asmus (1986) expanded the previous study by adding junior or high school pupils, greatly increasing the sample size in mathematic subject. Pupils were asked to give their free responses as to why some pupils were successful in mathematics and others were unsuccessful. The major findings of the study were that 80% of the reasons cited had to do with effort and ability. The successful pupils further indicated that, the effort exhibited in their studies made them possible to perform well while those who failed indicated lack of motivation on their part and the teachers.

Sucuoglu Hale (2014) conducted a study among Turkish University Students, the study aimed at assessing the internal reliability of the scale and to determine the sub-dimension of the scale by performing structural equation modeling. In this study, it is evidence that students tended to attribute their failure generally to factors within themselves. Similarly Ozmentes (2012) also got

the similar results in his study on quantitative analysis from the perspective attributions theory in the pupils in elementary music education, pupils in music subject attributed failure to lack of ability, negative behaviour of their classmate and not studying the subject.

In another dimension in studies conducted by, Ojo and Wale (2011) and Mkumbo and Amani (2012) indicated that, pupils attributed failure to internal factors by blaming themselves for the failure. The researchers further echoed pupil's ascriptions by indicating that negative attitudes towards the subjects, low intrinsic motivation level towards the subject, laziness and the negative attitude towards attending lessons adversely affect pupils' academic performance. In the same vein, Manzoni (1995) investigated the pupils attributes of their academic failure, concluded that giving up, inadequate learning and laziness were considered by pupils as a main points for their being unsuccessful. The majority of items relating to unsuccessful pupils spoke of influence that were coming from inner factors, that is, personal characteristics of pupils.

Komolafe and yara (2010) contradicts the aforementioned results and argued that it is the common phenomenon to hear pupils say my teacher gave me 31% or 28% instead of saying I failed the subject suggesting that the teacher was just distributing scores and he or she was unfair in his or her distribution. In their studies it was revealed that pupils tend to attribute failure to external causes but success to themselves. However, on a contrary, Gobel and Mori, (2007) conducted a study with Japanese university students on exploring students' attributional beliefs in language learning. The findings uncovered a connection between internal attributes and attributions for failure. In this study it was found that pupils had a tendency to blame oneself for failures (rather than blame external forces) contradicting Weiner's concept of a self-enhancement or self-protective bias, in which one blames external forces for failure. Gobel and Mori further established that the study did not show the self-enhancement or self-protective tendencies that are widely recognized in cognitive psychology.

The self-enhancement tendency refers to individuals' propensity for giving them-selves credit when they succeed, and the self-protective tendency denotes their propensity for blaming others when they fail. Self-enhancement involves deceiving oneself about the nature and cause of an experience (Jordan & Audia, 2012). In Zambia they areno evidence on studies backing self

enhancement hence, it is vital that self enhancing is also investigated as research has shown that self-enhancing could hinder the learning process.

On the aspects of motivation, Ainol and Isarji's study (2009) found extrinsic motivation to be the dominating factor in their investigation on learning, they reported that pupil were extrinsically motivated to perform well on academic tasks for extrinsic reasons such as for their future career, to be more knowledgeable and to fulfill examination requirements. In this case, it must be noted that effort is driven by some sort of external forces, for example, those pupils who were not extrinsically motivated for better careers such as mathematics related careers were performing badly in mathematics.

Similarly, in a study that aimed at separating students with high causal attributions and low causal attributions of mainstream and religious sectors and to find out the effect of these causal attributions on students' subsequent academic achievement in Rawalpindi and Islamabad districts of Pakistan, Batool (2011) concluded that there was significant difference between the academic achievement of intrinsically motivated pupils and that of extrinsically motivated. The researcher indicated that intrinsically ones had high causal attributions and tended to show signs of hard working while the extrinsically ones had low causal attributions and tended to lower hard work upon noticing that the reward has been withdrawn or it would not come forth. This portrays that any nature of motivation influence pupils to form ascriptions. Pupils will be more persistent at academic tasks if they attribute their academic successes to either internal, unstable, factors over which they have control (e.g. effort) or internal, stable factors over which they have little control but which may sometimes be disrupted by other factors (e.g. ability disrupted by occasional bad luck), if motivation is altered to suit pupils beliefs in mathematics, causal attribution is altered as well (Batool, 2011).

Basically, most motivation theorists assume that motivation is involved in the performance of learned responses; that is, a learned behavior will not occur unless it is energized. The sources of motivation can be extrinsic (outside the person) or intrinsic (internal to the person) (Munsaka & Matafwali, 2013; Munsaka, 2011; Ormrod, 1998). The basic principle of attribution theory that applies to motivation is that a person's own perceptions or attributions for failure determine the amount of effort the person will expend on that activity in the future.

In support of the above mentioned, Weiner (2005) describes that in achievement contexts the process of motivation begins with the exam outcome coupled with the type of motivation it involved (intrinsic/extrinsic). If outcome is positive, a pupil becomes happy his or her motivation towards educational tasks will be high and if outcome is negative then his or her frustration and sadness leads him or her to negative causal ascriptions. An expected outcome might be not only good or bad, but involve pride or shame in more specific terms which induces motivation, For example, if a pupil does well in maths exams, he or she should expect to feel proud and attribute his or her performance to effort and will be motivated to continue with the same effort. If he blunders and fails, luck external factors may be ascribed. The pupil might expect to feel shame and at times can even lead him or her to withdraw from studying or commit unpleasant acts such as suicide (Bempechat, 1999).

A number of factors have been cited as being responsible for the poor performance in mathematics, pupils' attitude is one of the variable that influence pupils to attribute failure (Adegboye 1998). Salami (1997) conducted a study on the influence of causal attributions, level of academic performance, and reactions to success and failure in sciencesubjects. The researcher, reported that, there was significant relationship between pupil's attitudes, the attribution he or she makes and school academic performance. He therefore argued that if pupils' attitude towards a subject was not improved, the performance in the subject would not improve and thus the pupil would attribute such performance to various variables such as internal causes (effort and ability) and external causes such as teachers absenteeism, difficulty subjects, teachers been incompetence in mathematics.

In essence, a pupils' attitude influences the pupils' ascription towards the subject, affects what he or she learns, what he or she remembers and what he or she does and consequently one's attributions would influence his educational achievement (Salami,1997). For example, Lampert (1990) argued that the kind of beliefs that a pupil holds about mathematics, affects the way he or she learns it. Brown and Borko (1992) also argued that the kind of attitude and conception that the individual pupil has towards mathematics influences his or her learning practices.

2.2 Teachers' attributions to the failure of pupils in public grade nine mathematics examinations

This sub-section reviews the external and internal attributions of teachers' to the failure of their pupils in public grade nine mathematics examinations. It has been reviewed under the following subheadings, taking on blame; negative peer influence; gender and the attributions caused by the influence of school type.

It is argued that teachers' causal attributions to their pupils' academic performance may lead to different teacher behaviours. A teacher's beliefs about problem causality and controllability of the pupil may be linked to the teachers' use of criticism and reward and is likely to influence the teachers' sense of control of the situation (Peterson & Barger, 1985). For example, Tachie and Chireshe (2013) conducted a study on High Failure Rate in Mathematics Examinations in Rural Senior Secondary Schools in Mthatha District, Eastern Cape. They found that teachers attributed pupils' failure in mathematics as being influenced by their teaching particularly, when they observed a pupil who had high ability suddenly started having low grades. Teachers identified the model of teaching strategies employed as one of the causes for such failure. It was also found that high failure in mathematics was caused by over enrolment and lack of mathematics textbooks. In addition, teachers indicated that their personalities that were exhibited towards their pupils inferred a negative effect with regard to pupils' performance in mathematics. According to Psacharopolous and Woodhall (1985) textbooks are a major input for performance in examinations. Basing on the above, one can indicate that the availability and quality of textbooks in a secondary school contributes greatly to the improvement of educational outcome in schools.

A study that was conducted in Tanzania on teachers' causal attributions of academic underachievement in public secondary schools by Lyakurwa (2012) found that teachers denied being responsible for massive pupils failure, they attributed failure to factors external to them, these factors included issues based on academic qualifications, it was found that teachers with bachelor's degree were more effective than those without bachelor's degree. Furthermore Lyakurwa indicated that school authorities blamed the government and pupils themselves for massive failure, this confrontation prevail also in Zambia education system which requires intensive research (MESVTEE, 2011).

In a similar study conducted by Linda (2013) on factors affecting low academic achievement of pupils in KempMethodist junior high school in Aburi, Eastern region of Ghana, it was found that teachers attributed school environment, parents and the pupils as primarily responsible for the low academic achievement of the pupils. The school environmental factors identified include limited number of teachers with high academic qualification, inadequate teaching and learning materials, and misuse of contact hours with pupils. The teacher factors that were found to contribute to the low academic performance were incidences of lateness to school and absenteeism, inability to complete the syllabi and inadequate homework assigned to pupils. The pupil characteristics found significant were incidences of lateness to school and absenteeism, lack of assistance with studies at home and use of local language in the classroom. Indeed if constant use of a language which is not used as the medium of instruction in class, may negatively affect the pupils, as understanding of the learning concept would not be grasped well.

2.2.1 Taking on a blame as a causal attribution

In trying to establish reasons, teachers make attributions that are either ego-enhancing or counter defence. According to Peterson and Barger (1985) ego-enhancing attributions, lead teachers to attribute their pupils' successful performance to themselves and a pupils' failure to factors other than themselves. Thus, teachers enhance their egos by taking credit for their pupils' success while blaming their pupils for their failure. In contrast, teachers who make counter-defensive attributions accept responsibility for pupils' failures and give credit to the pupils themselves for successes.

In one study on the Effects of students' performances on teachers' and observers' attributions of causality, teachers took the credit for pupil success but attributed failure to the pupils (Beckman, 1973) while another study that was conducted in Pakistan on causal attribution beliefs among school pupils indicated that teachers assumed responsibility for pupils failure, they indicated that pupils failed because of their lack of commitment towards the subject. They also attributed success to the pupils indicating that success was due to pupil effort (Batool Sadia, Muhammad Imran Yousuf & Qaisara Parveen, (2012). The factor of ego-enhancing attributions lack credible backings in Zambian education system as it appears no study has been conducted to confirm or deny it.

Georgiou, et al (2002) examined the relationship between teacher attributions about pupils' failure and teacher behavior toward the failing pupils. The study revealed that teachers tended to behave in ways that indicated more pity and less anger when they attribute a pupils' low achievement to a pupils' low ability compared to pupils who have low achievement because of the pupils' low effort. The teachers; were less likely to accept some responsibility for pupils' failure if they perceived the pupil had given low effort. This suggests that the interpretation of what caused the failure (an event) is more important than the failure (event).

Equally, in one study, 184 teachers were asked for the possible causes for a classroom situation in which they were (a) particularly successful with a class of pupils and (b) particularly unsuccessful with a class of pupils (Guskey, 1982). Findings from the study indicated that when teachers were more successful with a class of pupils, they were more likely to attribute success to their own ability and effort than to the abilities or skills pupils might have had upon entering the class. When unsuccessful with the class, teachers placed greater emphasis on external attributions, primarily the difficulty of the task in teaching a particular group of pupils. When teachers made internal attributions for the lack of success with the class, they tended to emphasize insufficient effort on their part slightly more than they did deficient teaching abilities. According to Weiner (1972) an individual's actions following an incident are determined by the individual's attribution of the incident. In other words, how an individual responds to an event is influenced to a large degree by the causes the individual attributes to that event.

Ames (1975) investigated teacher 'responsibility and causality' (Ames, 1975; p 668) with a view to studying attributions for pupils outcomes. The researcher 'under conditions of failure found that teachers rated the pupils less motivated, the planning time less adequate, the outcome more dependent on luck, and the teaching more difficult' (p. 673). By and large, the major finding of this study suggested that teachers accepted responsibility for pupil failure and credited the pupil for their own academic success. However, while taking on the blame for pupils' failure, teachers ultimately recognised that the causes for this failure were internal to the pupils (laziness, poor preparation, lack of ability). In other words, Ames (1975) acknowledged some role for teachers in pupils failure but his findings also stressed that internal factors atypical to each pupil were also responsible which needed to be explored particularly basing on the Zambian context.

Wade and Moore (1993) conducted a study by sampling experienced teachers in Buckingham London. The researchers asked teachers the question, "Who is to blame for pupils' failure to learn mathematics?" That 65% of teachers blamed pupils' characteristics, and 32% of teachers blamed the home situation and this would probably be a surprise to those parents who only view schools as the major influence on learning. Only 3% of teachers blamed teachers or the school system for learning problems. In this regard the study concluded that teachers blamed the pupils by attributing their failure to external factors that is pupil's characteristics and home situation.

Therefore it can be argued that, the messages that teachers would convey in their classrooms, both explicitly and implicitly, about their beliefs towards successful learning would affect their pupils' attitudes of developing their notions of themselves as pupils as well as teachers progress in teaching, hence caution must be exercised by the educators. It must be noted that, teachers' perceptions of pupils' behaviors that promote the development of competence and self-worth would cause high attributional of positive educational outcome (Williams & Burden, 1999).

2.2.2 Negative peer influence as a causal attribution

Teacher also attributes pupils' failure to external causes such as pupils negative peer influence. In a study conducted by Reyan (2000), on peer influence as a context for the socialization of adolescents' motivation, engagement, and achievement in schools. It was found that peer groups were influential regarding changes in pupils' intrinsic value for school (i.e. liking and enjoying) as well as achievement (i.e. report card grades). It was also found that peer influence on athletics, dating, and sexual behaviour, as well as alcohol, drug, and tobacco use had been shown to be important for friendship choice at school. The study further revealed that associating with friends who had positive affect toward school, enhanced pupils' own satisfaction with school, whereas associating with friends who had a negative affect toward school decreased it.

The peer group is, however, influential regarding changes in pupils' utility value for school (i.e. importance and usefulness). In most instances, pupils whose friends engage in negative activities such as use of drugs, sneaking out of school and being absent from school chronically are likely to perform low in mathematics. For example, Cohen (1977) reported that the use of alcohol, drugs, and cigarettes by the pupils affected their academic outcomes. To this effect, one can state that pupils who care about learning are more likely to associate with peers who share interest in

academics than those who have less interest in learning. The personal value that an individual attaches to a characteristic also affects the individuals' response to change and that associating with friends, who have a negative affect toward school decreases pupils' own satisfaction with school. Risk taking behaviors such as substance abuse and sexual activities have been shown to negatively affect school performance in a negative way (Reyan, 2000). Teenagers learn about what is acceptable in their social group by "reading" their friends' reactions to how they act, what they wear, and what they say. The peer group gives this potent feedback by their words and actions, which either encourages or discourages certain behaviors and attitudes. In this regard what is not known is whether peer influence among pupils has a detriment effect on academic performance particularly in mathematics in Nakonde District, hence thoroughly study on this aspect is vital.

2.2.3 The attributions caused by the influence of school type

The study that was conducted by Cakmak (2009), on the perceptions of student teachers about the effects of class size, with regard to effective teaching process in Turkey revealed that there was a direct relationship between class size and motivation, teaching method used, classroom management and assessment according to student teachers' views, despite conducting it with a small sample size. The results showed that, teachers attributed pupils' poor performance to large class sizes of more than 40 pupils per class. Hence large class size negatively affected pupils' academic performance.

Based on the above findings, it can therefore be argued that class size is also an important determinant of academic performance and that schools with smaller class sizes do better academically than schools with larger class sizes. For example in a study conducted in Ghana, it was concluded that a class size of above 40 had negative effected pupils' achievement as pupils had differences in drive, interests, and abilities and that they also differed in health, personal and social adjustment, and creativity (Kraft 1994). Generally good teaching is best done in classes with smaller numbers that allow for personal attention In Cakmak and Kraft findings, one can argue to say, school's physical structure has influence on pupils' academic performance in mathematics. In this regard, the entire unattractive physical structure of the school building could demotivate learners to achieve less academically.

Similarly, McMillen (2004), found that the type of school, classified as public or private owned did not make any difference on pupils' academic performance. However, Ajayi and Muraina, (2011), found that school type make a difference in pupils' academic performance. In addition, Ma (2003) reiterated that the type of schools, (single sex or mixed, private or public) have effects on the academic performance of pupils in Mathematics.

In a study conducted by Crosnoe et al. (2004) on examination of race/ethnicity and organizational context of schools, found that school sector (public or private) and class size were the two important structural components of the school. It was also found that teachers attributed poor performance to government operated schools. Private schools tended to have both better educational outcome than public schools. The additional funding for private schools led to a better academic performance, because of more access to resources such as computers which had been shown to enhance academic achievement. Teachers' experience was another indicator which influenced pupils' academic performance.

Thus, from the above findings, it could be argued that, pupils who attend schools with a higher number of teachers with full proper credential tend to perform better and vice versa Lyakurwa (2012). Pupils' academic success is greatly influenced by the type of school they attend. School factors included school structure, school composition and school climate. The school that one attends is the institutional environment that sets the parameters of a pupils' learning experience for example, most private schools are faced with more public accountability for pupil academic performance.

2.3 Effects of attribution to failure on performance in mathematics

Attribution theory is probably the most influential contemporary theory with implications for academic motivation. It incorporates behavior modification in the sense that it emphasizes the idea that pupils are strongly motivated by the pleasant outcome of being able to feel good about themselves. It incorporates cognitive theory and self-efficacy theory in the sense that it emphasizes that pupils' current self-perceptions may strongly influence the ways in which they will attribute the failure of their current efforts and hence their future tendency to perform these same behaviors (Weiner, 1980, 1992).

The notion of learning suggests that pupils most able to learn from failed experiences will be those most likely to succeed in the future, as they take responsibility for an undesirable outcome, attempt to reflect on what went wrong, and test new approaches or alternative strategies for future performance. Yet empirical evidence for the effect of failure on pupils learning has been decidedly mixed. Some studies have found the beneficial role failure plays, findings are that pupils and teachers engage in greater information seeking, reflection, and improvement efforts following a failure or unexpected outcome (Ellis & Davidi, 2005). But others have found pupils and teachers reluctant or unable to learn from these failed experiences due to significant psychological and social barriers that lead to shame anger and low self esteem, reflecting on the lessons of a failure becomes null and void (Jordan & Audia, 2012).

These conflicting results entail that research to date may have overlooked a key factor underlying the process of learning from failure which requires a better understanding. Despite the prior contradiction research has also demonstrated that every failure is an individual's own attribution of responsibility – namely, taking personal ownership for the outcome or blaming it to external circumstances. Research has largely assumed that failure generally leads individuals to protect their image and distance themselves from negative performance outcomes by externally attributing their performance (Jordan & Audia, 2012).

According to Weiner's attribution theory, teachers' and pupils' causal attributions to failure have a significant impact on a number of variables. These variables include, but are not limited to self concept, self-esteem motivation, emotions, and academic achievement (Weiner, 1985, 1986). Based on this assumption, Weiner (1985, 1992) put forward a view that causal attributions in terms of preceding variable can be categorised into three attributional affects dimension namely; affects of locus, affects of stability and affects of controllability. These affects have detrimental effects on the academic performance of pupils if left unchecked for example, stability of an attribution is most strongly linked to expectancy for future success, while the locus of an attribution is linked to self-efficacy and esteem (Weiner, 1986). These expectancies and attributions of self, in turn, influence behavioral consequences such as persistence, choice, and engagement which in turn affect academic achievement of pupils not only in mathematics subjects but also in others (Weiner, 1986, 1992).

2.3.1 Effects due to locus of control

Causal attribution influence self- esteem or self worth (Weiner, 1986). For example in a study that was conducted by Batoool(2011) on attribution patterns among high and low attribution groups in Islamabad showed that, either an attribution of failure to external circumstances (bad luck or hindrance by others) or an attribution of failure to low ability (internal factor) may be debilitating. The least debilitating explanation for failure is to claim that insufficient effort has been expended. The most debilitating explanation for failure is internal, stable, uncontrollable factors (level of ability) as feelings of helplessness are likely to result. The author' further confirmed that, pupils who attributed success internally exhibited higher levels self-esteem than those who attributed success externally, while pupils who attributed failure internally exhibited lower levels of self-esteem than those who attribute failure externally.

Successful outcomes attributed to external causes such as luck or task ease are said to result in less self esteem or pride than success attributed to internal factors such as ability or effort (Weiner, 1986, 1992). Similarly failure attributed to the self result in lower self esteem than failure attributed to external sources. Basing on the findings it could be argued that attributing failure to lack of ability lowers self esteem more than failure attributed to bad luck.

Research has also shown that the locus of control is related to psychotic symptoms such as anxiety, depression, learned helplessness, and stress, among others (Seligman, 2006). The positive consequences of behavior attributed to internal causes enable an individual to feel proud and confident, however luck or success attributed to external factors such as assistance from others and chance do not result in a positive self-concept but results in debilitating situations. This assumption clearly indicates that, there is a relationship between internal and external locus of control and progress motivation. In Zambia, research on this important aspect of learning is non-existent.

Anderman and Midgley (1997) conducted a study in Columbia on how middle school pupils were motivated. In their studies, it was found that pupils who noted their poor performance was caused by factors out of their control were unlikely to hope for improvement. In contrast, pupils who attributed their poor performance to a lack of skills or poor study habits were more likely to try harder in the future. Pupils having an external locus of control are more likely to give up hope

and not try any harder in the face of failure, while those with an internal locus of control may try harder to improve in the face of failure. Hence it could be argued that if teachers could give their pupils a more hopeful attitude (develop an internal locus of control), their performance could improve.

In his findings, on the study of problem with external attributions, Butterfield (1996) indicated that there were, of course, also negative external attributions pupils made such as: 'I was just not born with any math intelligence,' 'mathematics test was too hard,' and 'the teacher is terrible he is hard on me.' The author attributed that such external attributions did not leave the pupil any recourse to perform better next time, if the external factors remain the same, the pupils' achievement level would also remain the same. In the case of external attributions, the pupils place the responsibility for his or her performance on someone or something other than his or her own efforts.

Bempechat, et al. (1996) in their study examined the effect of attributions on mathematics achievement. They found that ability attributions were significantly related to high achievement scores. On the same line, Boruchovitch (2004) conducted a study among low socio-economic Brazilian students with the aim of exploring the role of attributional perceptions of success and failure in their math scores. Having interviewed the students, the researchers indicated internal attributions as the most important variable which made the difference between success and failure. Pupils with internal attributions made effort that resulted in improvement hence mathematics teachers' needs to be mindful by ensuring that effort is inculcated in pupils.

Weiner (1979) revealed that, while luck and task difficulty are external attributions, ability and effort are internal factors, (locus of control) that aid individuals in making attributions, as Lei and Qin (2009:p 46) point out, *effort is very important in learning, without which pupils could achieve nothing*. The pupil who attributes failure to lack of effort, that is to their own actions and characteristics feels more responsible for their actions. Teachers, thus, should remind pupils of the value of effort. According to Hsieh (2004:p143) *when pupils feel that they are responsible for the outcome of their grades, they tend to become more involved and active in the learning process*. It is assumed that if the effort pupils put into their academic activities has little correlation with the outcome they receive, the pupils begin to feel that failure is not out of their

control and tends to attribute failure day in and out in that particular subject (Lei & Qin, 2009) for example, research by Zhao (1991) on the learning achievement of Chinese students has shown that feeling bad or worthless seems to increase anti-social and self-defeating behaviour.

Jamie (2011) conducted a study on the Influence of Teachers' Emotions on Students' Self-Concepts and Attributions at the University of Augsburg. The research emanated from lack of study on teachers' emotions and its effect. In that study it was revealed that, participants who were shown pity had a significantly lower self-concept than participants who were shown anger and that pupils in the pity condition believed the teachers attributed their failure to lack of ability as opposed to lack of effort. It was interesting however to notice that emotion, did not have an impact on the pupils' scores on the cognitive test. This study underscores the would-be relevance of teachers' emotions for their pupils.

In the quest for more knowledge, Weiner, Graham and Chandler (1982) conducted a research on 35 male and female psychology undergraduates' students to recall a critical incidence in their lives when the emotional of pity, anger and guilty were experienced. Results indicated that pity was strongly associated with uncontrollable and stable causes. Conversely, both anger and guilty were strongly associated with controllable causes. Further analysis reviewed that anger was strongly associated with an external source whereas guilty was associated with an internal source; a factor attributed to the self based on these data. Weiner et al (1982) concluded that the distinction between self blame and blaming of external sources determines whether the affective reaction is guilty or anger as earlier reviewed.

In terms of outcome associated with an internal locus of causality, the distinction between controllable and uncontrollable causes appears to determine whether a pupil experiences anger or pity. Controllability affects our reactions to and evaluations of others. Failure or help needed when attributed to controllable causes (lack of effort) usually elicit anger and negative evaluations such as persistence in academic task. However, when attributed to uncontrollable causes (physical handicap) failure usually elicits sympathy and leads to withdraw from academic task (Weiner, 1980).

When pupils consider their failing to be because of a lack of effort or a lack of ability, they experience several emotional reactions including guilt, and pity (Weiner, 1986). Guilt is

generated when someone fails due to an internal controllable cause (e.g. a lack of effort or negligence); and pity may be felt if failure is experienced and is perceived as deriving from an external, uncontrollable cause (Dweck, 1999). Unlike pupils who feel pity, guilty pupils, think of themselves as not intelligent and unable to work effectively just because they are having some trouble with a task. To this point, some pupils perceive that the situation is out of control and nothing can be done. As a result, they denigrate their abilities, decrease their expectations, lower their persistence, and blame their lack of intelligence for the failures (Dweck, 1999).

Banks and Woofson (2008) observed that pupils' perception of uncontrollability had the most damaging consequences in terms of academic performance. Banks and Woofson (2008) conducted a study among 53 British secondary school students investigating their perception of academic performance. The results indicated that pupils who perceived to be in control of their academic task performed better than those who attributed their performance to some uncontrollable factors.. In this case, failing and low performing pupils attributed their academic failure to external and uncontrollable factors. This pattern of attribution was also established in previous studies such as in Batool, et al (2012), Boruchovitch (2004) and Nenty (2010).

2.3.2 Attribution effects due to negative teachers' feedback

Teachers' behavior toward pupils is very important in the education process. Pupils may be at risk for self-blame and learned helplessness if a teacher's behaviour is negative towards the pupils who have been failing consistently. According to Purkey (1970) teacher feedback regarding a pupils' performance on school tasks might enhance or demoralize the pupils' self-concept. If the feedback is perceived to be positive by pupils, their self-concept could be enhanced and they will feel encouraged to do better in future. However, if the feedback that focused on ability is conveyed when pupils failed, pupils may assumed that they have low ability and feel discouraged from trying again and are less reluctant to attempt again. Boggiano and Katz (1991) maintain that such feedback may lead to negative self-cognitions and a "helpless" response pattern that may have adverse and long-lasting effects on achievement level.

A study that was conducted by Foote (1999) on attribution feedback in the elementary Classroom found that the most effective types of feedback for pupils' motivation were positive ability feedback and negative effort feedback. Foote found that positive feedback from success that

focused on ability built pupils' self-efficacy and motivation while negative feedback from poor performance that focused on effort did not diminish the pupils' self-efficacy or motivation. For this reason, it is important that teacher feedback focuses on effort and effective strategy use because these are within the control of the pupils and have been shown to be effective in enhancing achievement (Foote, 1999).

Much research has shown that teachers' feedback to different ability groups in the classroom tend to communicate their negative and positive expectations of pupils. For example the study that was conducted by Boggiano and Katz (1991) found that teachers respond more favorably and provide more praises to pupils who perform well academically. However, a study conducted by Alves and Gottlieb (1986) on teacher interactions with mainstreamed handicapped students and their non handicapped peers for low achievers in America, found that teachers who provide less feedback provide corrective feedback which consist of more non-supportive verbal or negative non-verbal behaviour give more praises for easy tasks and provide less credit for success.

Further, a study conducted by Ames (1975) on Achievement attributions and self-instructions under competitive and individualistic goal structures revealed that teachers' negative feedback tends to convey attributions of low ability to the low achievers. The study further maintains that teacher negative feedback that conveyed attributions of low ability for pupils' failure led to feelings of learned helplessness among pupils. Thus, it hindered pupils' motivation to try harder as pupils perceive themselves as not being in control of their low ability and would not persist in their learning, believing that no amount of effort would help them to improve themselves. Ames (1975) further reported that the feelings of learned helplessness has even more devastating effect on the achievement behaviour of low achievers as they perceive that no amount of effort will lead them to succeed in a competitive climate which renders success to only a few.

Research by Graham (1990) and Weiner (1986) showed that the way teachers react to pupils' failure affects pupils' attributions and motivation. Hence teachers' responses or feedback about pupils' behaviour and performance send cues to pupils which might affect their future performance. Furthermore, a study carried out by Schunk, (1985) revealed that sympathy towards pupils who have failed might be interpreted as a sign that pupils have low ability, an uncontrollable factor which in turn, undermines the pupils' intrinsic and extrinsic motivation to

work harder. Similarly, Dweck, (2000) adds by postulating that when teachers feel angry about a pupils' failure, it makes the pupils feel that they haven't invested sufficient effort and might make them try harder next time.

According to Borich (1995:p 233) teachers' behaviour imparts attributional information to their pupils. This implies that if teachers are conscious of the attributional messages they send to their pupils, then they can affect attributional changes in their pupils. In this way bring about successful learning. Dornyei (2001) endorsed this by mentioning that teachers can encourage internal attributions and downplay external ones and that by emphasizing the link between effort and outcomes, they will have a positive impact on pupils' perceptions that attributions towards success can indeed be controlled.

Teachers can exploit this to promote learning by focusing on effort as the factor. In a situation where "teacher influence" has been identified as one of the most endorsed attributes for success, evaluating pupils and grading their tasks with a heavy hand may be counter-productive to the learning process of their pupils. Course assignments should be planned in such a way that it leads to effort and later leads to successful academic outcomes. The teachers' evaluation should enable pupils to see this link. Positive teacher feedback has a significant impact and if teachers consistently help pupils make strategic effort attributions, that is, believing that working hard in a particular way ultimately leads to success, they can be encouraged to regard failures as the stepping stones in the search for improved learning strategies.

In addition, regardless of the type or nature of the failure experienced by a pupil during his or her academic process, failure is a negative event that can be either motivating or debilitating, depending on how the experience is explained and faced. According to attributional theories (Weiner, 1979, 1985, 1993), if a pupil experiences failure and attributes their failure to lack of ability, the pupil is likely to experience emotional motivational and cognitive deficits he or she may dislike anything uttered by the teacher during teaching and learning. In contrast, if a pupil attributes failure to task difficulty or bad luck, the pupil experience no behavioural or affective deficits. Therefore, according to these attributional theories, causal attributions determine, in part, the consequences of a failure experience.

2.3.3 Attribution effects due to teacher expectations

Teacher expectations concerning pupils are frequently based on information acquired prior to any direct observation or interaction with pupils. It is important to investigate teachers' attributions because teachers often play a huge role in pupils' behaviour and may predict the success of pupil in class. Teachers' expectations can influence pupils' motivation and performance attribution. Pupils base their attributions for failure on cues from the classroom teacher about their competence (Clark, 1997). In a study by Reyna and Weiner, (2001) on Justice and Utility in the Classroom based on an attributional analysis of the goals of teachers' punishment and intervention strategies found that teachers were likely to experience emotions of anger or sympathy following pupils' performances in mathematics. It also established that depending on their expectations of their pupils it was further found that, expectations for pupils' performance were conveyed by teachers, whether higher or low, in a variety of subtle ways. Teachers with high expectations acted by teaching more difficult material, insisted on high achievement, gave pupils more opportunities to respond to questions, rephrased questions if they faced difficulty and gave positive feedback (Reyna & Weiner, 2001).

Similarly, Cooper and Barron (1979) in their study examined the relative contribution of performance expectations and attributions of personal responsibility. Three teachers selected pupils for whom they had high, medium, and low expectation in each class. Teachers completed a responsibility and expectation rating of the pupils, and actual classroom behaviour was observed. The results indicated performance expectations were more effective predictors of teachers' feedback behaviour than were attributions of responsibility. High-expectation females were praised more freely than were other pupils. In addition, pupils identified as higher performers were given more praise than were average pupils. Low expectation pupils tended to be criticized more freely than were high expectation pupils.

Research has shown that teachers with low expectations on pupils give more assistance than needed, accept poor performance, criticize incorrect answers to questions, overlook good performance, and fail to encourage new and challenging tasks (Alderman, 2008). Though these expectations are, to some extent, related to pupil past performance, yet teachers may hold different expectations from each pupil due to his class behaviour, socioeconomic status or gender.

If teachers say that a pupil is incapable of learning mathematics, that pupil is likely to attribute his failure to his low ability and try little (Ormrod, 1998).

Pupils who do not match teacher expectations are at risk for poor performance and bad behaviour. If negative attributions are made about the pupil by the teacher before entering the class the pupils' success rate in the classroom could be minimal. Hence it can be argued that, teachers' expectations play a huge role in the pupils' behaviour. Pupils who do not have the skills to meet the teachers' expectations are in danger of depreciatory outcomes including poor school adjustment in the form of impaired relationships with teachers and peers, poor academic achievement, and high rates of disciplinary problems (Lane, Pierson & Givner 2003).

When teachers have preconceived notions that pupils are likely to be unsuccessful, the result is often that they treat these pupils in such a way that lead to inferior outcomes (Alderman 2008). In their research on overcoming common barriers to pupils learning, Burks et al. (2009) noted that outlining clear expectations builds trust with the pupil. Pupils cease to be motivated if expectations are unclear or unreasonable and resort into negative attributions. This seems to imply that pupils themselves usually develop a set of beliefs about the reasons for their failure.

In support of the aforementioned Dweck and Leggett,(1988) have discussed how pupils' conceptions of ability and intelligence can have important motivational consequences. Dweck (2000) argued that pupils holding an entity theory of intelligence are motivated to look smart and protect their sense of ability. Pupils believing intelligence can change focus on learning and improvement. When pupils do poorly, believing that one's ability has a limited capacity means that failure is more debilitating. Some pupils holding this view will believe they have little chance of ever doing well, because their ability cannot be improved.

2.3.4 Past history of successes and failures as causal attribution

In his research, Batool (2011) indicated that, past successes and failures are partly the causes of attributions, teachers usually judge pupils according to their previous experience they predict one pupil would perform well or bad according to his/her past grades. Therefore, if one pupil who perform well on a mathematic examination but not doing so well on his/her past mathematics examinations, the teacher might attribute his/her performance as luck or cheating. In

addition, Batool (2011) indicated that, past attributions affect pupils' current achievements motivation. When pupils have consistently experienced failure in the past, they are likely to attribute current failure to stable causes such as ability and tend to be demotivated in trying hard. If, however, past performance is inconsistent, pupils are more likely to attribute their current failure to unstable causes such as effort, luck, or the ease or difficulty of the task.

Pupils who usually succeed when they work hard are likely to believe that success is due to effort or high ability. Those who fail, despite effort, consider success as uncontrollable. They think that they do not possess ability or it is due to external factors and no matter how they try, they will never perform well. They will always be basing their assumptions on the past. In this case it vital to assume that, prior performance and history information directly influences how pupils view their current performance and motivation in performing academic tasks.

2.4 Summary

According to attribution theory, failure in academic tasks is associated with three characteristics namely, firstly, pupil internal or external factors, that is, factors that originate from within the self or factors that originates from their environment. Secondly, stable or unstable factors, if people believe that the factors are stable, then they may believe that the outcome of their performance is likely to be the same next time they attempt the same or similar task. If the factors are unstable, it means that they can be changed and therefore the outcome of performance may be different next time behaviour is performed. Thirdly, the causes of failure may be either controllable or uncontrollable. If the causes are controllable, then it means that people believe that they can alter these causes. But, on the other hand, if people believe that the causes are uncontrollable, it means that they cannot be altered easily (Weiner, 1985).

In failure situations, internal attribution increases feelings of guilt whereas external attributions increase feelings of anger and surprise. In the classroom, repeated failures produce high levels of frustration for the pupil, which impedes the learning process. Consequently, teachers often view the pupil as not caring enough or simply not trying to learn the mathematical concepts. The literature review has brought out what is going on in the schools concerning the attribution teachers and pupil make in mathematics teaching and learning. It is for this reason that the

researcher would like to establish the causal attribution of failure among the grade nine repeaters in mathematic examination in Nakonde district.

CHAPTER THREE

METHODOLOGY

3.0 Overview

This chapter presents the methodology that was employed in the study. It begins with the description of research design, the study site, pilot study, target population, sample size, sampling procedures and research instruments used for data collection. Further, a description for procedures for data collection and how data was analysed in order to answer the research questions are presented. The chapter also takes into account ethical considerations that were made in the process of data collection. It ends with a summary.

3.1 Research designs

Kombo and Tromp (2006) describe research design as an arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose. Therefore, a research design is a framework in the whole process aimed at showing the researcher the direction of the research. Farrant (2008) also states that a research design can be defined as a method used to gather information from various sources in order to generate answers to research problems. The study design positions the researcher in the frame of mind to get to places or areas where to find possible documentation and sources of data relevant to the question under study.

A Mixed Method Research (MMR) design was employed in this study. Mixed method research is an emergent area of methodological choice for many academicians and researchers from across a variety of academic research discipline. An oft used quotation by Creswell and Plano Clark (2007: 5) provides a comprehensive definition of mixed methods as follows:

Mixed methods research is a research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical assumptions that guide the direction of the collection and analysis of data and the mixture of qualitative and quantitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative

approaches in combination provides a better understanding of research problems than either approach alone.

The purpose of this design is “to obtain different but complementary data on the same topic” (Morse, 1991, p. 122) to best understand the research problem. The intent in using this design is to bring together the differing strengths and nonoverlapping weaknesses of quantitative methods (large sample size, trends, generalization) with those of qualitative methods (small and details in depth) (Creswell and Plano 2007)). This design is used when a researcher wants to directly compare and contrast quantitative statistical results with qualitative findings or to validate or expand quantitative results with qualitative data.

Hence the study combined both quantitative and qualitative methods. Quantitative methods aim at getting numerical information on teachers’ and pupils’ causal attributions. According to Rubin and Babbie (1993: p 30):

Quantitative research methods emphasize the production of precise and generalizable statistical findings. They believe that there is certain objectivity about reality, which is quantifiable. The data which are collected by positivists tend to be numerical and are open to interpretation by use of statistics: thus the data are said to be quantitative.

Quantitative methods deal with data that are coded and represented by statistical scores or statistical data. It explains in quantitative term how variables interact, shape events and cause outcomes (Griffin, 2006). In this regard quantitative approach/method was helpful in coding internal and external attributions and other responses of teachers’ and pupils’ causal attributions.

Equally, qualitative methods involved description of people’s feelings, perspectives, opinions, attitudes and experiences on factors influencing teachers’ and pupils’ causal attributions of failure in grade nine public mathematics examinations. Additionally, Cohen, Manion and Morrison (2007) postulate that qualitative research helps in the understanding of the way in which the individual creates, modifies and interprets the world in which he or she finds himself or herself. It deals with data that are not transferable to numbers and not comparable by statistical procedures (Sidhu, 2003). Qualitative research was also best fitted for this study since

precise and substantial descriptions of the teachers' and pupils' causal attributions from their own point of view were needed (Denzin & Ryan, 2007). However, in this study, the inclination was towards qualitative research because it has an interpretivist perspective. It portrays the worlds as construction with each other and with wider social systems (Denzin & Ryan, 2007; Sidhu, 2003).

In this case it can also be said that, both approaches (quantitative and qualitative) were employed for the sake of triangulating the results. According to Weiss and Bucuvala (1998), triangulation results in a stronger research design and more valid and reliable findings. In triangulation, the advantage of one method compensates for disadvantages in another and that studying from different perspectives gives a fuller picture. For example, quantitative approach has its own weaknesses. This include the fact that it rely on standardization which requires that constructed questions are general enough to be minimally appropriate for all the respondents. This factor could lead to failure to elicit information from some respondents with unique characteristics (Griffin 2006: Sidhu, 2003). This limitation was addressed by the use of in-depth interviews for pupils and Focus Group Discussion (FGD) for the head teachers, deputy head teachers, mathematics teachers, and guidance and counselling teachers. One to one in-depth interviews and FGDs helped in getting in-depth information, capturing the information which could not have been collected through questionnaires and for the purpose of triangulating the results.

Questionnaires captured both qualitative and quantitative data while the in depth and FGDs specifically captured qualitative data which gave additional value to the research findings. It was particularly felt that the findings from in depth interviews and FGDs would help add more value to the findings of the questionnaires because it involved quality interaction between the researcher and the respondents.

In support, Griffin (2006) observes that in-depth interviews and FGDS have the ability to bring out detailed information about personal feelings, perceptions and opinions because they allow uncertainties to be clarified and precise wording to be tailored to specific respondents, they make possible the discovery of attitudes and opinions from respondents that could not have been revealed in a survey questionnaire. This therefore leads to the production of a lot of information far more easily.

3.2 Study Sites

The study was conducted at the following six selected junior secondary schools in Nakonde district of Muchinga province, Zambia: Nakonde secondary school, Ikawa secondary school, Donald Siwale secondary school, katozi secondary school, Waitwika secondary school and Chilolwa secondary school. Nakonde district has a total of 45 schools which has grade nine classes these includes junior and senior secondary schools.

3.3 Target population

The target population consisted of all the schools, all head teachers, deputy head teachers, and guidance and counselling teachers, all secondary school mathematics teachers, all grade eight and nine pupils in Nakonde District. Kombo and Tromp (2006) refer to population as the entire source of the information a researcher utilises to guide a research. This can include a group of people, trees, documents; historical monuments and any other from which a sample can be drawn. A target group on the other hand describes a specific group of individuals, in the case of this study, head teachers, deputy head teachers, guidance and counselling teachers, secondary school mathematics teachers, grade eight and nine pupils constituted the population from whom findings and generalisation were drawn.

3.4 Sample size

A sample is a proportion of the population selected for the purpose of observing and analysing information. This sample should have the characteristics, know-how and be accessible to help in the area of the study that a researcher is to investigate. According to Best (2006) the larger the sample the more representative it is likely to be and results of the findings would be generalised to the target population. This is so because one would not include everyone or everything in the population to draw data.

This study included 150 respondents from the six selected secondary school in Nakonde district. The distribution of the respondents was as follows: six (6) head teachers, six (6) deputy head teachers, six (6) guidance and counselling teachers, six (6) head of mathematics Departments (HoD's), six (6) grade nine mathematics teachers and 120 pupils who had failed final public

grade nine mathematics examinations. Gender was also observed when selecting the sample of the study as shown in table 3.1 below.

Table 5: Demographic information of respondents by gender

Respondents	Low Density School		Medium Density School		High Density School		Total
	Male	Female	Male	Female	Male	Female	
Gender							
Pupils	10	8	18	19	31	26	112
Mathematics Teachers	2	0	2	0	1	1	6
Head of Department mathematics	2	0	1	1	1	1	6
Guidance and Counselling Teachers	0	2	1	1	0	2	6
Deputy Head Teachers	1	1	2	0	0	2	6
Head Teachers	2	0	2	0	1	1	6
Total respondents	17	11	26	21	34	33	142
	28 (19.7%)		47(33.1%)		67(47.2%)		(100%)

3.5 Sampling procedure

According to Kombo and Tromp (2006) sampling procedure refers to the part of the study that indicates how participants selected to be included in the sample is done. The selection is done in a systematic way. The study used stratified random sampling, purposive sampling and simple random sampling in the selection of schools and participants. Schools were selected using

stratified random sampling of which, two schools were sampled from each strata that is those schools from the East (low density school) 28 (19.7%) of the respondents were sampled, 47(33.1%) came from medium density areas while 67(47.2%) were sampled from high density Central (peri-urban-high density school) areas as shown in table 3.1. The sampling was done in such a way because the researcher thought to have a representation of the respondents in all areas of the district of Nakonde.

Purposive sampling was used to select school educators as they were the only ones available and with the needed information. As regards, to repeaters who had failed mathematics either in 2014 grade nine final examinations or before and were made to repeat in grade eight or nine, the researcher used simple random sampling. Only 120 pupils from the six selected secondary schools were sampled. In order to make sure that all the pupils had equal chances of being picked. Pieces of plain papers were cut according to the number of pupils present, "Yes" was indicated and the rest "No" was also indicated. A bigger box was used to shuffle the pieces of papers. This was followed by requesting pupils to pick one piece of papers each. Those who picked pieces of papers indicating "Yes" automatically became respondents.

Out of the total number of 120 pupils who were sampled, 59 (49.2%) were female and 53 (44.2%) males and 4 (3.3%) failed to complete the questionnaire and did not indicate their gender and also 4(3.3%) also did not return the questionnaires, hence there were all dropped from the study and only 112 pupils participated fully in the study.

3.5.1 Demographic details of teacher's qualifications and teaching experiences

In this study, out of 12 respondents (Head of department and mathematic class teachers) who were sampled, only 1 had a bachelor's degree in mathematics, 2 had a diploma in mathematics secondary teaching while 9 had certificates in primary teaching as shown in table 3.2 below. The teaching experience of teachers as respondents revealed that 1 out 12 had taught between 15-20 years, 1 out 12 had taught between 10-15 years, 3 had taught between 5-10 years, while 7 had taught for less than 5 years. Equally, 8 teachers were in the range of below 35 years, 3 were in the range of between 35-39 years. While 1(one) was in the range of between 40-44 years as shown in table 3.2 below. This showed that majority of mathematics teachers were fairly young

and were expected to be energetic in teaching the subject despite most of them being unqualified to teach mathematics.

Table 6: Details of teachers’ qualifications, age and their teaching experiences

Teachers’ Qualifications		Age of Teachers		Teaching Experiences	
Qualifications	Number of Teachers	Age	Number of Teachers	Experience	Number of Teachers
Masters	0	Under 35years	8	Under 5 years	7
Degree	1	35- 39 years	3	5-10 years	3
Diploma	2	40-44 years	1	10- 15 years	1
Certificate	9	45- 49 years	0	15-20 years	1

3.6 Instrument for data collection

According to Orodho and Kombo (2002) a research instrument can be defined as a tool or device chosen by the researcher to collect required information. In order to solicit causal attributions from head teachers, deputy head teachers, HoD- mathematics, guidance and counselling teachers, mathematics teacher, as well as pupils, triangulation was used by employing three different methods of data collection namely; in-depth interviews guide, likert scale questionnaires and focus group discussion. This was done in order to ensure validity and credibility of the findings, (Cohen et al.,2007). All the data collection instruments have been included as appendices.

3.6.1 Focus Group Discussion Guide

Focus group discussions guide used to collect more data from the respondents to consolidate the data that was collected using questionnaires and interviews. This was used because a focus group discussion is an interactive event guided by an interviewer to stimulate participants, guide

discussion and probe in order to obtain highly detailed and specific group data that meet the research objectives (Shedlin & Schreiber, 1994).

3.6.2 Likert scale Questionnaires

According to Cohen, Manion and Morrisin (2007) a questionnaire increases the external validity of the study done in the natural setting. Besides, questionnaire can be misinterpreted. In this study, a questionnaire was chosen because it allowed the researcher to use the same question items to all selected teachers and pupils in the sample. In addition, a questionnaire was used due to the fact that it could be presented to different respondents in the same way without any alterations. It also helped to gather data within a shortest possible time. Besides, the results obtained from using a questionnaire were easily objectively compared.

Ideally, teachers' and pupil's major causal attributions of pupils academic achievement in terms of locus of control basing on ability, luck, effort, and task difficulty are investigated through standardised questionnaires (weiner, 1979). Furthermore, the instrument used to measure teacher attributions for pupils failure was developed by Georgiou and colleagues (2002). The instrument has never been used in Zambia but in other African countries and other continents. The instrument consists of 30 Likert-type statements. Respondents are asked to indicate how each item affects the selected pupils' school failure on a 5-point scale. Some items used in this questionnaire were: "The pupil fails at school because of his/her limited intelligence", "The pupil fails at school because of his/her parents' educational background," and "The pupil fails at school because of the ineffective teaching methods that I used as a teacher".

In this study, Mathematics Causal Attributions Scale (MCAS) was adopted and modified by the researcher in line with Georgiou et al., (2002) and Wigfield, Eccles, Yoon, Harold, Arbreton, Freedman-Doan and Blumenfeld, (1997) causal attribution assessment scale. The modified MCAS was a likert type of four-point rating scale which was used to identify causal attributions of pupils and teachers. In the light of literature review, the instrument was based on taxonomy of 7 types of causal to investigate participants' attributions for failure in Mathematics. The options included strongly disagree, disagree, agree and strongly agree (Appendix 1 and 3). Seven attributions, used in current study, were categorized along three dimensions of locus, stability and controllability. This categorization is suggested by Weiner (1979) and Russell (1982), and

was used by Vispoel and Austin in their study in 1995. Tuckman and Monetti (2011) also described various causal attributes on each of the three dimensions.

3.6.3 Interview guide

A semi-structured interview guide was used to collect in-depth qualitative data from six mathematics teachers and 120 pupils. However, it must be noted that only six mathematics teachers who participated in the use of questionnaire were given chance for face to face interviews. This was so because, the researcher thought of making comparisons which also aid in triangulating the data. Interviews are considered to be effective in data collections, as pointed out by Lindlof and Taylor (2000). The advantage of an interview guide is that it allows for new questions to be brought up during the interview as a result of what the interviewee says. Through this type of instrument, the researcher was able to collect useful information related to the study. This strategy has the support of some researchers who concluded after the use of a simple open questionnaire in a study that investigated success and failure from an attributional perspective. It was observed that a more in-depth interpretive research, possibly employing face to face in-depth interviews to gain deeper understanding of the underlying reasons for teachers and pupils' causal attributions, would certainly seem to be warranted (Williams et al., 2004).

3.7 Pilot study sampling procedure

Before the actual data collection was embarked on, questionnaires were pilot tested. A pilot study was conducted so as to test the validity of the research instruments which were used. According to Weiss and Bucuvala (1998) pre-testing or pilot work to test questions or methodology is very vital for the success of any research. The pilot was conducted in two non-sampled schools namely Ntindi and Kantongo junior secondary schools for two weeks starting on the 24th of November 2014 to 8th December 2014. The schools involved in this pilot study are part of Nakonde district schools with characteristics similar to the targeted study population. The pilot was instituted with the view of refining, contextualising and testing the appropriateness of the instruments to suit the causal attribution of failure in public grade nine mathematics examinations under study. To this effect questions were revised and refined based on the information provided by the pilot study. The sample of the pilot consisted of twenty six

respondents namely, eighteen pupils, two mathematics teachers, two head teachers, two deputy head teacher, one guidance and counselling teacher and one mathematic HoD.

Following the activities, changes were realized such as dropping of certain questions and sections, which were not relevant. Some questions were rephrased or completely removed to ensure that the data collecting instrument was perfected with minimal ambiguities. For example, questions in likert scale questionnaire was paraphrased and reduced to five questions for pupils and seven for teachers as this was thought that, it would provide genuine responses to the questions this researcher prepared so as to arrive at proper conclusions. These processes made the instruments more suitable for the actual research and it brought out the required information from the respondents as demanded by the objectives. In this regard validity and reliability of the instrument were determined.

3.8 Procedure for data collection

Six Focus Group Discussions (FGD) each consisting of five participants from each school were conducted; these were the Head teachers, Deputy Head teachers, mathematics HoD and Guidance and Counselling teachers. All the discussions were conducted in the afternoon according to the agreement with the respondents and also with the school authorities. Likert scale questionnaires were administered to twelve (12) teachers, which included mathematics HOD and 120 pupils who failed public grade nine mathematics examinations. The questionnaires were administered to named respondents by the researcher in person assisted by six research assistants who happened to be heads of department for sciences. After completing, questionnaires were collected by the researcher. The researcher also conducted the in-depth interview with the teachers and pupils who participated in giving responses using a questionnaire. Although this method was time consuming, it was effective in that it helped to obtain in-depth information from the respondents.

3.9 Data analysis

Data analysis can be described as the process of examining the collected information by deductions and inferences from it. Kombo and Tromp (2006) state that analysis of data can be done qualitatively or quantitatively. Hence, data analysis is a process of making meaningful and

useful conclusions from bulky and jumbled pieces of information obtained during the course of one's investigation of the problem. In this study both qualitative and quantitative data were utilised. Qualitative data was analysed thematically and data was sorted out and the emerging issues were categorized into various themes or sub-headings. These sub-headings were later used as sections and sub-sections during report writing. The findings from the analysis helped establish relationships between and among variables; and to determine the extent to which each variable contributed towards revealing causal attributions in academic performance

Objective responses of information that were obtained with the use of Likert scale questionnaires were analysed quantitatively using the descriptive statistics. This involved the use of frequencies, percentages and cross tabulations. Data was then presented in form of graphs, tables and statistical figures using excel so as to give meaning to the findings. During data entry, great care was taken to ensure uniformity and accuracy in respondents' answers and recording for analysis and tabulation. For example, responses from Likert scale questions were classified under headings and then coded. The analysed observations were mostly presented in form of tables and graphs indicating frequencies and percentages.

3.10 Ethical considerations

Ethical issues need to be anticipated and dealt with by the researcher (Creswell, 2009). To start with, clearance was sought from the ethical clearance of the University of Zambia, see Appendix 6. All participants were informed about the nature, intention and the purpose of the study. According to Wimmer and Dominick (1994) the principle of confidentiality and respect are the most vital ethical issues which a researcher is required to fulfil. Therefore, before the distribution of questionnaires and conducting of interviews, informed consent was obtained from both the respondents and the head teachers in charge of schools where the research was conducted. In addition, the researcher also assured the respondents of high degree of confidentiality by informing them that their names were not to be included in the study. Therefore, all respondents in this study remained anonymous. The respondents were also informed that the information collected was purely for academic purposes.

CHAPTER FOUR

RESEARCH FINDINGS

4.0 Overview

This chapter presents the findings of the study which aimed at investigating causal attributions of failure in mathematics examinations in selected junior secondary schools in Nakonde District. The findings are presented according to the objectives. Objectives of the study were: to ascertain pupils' causal attributions to their failure in grade nine public mathematics examinations, to establish teachers' causal attributions on the failure of grade nine pupils in public mathematics examinations and to determine how attribution of failure affects future performance in public grade nine mathematics examinations. Findings are divided into quantitative data, which is presented in form of figures while qualitative data involving actual words said by respondents have been used as much as possible in the descriptions, some words have been paraphrased.

4.1 Pupils' causal attributions to their failure in grade nine public mathematics examinations.

The internal and external causal attributions of pupils to their failure in grade nine public mathematics examinations are covered in this section.

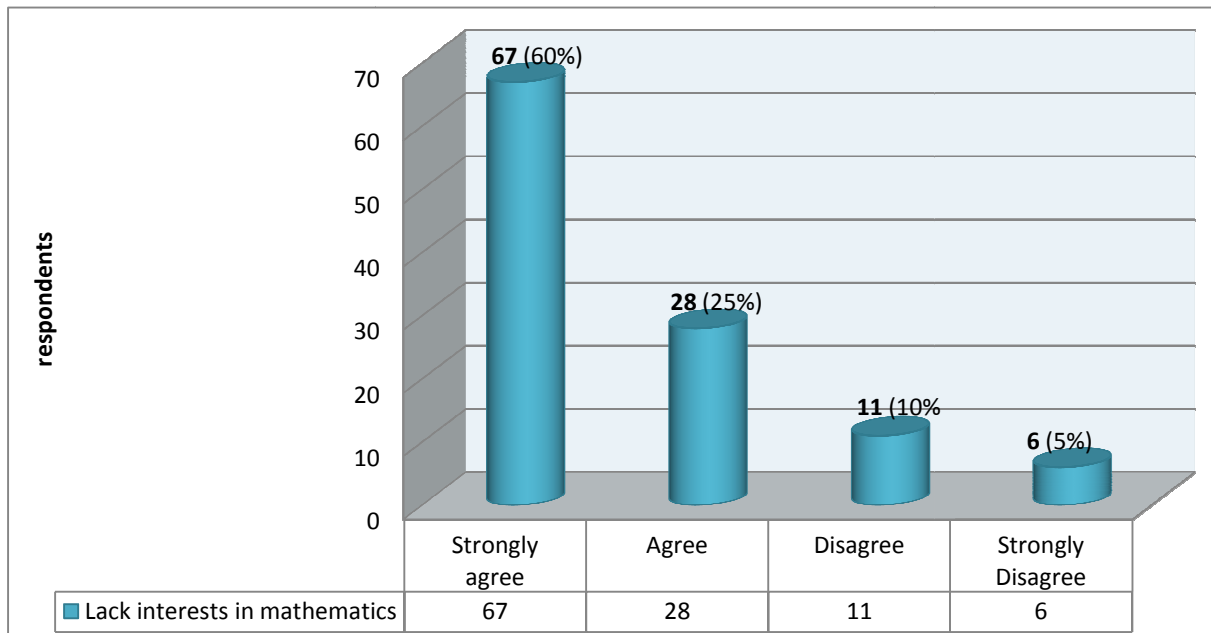
4.1.1 Pupils' internal causal attributions

This section presents the pupils internal causal attributions of failure in grade nine public mathematics examinations. It reveals the numerical information of attribution drives from likert scale questionnaire and also narrative attributions of pupils which were gotten through the use of in-depth interviews.

Pupils' attribution on lack of interest in mathematics

Whether pupils' low performance in public mathematics examination was due to lack of interest in mathematics, the distributions of responses from the respondents are shown in figure 4.1 below.

Figure 1: lack of interest in mathematics



The study revealed that out of 112 respondents who were sampled, 67 (60%) strongly agreed while 28 (25 %) agree. Equally, 11 (10%) disagreed while 6 (5%) strongly disagreed with the statement. Pupils who reported lack of interest in mathematics were then asked for their views during interview on why they thought lack of interest was a contributing factor to low performance in the examination. The majority of pupils indicated that they disliked the subject and that mathematics was naturally hard to comprehend. When the researcher probed further on why pupils dislike mathematics The most common reason for disliking mathematics was given as inadequacy or not being good at mathematics just from lower grades.

For example: one female pupil said,

I just wasn't very good at it when I was at primary school so the same minimal efforts have been prevailing in me that is why I hate mathematics so much.

Another male pupil said,

Well, I dislike the subject and i don't think I have ever grasped it very well right from my early school days, so... and my mental mathematics has always been very poor.

Others related to their experiences of repeated failure in mathematics both in class task and in examinations. When they were asked to describe their experiences of learning mathematics at school, one of them described her experiences as,

I don't seem to catch up in Mathematics every time results are low. There was a time when our class had no Mathematics teacher in grade eight for almost two terms and from that time my mind was put off from learning mathematic.

While another respondent said,

I hate Mathematics because I was demoted from the top set of hard working pupils in mathematics to the bottom set when we wrote end of term test by the teacher who hated me and from then on, I changed my mind not to like Mathematic anymore.

Pupils' attitude in Mathematics

Asked on how their attitude was, toward learning mathematics, the pupils gave multiple responses which included,

“I usually do not enjoy studying Mathematics,” and “Mathematics is not enjoyable and not interesting to me,” “I feel nervous, confused, and uncomfortable towards mathematics in general.” “Mathematics is not a very important and necessary subject to me.” “I don't want to take any more mathematics than I have to, other subjects are more important to people than mathematics.” “I rarely like studying mathematics,” “I am not interested in learning more information in mathematics.” “Mathematics makes me feel uncomfortable and confused during learning and examinations.” “Mathematics is dull and boring.” “Mathematics is one of my most hated subjects.” “I am not motivated to work very hard on mathematics lessons.”

Furthermore most of the respondents expressed strong negative feelings. Common responses included: "I hate it." "It leaves me feeling with ill emotions." "It is dull." One of them described her feelings in mathematics as *Er! It's Horrible! I really don't like it. It is ... you know; sometimes I feel sick when it comes to Mathematics.*

Furthermore, pupils' attribution pattern in low mathematics performance was found to depend significantly on the occupation that they preferred to enter after leaving school. Most common

preferred occupation included, police, ward counsellors, village headman, teacher, taxi driver, road maintainer officer, nurse and security guards. This implies that pupils had negative attitude towards the subject, as they attributed dislike of the subject to external and stable factors, they felt that mathematics is not a required subject to the force-related primary and other mentioned occupations above. Regarding counselling and guidance, on career choices it was also revealed during FGD that counselling services were not adequately provided in schools. The study also gave a picture of the nature of guidance and counselling services pupils receive from sampled schools in Nakonde district.

When asked on whom pupils blame for the loss of interest, majority of the respondents reported that they blame mathematic teachers despite pupils attributing failure to internal stable and uncontrollable causes(loss of interest). Most of pupils cited reason of teachers not having positive interest in teaching mathematics; they also indicated that teachers failed to explain well the concepts involved in mathematics were the causal. Furthermore, pupils also claimed that their mathematics teachers did not give them enough attention or encouragement. In this regard it appears their experience of learning mathematics at school was characterised as didactic, not interactive.

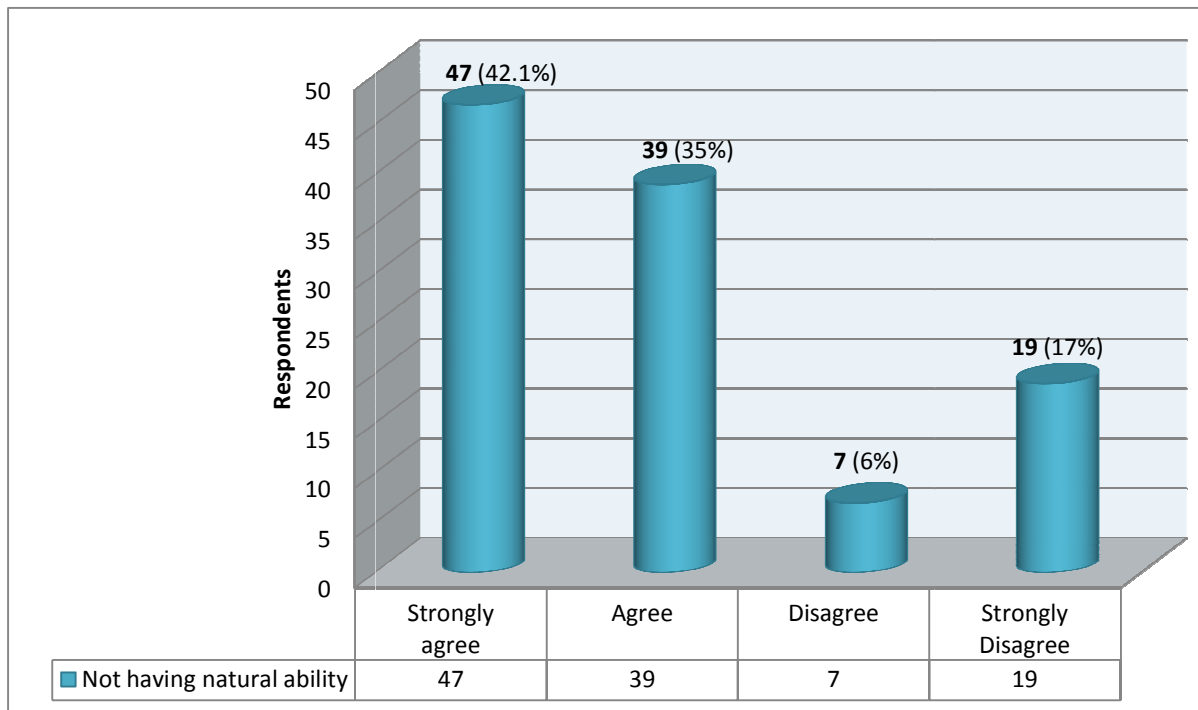
Pupils' attributions on having natural ability

Asked whether, low performance in mathematics examinations was due to not having natural ability in mathematics the pupils gave the following responses:

Out of 112 pupils who participated in the study, 47 (42.1%) strongly agreed and 39(35%) agreed to the statement while 7(6%) disagreed and 19 (17%) strongly disagreed. Figure 4.2 below shows pupils' response on not having natural ability in mathematics. The above data implies that the majority of pupils attributed their failure in mathematics to not having natural ability in mathematics. The majority of pupils also reported that mathematic was naturally difficult. They cited developing a problem in mathematics way back in early grades. During the interviews, pupils gave similar multiple responses which included attributions such as learning mathematics is "impossible," Some respondents expressed the view that they lacked the ability to learn mathematics because it was too much to take in and retain or they had been trying to learn but it could not work-very hard. A few others gave their attributions of learning of mathematics in the

form of metaphors such as; learning mathematics is like "going down a black hole that you can't get out of". All the responses included in this subcategory show intense negative feeling of the subject.

Figure 2: Pupils’ responses to not having natural ability in mathematics



Pupils’ attributions to laziness

As to whether low performance in mathematics examinations was due to laziness in learning mathematics, the study revealed that 49 (44%) strongly agreed while 44(39 %) agreed. Equally, 13 (12%) disagreed while 6 (5%) strongly disagreed to the statement. Pupils further reported that the laziness was induced by the disliking of the subject and not having natural ability, hence they gave up easily thinking that mathematics was not worthwhile. The common response included: “I was lazy,” “I did not prepare enough,” “I had not enough time for preparing,” “I could not plan my time,” “My learning was not persistence,” “I am no longer interested in mathematics.” In this regard, pupils’ attributions in this subcategory were centred on internal, unstable and controllable. It was teacher’s role to curb such negative attributions.

Pupils' attributions on lack of study in mathematics

Asked whether low performance in mathematics was due to not studying mathematics, the study revealed that, 56 (50%) strongly agreed while 35(31%) agreed. Equally, 11 (10%) disagreed while 10(9%) strongly disagreed to the statement. The study also revealed during interview that pupils had no time to study the subject due to negative peer influence. When pupils were asked during interview on whether their friends influenced their academic performance in mathematics, the common response mostly from urban high density schools included:

“My friends encourage me to sneak out of school to go and make money across the border and I agree;” “I don't like discussing academic work with my friends;” “I always follow my friends to go and watch different types of films across the border town in Tanzania.”

Other responses from low and medium density schools included,

“Sneaking out of school to go and plait people's hair, burn charcoal for sale, play football and netball with my colleagues, collect fire wood for sale.”

Despite attributing failure to internal cause, majority of the pupils denied been responsible for cause of their failure, they cited that, teachers' bad characteristics contributed greatly to negative attitude towards studying the subject. All the pupils also cited negative comments from teachers and teachers not guiding them on study habits.

Pupil's attributions to their absenteeism and truancy

On whether pupils poor performance in mathematics examination was due to their absenteeism, the study revealed that, 19 (17%) strongly agreed while 72 (64%) agreed. Equally, 9 (8%) disagree while 12 (11%) strongly disagreed to the statement. During interviews, the majority of pupils conceded that they failed mathematics examination because of their own absenteeism and truancy which made them not to expedite more effort in studying. Others attributed that they used to devote less time for learning and studying, using a wrong studying strategy and being not persistent in studying. Almost all the pupils mostly from urban high density school, attributed that, they used to sneak out of school to go and make money across the border, parents used to engage them into economic ventures such selling of talk time, selling bread and scones, were

made to shun school to go and assist their parents in the gardening fields, plait people's hair, and others attributed to that, they were fond of playing gambling game commonly known as bonanza which the Chinese people have put in various parts of Nakonde, spending more time playing football and netball. Those mostly from medium and low density schools, submitted burning charcoal and collecting fire wood for sale. Others attributed to that they were interested in herding animals such as cattle and goats. As for most of the girl the common responses was too much engaging in household chores.

All in all, it was revealed that pupils did not like discussing academic work with other friends and it was quite interesting to note that all the pupils denied taking on the blame for their failure despite submitting negative internal attributions.

4.1.2 Pupils' external causal attributions

This section presents the pupils external causal attributions of failure in grade nine public mathematics examinations. These are reflected both in numerical and in narrative form.

Pupils' attributions on lack of qualified mathematics teachers

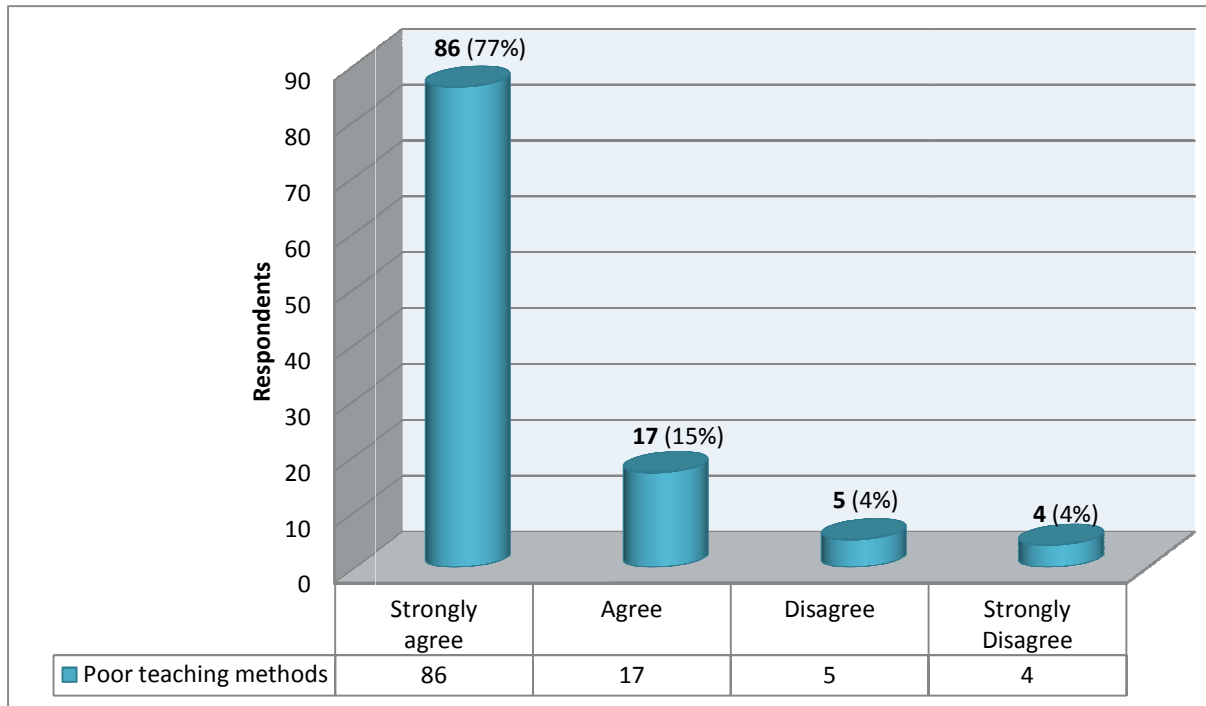
Whether pupils' failure in public grade nine mathematic examination was due to lack of qualified mathematics teachers, the study revealed that, 77(69%) strongly agreed while 23(21%) agreed. Equally, 7 (6%) disagreed while 5 (4%) strongly disagreed to the statement. In this study it was clear that pupils attributed poor performance in the grade nine public examinations to external unstable and controllable cause. They felt that teachers were not qualified to be teaching them in mathematics. Asked on whether teachers were not competent in teaching mathematics the study revealed that, 52(47%) strongly agreed while 36(32 %) agreed. Equally, 15 (13%) disagreed while 9 (8%) strongly disagreed to the question. In this regard, the study revealed that teachers were incompetent to handle the subject accordingly.

Pupils' attributions on poor teaching methods/ strategies

The pupils were asked on whether that failure in grade nine public mathematics examination was due to poor teaching methods/ strategies, the study revealed that, 86 (77%) strongly agreed

while 17(15%) agreed to the question. Equally, 5 (4%) disagreed while 4 (4%) strongly disagreed to the question as shown in figure 4.3 below.

Figure 3: Responses on poor teachers’ methods/strategies



Data obtained indicate that teachers were using lecture method. Pupils reported that most of the time they were made just to listen to the teacher’s explanations, and the teacher asking the class questions. When asked if pupils were comfortable with the teachercentred method, all the interviewed pupils mentioned that, they were not feeling comfortable and the majority narrated that the method teachers were using to teach mathematics was ineffective in that it used to turn the pupils into passive participants in the learning process.

With regard to teaching strategies the common responses obtained included, no group work was used, field trips were not there, less home work was given in a term, the teacher used to rush through the topics. To this affect one girl, in attributing her inabilities and a need to be helped revealed as follows:

My problem is that the teacher is too fast ... I do not understand the method he uses in maths. I want someone who is patient and does not get angry with me.

Another pupil who failed twice in grade nine including mathematics said:

You find that you tell the teacher that you don't understand he ends up shouting and asking ... how come you don't understand such an easy sum? ... You just don't use your brains ... you slow learner.

Another grade eight pupils who failed mathematics in grade nine and was made to repeat in grade eight attributed learning mathematics as related to some degree of boredom. She narrated that as follows:

Learning mathematics is boring because it consists of confusing and jumbled methods.

Similarly another female pupil had this to say:

I think i hardly have any respect of my maths teachers because i don't think they were teaching me in a way that I could understand. Why were they telling me that mathematics is for hard men? to me this was quite disturbing however given a good teacher I can make it.

Pupils' attributions to teachers' bad character

In this study, pupils were asked to state whether their failure in mathematics was due to teachers' bad behaviour/character and they gave the following responses, 59(53%) of them strongly agreed while 16 (14 %) of them agreed. Equally, 17(15%) disagreed while 20(18%) strongly disagreed to the statement. When pupils were asked during interviews to give reasons why they failed mathematics, the majority of them reported that, they failed because of the teachers' bad attitude and many of them saw those low grades that they obtained as being due to their teachers' wish.

The majority of pupils attributed their failure in mathematics to teacher causes that is bad character. This can be illuminated in the following response:

I was not happy with my grades, some teachers possibly add their personal criteria when grading. Anyway, it is acceptable as I am on the receiving end.

Another finding also emerged, other pupils were somewhat dissatisfied with the grades they received since they expected to do better. One of them said, *“I feel that sometimes grades depend on my luck and individual teachers.”* All the pupils interviewed also attributed low performance in mathematics to bad language of teachers during teaching, marking and giving of feedbacks. Common responses that were yielded included,

“Teacher wrote in my book you are un-teachable,” “you are a fool,” “you can’t go beyond this,” “it is better you go back to a lower grade in the primary school,” “all is rubbish, stop wasting my time.” One pupil gave her views as follows:

I could not get along well with my mathematics teachers because I found my mathematics teachers sarcastic or did not have enough patience.

Pupils’ attributions to mathematics being difficult

In this subcategory pupils were asked to state whether their failure was due to mathematic subject being difficulty. To this effect, it was revealed that, 78 (69%) strongly agreed while 12(11%) agreed. Equally, 12 (11%) disagreed while 10(9%) strongly disagreed.

During interviews pupils were also asked to state whether, they liked mathematics or not. The majority of the respondent reported that they do not like the subject. Asked why they did not like it, most of them talked about the nature of the subject being difficult. The majority of pupils’ attributions expressed negative feelings, painful experiences or unpleasant emotions towards learning mathematics as a subject. For example all the pupils indicated that mathematics involves, 'struggling', 'painful', 'frightening', and 'unpleasant' and 'cold'.

Pupils also attributed their causal of explanation of failure to misunderstanding the questions in the mathematics examinations. In addition the majority of them complained of not having enough time to finish mathematics examination. For example, a pupil at katozi during interviews had this to say:

It was not easy to understand the question that ECZ had set some questions were confusing, and hard to comprehend. This made me not to finish the examinations and I knew it, just from the beginning that I had failed mathematics again.

Another grade eight girl at Waitwika secondary revealed as follows:

Mathematics is like a puzzle it is very difficult I can't manage to pass even if I repeat even four times, my parents made me to go back to grade eight because of maths But inside me I don't think so if positive results will come.

Pupils' attribution to mathematics been difficult based on beliefs

The study also revealed that pupils' related mathematics to the belief that, the subject is for clever pupils. For example, one respondent stated that the subject is difficult and in her submission she echoed these words:

I don't have a natural talent for it and hmm, i think mathematics has been put across to me as something incredibly difficult and only very clever people can do it.

One male pupil explained his reason of viewing mathematics as a difficult subject.

He observed as follows:

I think it is because I am not good at it and my fellow pupils who are good at it, are intelligent and they like it.

Thus, this respondent tended to compare his ability with others and believed that he did not belong to the same group.

Pupils' attribution on content knowledge and understanding

The study also revealed that the content of mathematics was hard to understand. Pupils indicated that they battled with mathematics content. Common reports indicated that they understood less the content involved.

For example, one pupil who had been failing mathematics for three years indicated "... I sometimes wonder why the teacher talks about things we don't understand...."

In another pertinent instance, pupils insisted "... we are memorizing formulas we don't understand. When we ask the teacher ... he does not know as well. What can we do? Failing the subject."

However, educators involved, admitted to shortcomings they had with respect to certain sections of the content. An example here was one female teacher, who confessed as follows:

Truly speaking with simultaneous equation and Pythagoras theorem, when I touch that area iam dead ... (laughing) ... I get sickfor a week.

Pupils' attributions to syllabus and language of instruction

With respect to the non-completion of what is supposed to have been taught over a year due to fear of touching certain topics, pupils and their educators involved had differing attributions. The majority of pupils for example, generally attributed to that, a lot of time was spent teaching what they perceived their teachers knew best.

About this, one pupil from low density school said:

We spend most of the time learning factorization which is easy but what about coordinates and symmetry which are difficult? That is why we fail

With respect to the language of instruction, it was apparent from the interviews that pupils had problems. The majority of them complained and attributed that it was difficult to understand some of the concepts used in mathematics. In one way, the language of instruction — English in this case — is generally a problem on its own. Considering that mathematics use a language sometimes peculiar to the subject, overlaps in usage tend to affect pupils' understanding of the subject which results in pupils' passiveness.

Pupils' attributions to non motivating classroom environment

On whether pupil's failure was due to classroom environment notbeing motivating, the study revealed that, 53 (47%) strongly agreed while 47 (42%) agreed. Equally, 7(6%) disagreed while 5 (5%) strongly disagreed to the statement.

During face to face interviews the study also indicated other causes for pupils' poor performance in grade nine mathematics examinations. In this study pupils did not seem to identify shortcomings from their side. Blame was for example apportioned to teacher and other school educators, lack of textbooks, and even the school type.

Here a pupil, from a low density school pointed out; "*i do not see how i can be motivated, there are few textbooks at school ... nobody cares.*"

The insufficiency of mathematical textbooks to meet the pupils' needs was the attribution most frequently reported by the pupils for the low performance in mathematics examination in this subcategory. Furthermore the majority of the pupils reported other factors which included, over enrolment, inadequate infrastructure, few desks against overcrowded classes, not having enough teaching and learning aids. To this effect one grade nine repeater had this to say:

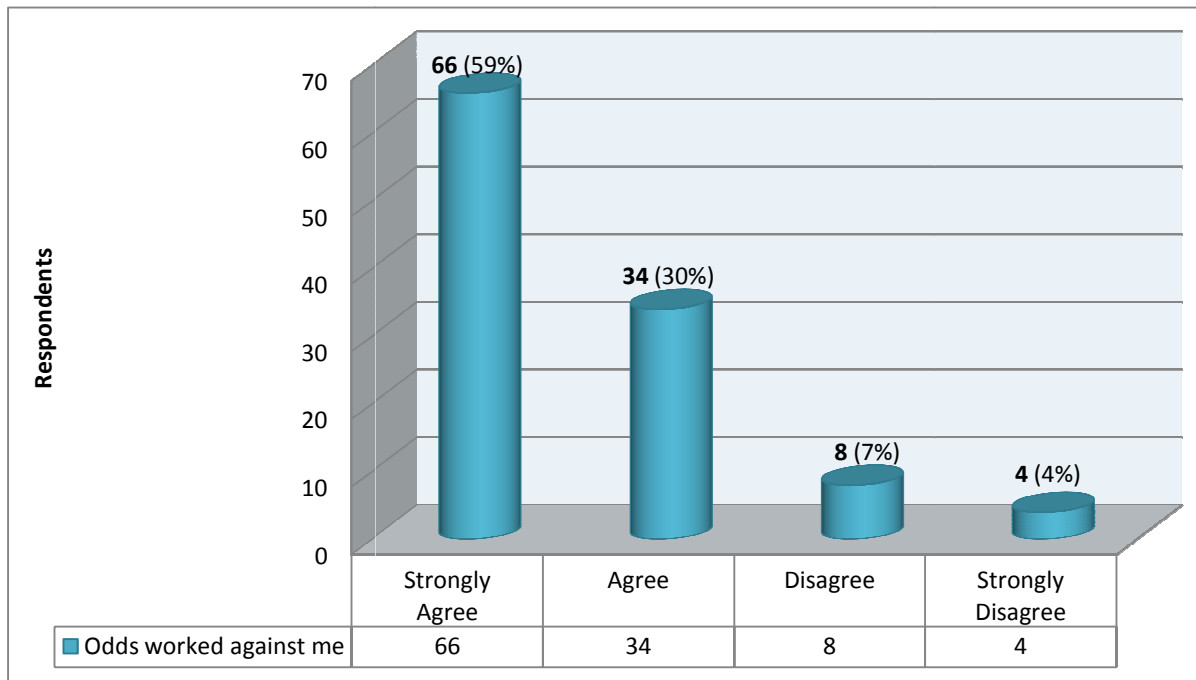
.....mmmmm Efyo naponene insamushi ba teacher tabale chonga ifyo indembelebwino, lyonse inganabikako amano mukutula indye fyonse ba teacher balembamofye ishiwi limo ukubonfya icilembelo icakashikaati nimbona. Inganalandako abati nombamba ulefwaya ncite shani mwalifulishamuno musukulu.....

(.....mmmmm Reason I failed mathematics was because my teacher never used to mark my work properly each time I put much effort in ensuring that I get almost everything right, the teacher would just write a big word in a red pen 'seen.' If I retaliate the teacher will say, what do you want me to do you are too many.....).

Pupils' attributions on the works of odds (misfortunes) on their performance

On whether the odds (bad omens which brings misfortune) worked against the pupils during the course of learning in the examination, the study revealed that, 66(59%) strongly agreed while 34 (30%) agreed. Equally, 8 (7%) disagreed, while 4 (4%) strongly disagreed to the statement as shown in figure 4.4 below.

Figure 4: Pupils' response as to whether the odds worked against their performance



Pupils during interviews gave mixed responses on whether the odds worked against their performance in mathematic examinations.

Despite obtaining a different scenario of information with the use of questionnaire, the majority of pupils attributed that the odds worked against them during the final grade nine mathematics examinations. As earlier stated, the face to face interview had mixed attributions, there was almost a tie in the submission of attributions, others agreed while others disagreed. The majority of pupils from low and medium density school submitted that the odds worked against them during the final grade nine mathematic examinations. In addition they further reported that, too much witchcraft in their families made them to obtain such low grades. Others indicated that family members were jealous of them hence they were praying for the bad luck to fall on them. Others indicated that other pupils (the Satanists) played tricks on them during the examinations.

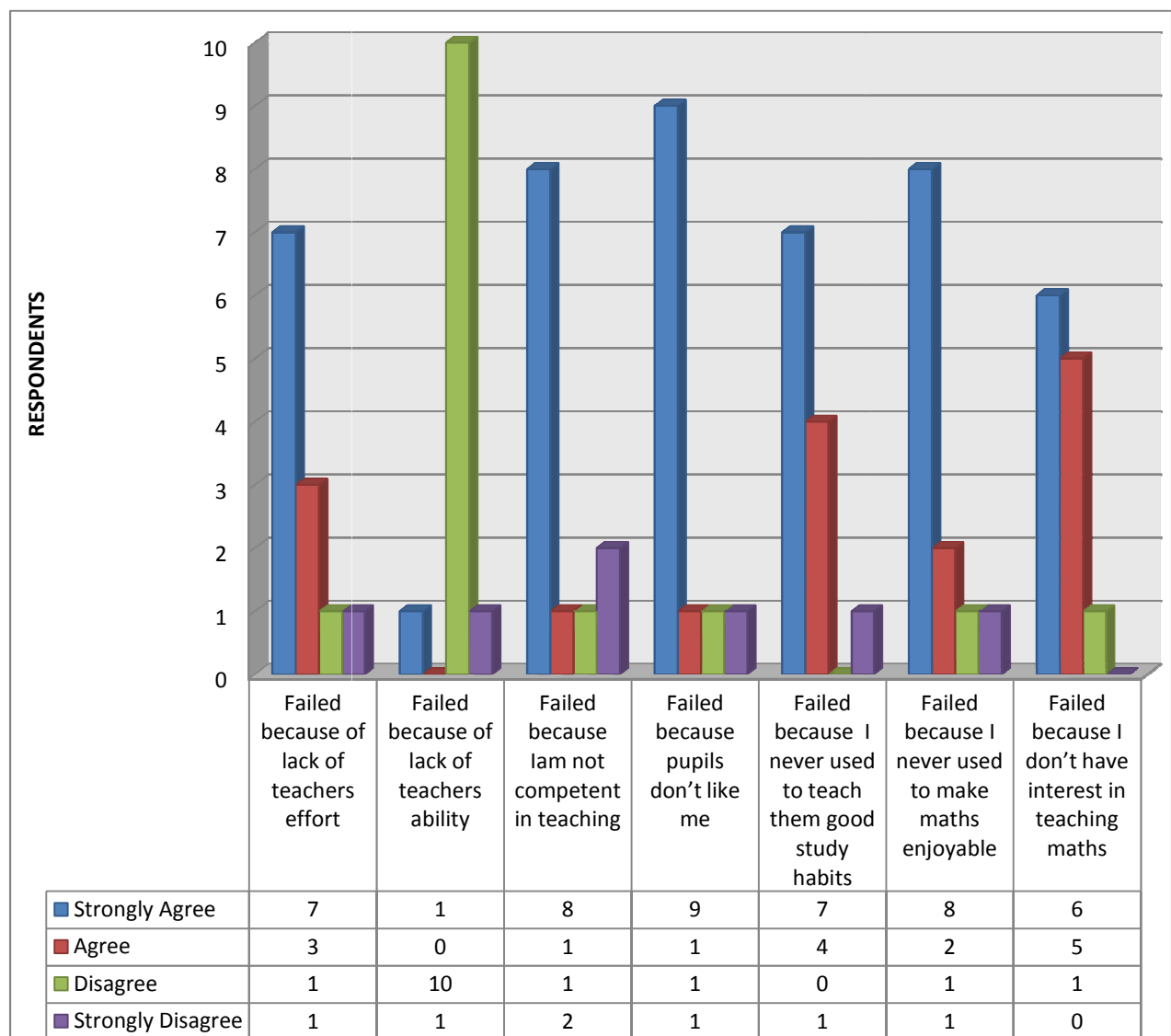
However the majority of pupils from high density or urban schools attributed that the odds did not work against them. They indicated that, it was not possible for other people to have negative effect on their academic performance. They further stated that the issue of witch craft and bad omen had nothing to do with their failure.

4.2 Teachers' attributions on the failure of grade nine pupils in public mathematics examinations.

4.2.1 Internal teacher's causal attributions

To establish internal teachers' causal attributions on the performance of pupils in public grade nine mathematics examinations, their attributions came out as shown in Figure 4.5 below.

Figure 5: Internal Teachers' causal attributions to pupils' performance (n=12)



Source:Field work 2015

Figure 4.6 above shows that 10 teachers attributed pupils' failure to internal factors as the information that was obtained indicated that teachers agreed that they did not put much effort in teaching mathematics; only 2 teachers disagreed to the statement. In addition, 11 teachers disagreed to the statement indicating that they did not have ability, only 1 agreed. 9 teachers attributed that they were not competent in teaching, while 3 of them disagreed. It was also noted that 10 teachers attributed that pupils who failed mathematics did not like the teacher, while 2 disagreed, 11 teachers also attributed that they never used to teach pupils good study habits while only 1 disagreed. Equally it was seen that 10 teachers agreed that they never used to make mathematics enjoyable, while only 2 disagreed. 11 teachers also attributed to that they did not have interest in teaching the subject, while only 1 disagreed to the statement. This indicates negative attitude towards teaching mathematics. Below are the additional teacher causal attributions which were obtained with the use of interviews and focus group discussions.

Teachers' attributions to lack of their effort

During interviews, mathematics heads of department submitted lack of preparation. Common responses that were submitted included, "They don't prepare adequately both when coming to teach and also preparing pupils during the examinations." It was also noted that teachers preferred attending to their business activities at the expense of teaching. Most head teachers talked about teachers' frequent absenteeism during teaching periods. Equally teachers also accepted and submitted that pupils failed the examination because of their inability to attend to all the periods in the week. However all educators were ready to change their negative attitude on one condition, that if pupils themselves developed positive thinking towards mathematics, positive results would be seen.

Teachers' attributions to lack of their ability

Asked whether pupils' failure was due to teachers not having natural ability to teach, all educators involved disagreed with the statement. However quantitative data contradicted with qualitative one in that it showed self enhancement. For example, teachers submitted common responses which included, "we know the subject content quite well, we have ability to deliver what is expected of us to the low achieving pupils, we have confidence in teaching mathematics." "It is true that most pupils lack ability not us," we strive to give good tasks in

mathematics but pupils opt to do other things and spend less time on mathematics tasks,” it was also reported that teachers give home works, but pupils do not attend to it as planned citing reasons of not knowing how to go about it. To this effect a teacher echoed the following:

It seems to me that mathematics is not difficulty, teachers have ability and have more confidence to teach maths, pupils just don't like mathematics, they get nervous when it is time for maths examination, they see it as a bit frightening and horrific subject, pupils got hang up because in the past, they always failed to beat the line, most of them used to fall below 30% during maths class activities, test and even in provincial mock examination so how do you expect them to do wonders during the national examinations? mmmmmm definitely they can't. us we strive.

Hence in this subcategory, it seems teachers lacked innate talent of attributing failure to themselves, they pointed out that, they were fine in terms of being confident in the subject despite low qualifications. They instead blamed the pupils for the failure and did not take the responsibility of the pupils' poor performance.

Teachers' attributions to making the teaching enjoyable

As to whether teachers used to make the teaching enjoyable, almost all the heads of mathematics department and their teachers confirmed that pupils failed because they never used to make mathematics enjoyable. Teachers submitted that, it was hard to motivate the pupils citing their own negative attitude. It was also noticed that teachers had no interest in teaching the subject. Most teachers cited bulkiness and boring of the subject. To this effect, one female teacher stated, “*I usually feel bored when teaching mathematics because it is full of difficult calculations.*”

Others critiqued the pace at which Mathematics was being taught from lower grades, and attributed that to the explanation that it was hard to make the subject enjoyable. They indicated that the problem was much in lower grades. To this effect, one teacher revealed as follows:

Some pupils lack a deep understanding of certain basic mathematics concepts like addition, subtractions and division, these were pushed through from lower grade. It

is not easy to make teaching enjoyable. This problem will not go away until this generation graduate.

Another teacher complained and echoed the following “*how can you make the teaching enjoyable when pupils always go into passiveness during teaching?*”

Other teachers who were under qualified critiqued the bulkiness of the subject and pointed out that it was not easy to make mathematics enjoyable. To this effect one of them narrated the following, “*the curriculum has too many topics to cover and it is hard for the pupils to truly master them. to make it a little simple we tend to rush through and skip some.*”

Teachers also reported that most of pupils who failed mathematics were not in good relationship with their teachers. Hence the teaching environments were horrible and were without proper social interactions. Finally, the study also revealed that, teachers attributed pupil’s failure in mathematics examinations to the fact that they never used to teach them good study habits.

Teachers’ attributions to their absenteeism

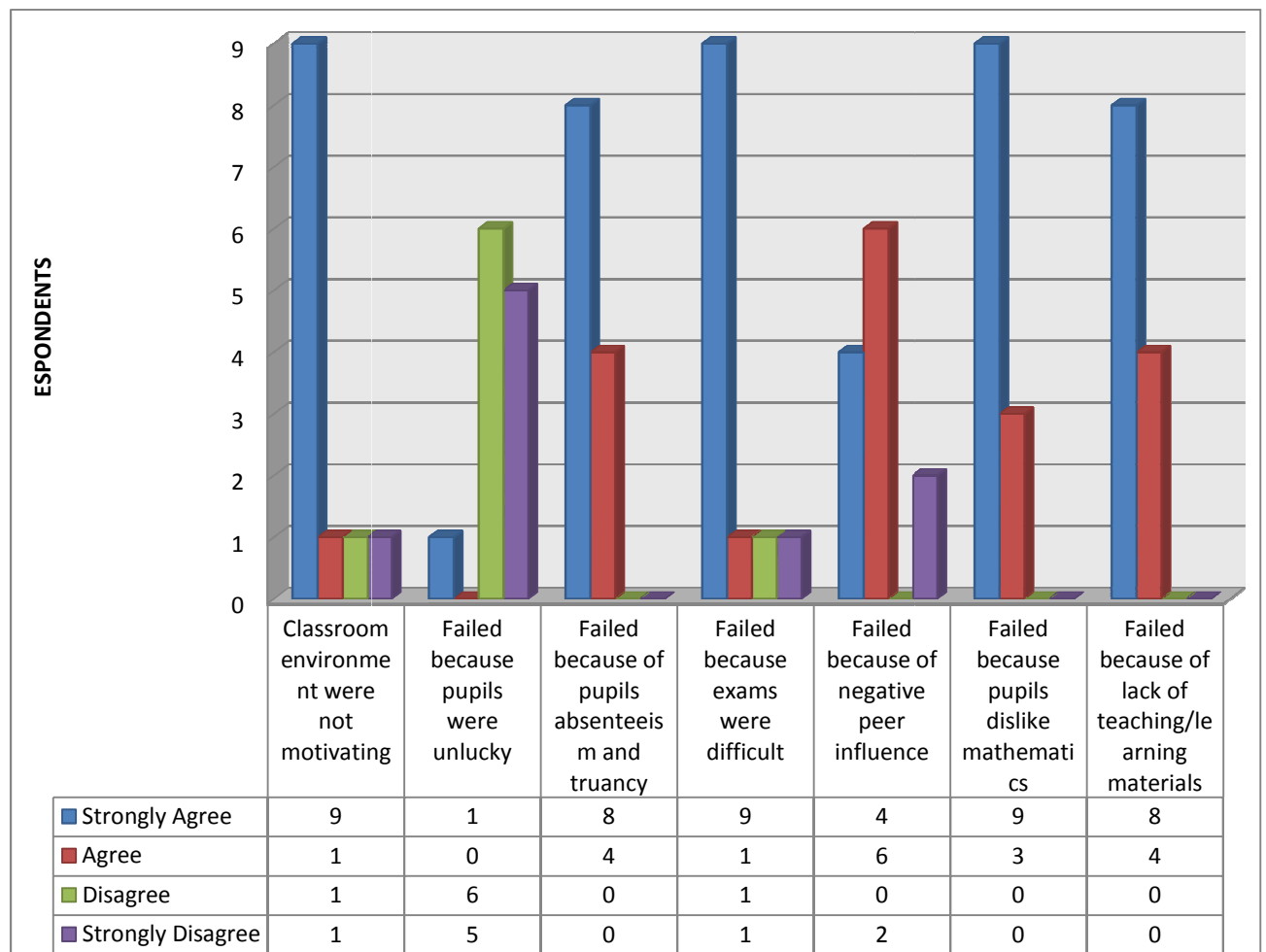
The study also revealed that almost all the teachers attributed their frequent absenteeism to the quest for more money as being the cause of pupils’ failure. The common responses indicate that most of them used to engage in business ventures and paying little attention to teaching. Further, the study revealed that most teachers were busy studying through distance learning in various learning institutions. It was also pointed out that most teachers lacked seriousness in lesson preparations. One of the HoDs (mathematics) laid blame on the teachers themselves and highlighted the following:

Lack of adequate preparation on the part of us teachers before coming to teach is a cause of poor performance in mathematics. The situation has been worsened up by inadequate supervision of teachers by the school authority as well as the Standards Officers. Us teachers in this district prefer doing business at the expense of teaching, some of us you see here are clearing agents who work with those business men and women who buy vehicles and bulk goods. Others are tax and minibuss drivers, hence we spend fewer hours at school. I don’t think pupils’ performance can be high. There is need to curb this negative vice in the district.

4.2.2 External teachers' causal attributions to the failure of grade nine pupils in public mathematics examinations

External teachers' causal attributions to the performance of pupils, was sought and the responses were as shown in figure 4.6 below.

Figure 6: External Teachers' causal attributions (n=12)



Source: Fieldwork, 2015.

Figure 4.7 shows that 10 out of 12 teachers attributed pupils' failure to physical cause that is, "classroom were not motivating" while 11 out of 12 denied bad luck as the causal factor for pupils failure in mathematics. In addition, all teachers attributed pupils' poor performance to pupils' "absenteeism and truancy," and 10 out of 12 felt that "the exams were too difficult." 10

teachers attributed pupils' failure to negative peer influence while all teachers attributed pupils' poor performance to dislike of the subject. All the teachers attributed low performance in mathematics to "lack of teaching/learning materials in schools." This indicates negative attitude on the part of teachers towards teaching mathematics as most of the aids can be improvised. During focus group discussion and teacher interviews, the study also revealed almost similar factors. Further, additional ones were obtained regarding poor performance of pupils in public examinations, the factors which included; negative peer influence, pupils' truancy and absenteeism, lack of teaching and learning aids, influence of school type, shortage of qualified teachers, extracurricular activities, pupils' negative attitude and that the classroom room was not supportive. These factors are presented in detail below.

Teachers' attributions to pupils' negative peer influence

Asked on whether pupils' low performance in mathematics was due to negative peer influence, all head teachers, deputy head teachers, mathematics teachers, HoD mathematics and guidance and counselling teachers gave similar responses from all the sampled schools. They reported that pupils' poor performance in mathematics was as a result of negative peer influence. Guidance and counselling teachers reported that most of the pupils especially the boys, who failed mathematics, were not keen in academic work. Most of them were reported to engage in illicit vices such as the use of alcohol, drugs and cigarettes.

The study also revealed that peers do not necessarily know exactly what grades (marks) their friends achieve or how much time they spend on homework in any given week. Thus, individual pupils may be able to give their peers a false impression of their academic performance and this led their fellow pupils to avoid academic pressure more easily. Second, it was reported that, other peers used to focus more on extracurricular activities than on effective classroom activities, that is, they focused more on antisocial behaviour outside school rather than on academic achievement. It was reported that pupils used to engage in dangerous vice in early secondary grades. For example, one teacher revealed as follows:

Social experimentation with cigarettes, alcohol, and other illicit substances generally begins in junior secondary schools.

Teachers' attribution of pupils' truancy and absenteeism

In this subcategory, teachers attributed pupils' failure in mathematics to pupils' truancy and absenteeism as among the causal factors of poor performance in mathematics. The study revealed that, all the twelve teachers attributed pupils' poor performance to pupils' absenteeism and truancy. Teachers reported that truancy and absenteeism led pupils to develop frustration. They indicated that when a pupil repeats a class for more than two or three years, they get tired and become frustrated. They further indicated that truancy and absenteeism led pupils into drug addiction, and that in most cases pupils who were fond of missing classes, there had Intelligent Quotient (IQ) below that of other pupils. And such pupils were scoring below average in mathematics because they used to miss all the mathematics lessons and other academic school programmes such as prep and tuition.

Other teachers reported that, many of their pupils ran away from schools while in many of the cases, the parents believed that they were attending school classes. While such pupils were away from school, they exercised freedom by engaging in a lot of juvenile delinquencies like fighting and drug abuse. Teachers also reported that the situation in almost all the schools was highly worrisome. It was further revealed that, the pupils who were fond of missing classes were not benefitting from the various programmes schools used to offer. It had been established that absenteeism and truancy were cogs in the wheel of teaching and learning. Teachers and other educators revealed that they were aware of the negative effect of pupils' truancy and absenteeism. However, they reported that, it was not an easy task to curb the bad vices in school. Others teachers indicated that pupils, who were fond of missing mathematics periods, were doing so without having any second thought about it and this eventually lured them into criminal activities such as stealing, smoking, narcotics and many more.

Teachers' attributions to teaching and learning aids

Teachers were asked whether the school was fully equipped with material resources to teach mathematics effectively. The study revealed that schools were not fully equipped with the teaching aids. When asked to name the teaching and learning aids that they currently had in schools, all the heads of mathematics departments and their teachers mentioned mathematics teacher's guide, pupils text books and syllabuses. When asked on whether the non availability of

teaching and learning resources affected the performance of pupils in mathematics, the educator involved gave multiple responses, which included; “it is quite difficult to teach mathematics without a teacher’s guide,” “it is not easy to formulate objectives using pupils’ text book only,” “teaching out of syllabus does not allow proper preparing of pupils’ in examinations,” and “a syllabus points out what to teach.”

In general, teachers believed that teaching and learning aids facilitate teaching, but indicated that in some lessons they could do better without using the teaching aids. Other teachers reported that teaching aids are not effective if they are not properly chosen and if proper preparation is not done. The majority of the teachers maintained that the aids were useful and vital in cases where pupils did not understand certain concepts. For example, shapes would help pupils to associate or compare the isosceles triangles, equal angles using triangles and radius in circumferences using circles. It was revealed that an angle is not something that pupils can understand through spoken words from the teacher only, they learn better if the teachers exposed them to real situations. The study pointed out that, teachers sometimes lacked the skills and patience to guide the pupils through the discussion and exploration processes, even though appropriate teaching aids were being used. The study revealed that educators shared a similar view with their pupils on inadequacy of aids.

To this effect, a teacher from a rural low density school stated as follows:

With mathematics you cannot just teach without a pupils’ and teacher’s guide we don’t have enough pupils’ text books, I can go with you and open the mathematics department store room, it is empty.

Teachers’ attributions to influences of school type

In this study, teachers also attributed pupils’ failure to the types of schools that are in the districts. They pointed out that most of the schools in Nakonde are public run schools. They further indicated that in most public schools there is laziness. The majority of the teachers pointed out that in grant aided and private owned schools, performance is in most cases high in mathematics. In their attributions, teachers indicated that, the types of school ownership

did matter with regard to performance of pupils in mathematics. To this effect one teacher commented as follows:

Supervision in private-owned school is effective that is why they have better academic performance in mathematics than us.

Other common responses that were submitted included, insufficient funding in government schools and that school environments are in most cases not good compared to private ones. In government schools a lot of subject are taught by unqualified teachers, teachers prepare less before they get in a class, overcrowding of classes is common and teacher -pupil absenteeism is entertained, a thing which does not exist in private and grand aided schools. One teacher also narrated as follows:

In Zambia, it is the general opinion of people that private-owned schools are better in terms of the availability of human capital and physical facilities and, consequently, pupils' performance in such schools are better than those in the public-owned schools. This situation has made many parents to enrol their children in private secondary schools. Experience has also shown that more pupils from private-owned schools secured admission in tertiary institution such as University of Zambia (UNZA) and Copper Belt University (CBU).

Asked on whether over-enrolment (over crowdedness) contributed to low performance in mathematics. The study revealed that, all teachers attributed pupils' low performance in mathematics to over-enrolment in classes especially in township schools. Teachers reported that pupils were sixty, seventy, eighty and/or ninety in one class. It was also submitted that when it comes to assessment, the teachers were only giving two or three questions at the same time because they were failing to mark tasks given during lesson time. The entire interviewed teachers indicated that, it was difficult to teach in an over-crowded classroom

Asked on whether engaging pupils in too many extracurricular activities made pupils to perform low in public mathematics examination, teachers' responses were that too much social outings and other extracurricular activities negatively influenced mathematics results. Most of the respondents reported that, term two was characterised by all sorts of extracurricular events. The

events included sports games such as football, volleyball, netball, playing of chess and draft, dramas and unnecessary educational field trips. A deputy head teacher at one of the schools narrated as follows:

They is over engagement of pupils in extracurricular activities neglecting academic work, to make matter worse, pupils shun extra lesson in mathematics, when told to come in the evening for remedial work you will sometimes see non.

Teachers' attributions to shortage of qualified teachers

Both teachers and pupils had similar views on the shortage of qualified teachers. During the interview teachers indicated that the low performance of pupils in mathematics examinations could be due to shortage of qualified teachers, unexpected teacher transfers and teacher's periods being overload. This is evidenced by the comments on teacher made as follows:

Inadequate teachers coupled with regular transfers of teachers out of a school and sometimes not replacing them, have greatly contributed to poor performance in mathematics in most schools in Nakonde,.....it's tough going sir..... for example our only qualified mathematics teacher was transferred to Mwenzo Girls secondary school and up to now nothing has been done by the higher offices. As at now the teacher who is handling this subject is not even trained in this field and to make things worse, the same teacher has many mathematics periods to teach.”

Additionally, a head of department who had a diploma in mathematics further attributed the issue to lack of competent teachers as being the cause of poor academic performance. To this effect he narrated the following:

Most of these incompetent teachers rush to complete topics, they don't care whether pupils have grasped the concepts or not and in these large class sizes, it becomes a night mare for most of the pupils.

One deputy head teacher blamed the teachers for not covering the syllabus. Additionally, some head teachers and deputy head teachers blamed standard officers and the DEBS for failing to put up string measure for erring teachers. To this effect the head teacher gave this comment:

There is no teacher accountability for failing to cover all material. All I know is, pupils really learn less, study less, and when they come in the exam room, they get shocked to find an exam full of new material they did not cover with their teachers. As a result, most of these pupils tend to give up. Like any rational person, when they know that they are doomed to fail, they decide to put their effort into getting higher scores in other subjects and I don't think this is laziness on the pupils' part. I think it is because they have learned that no matter what they do, they will fail because of the negative teachers' behaviour. At times teachers rush through or just neglect pupils, thinking that whatever they will find in the exam, it will be up to them. Until teachers face consequences for failing to teach the required material, the pupils will keep failing the exams. There is a consequence for the pupil failing, but the teachers, no consequences.

Teachers' attributions to non-completion of the syllabus

With respect to the non-completion of what is supposed to have been taught over a year, pupils and their teachers involved had attributions which were tallying. All teachers for example generally attributed the case to the observation that a lot of time was spent teaching what they believed they knew best. About this, one deputy head from low density school said the following:

Pupils spend most of the time learning factorization which is easy but what about geometry which is difficult? That is why they do little of other topics.

Also, teachers were seen to come late to class which over long periods meant a lot of lost time. In this case one head teacher corroborated that, "everyday pupils' sit for five minutes waiting for the mathematics teacher ... how many minutes a month are waste?" Teachers and other educators at school level, on the other hand, identified activities like sports and breaks in teaching as time consuming and impeding. Almost all the educators mentioned the fact that they generally did not have enough time to complete the syllabus content.

Teachers' attribution to pupils' negative attitude

Teachers reported that pupils disliked the subject. Teachers attributed these negative attitudes as being the cause for the poor performance in mathematics in grade nine public examinations. The majority of teachers indicated that pupils disliked the subject and that they felt that mathematics was naturally hard to comprehend. The researcher probed further on why pupils disliked mathematics, the most common response was not being good at mathematics from lower grades.

Asked on how their attitude was, toward learning mathematics, teachers gave multiple responses which included; "pupils usually do not enjoy studying mathematics at this school," "Mathematics is not enjoyable and not interesting to them," "pupils feel nervous, confused, and uncomfortable towards mathematics in general." Other reasons given were: "We always have confrontations with those pupils who state that they don't want to take any more mathematics. Pupils prefer doing other subject than mathematics." "Pupils are not interested in learning more information in mathematics because they don't love it," "Pupils always make comments that mathematics is dull and boring and one of the most hated subjects." To this effect one male teacher revealed as follows:

In my opinion, the ability of innate intelligence is very important. A pupil who has it can understand and solve problems in mathematics quickly. If she/he does not like mathematics, this person cannot be successful just like our pupils."

Also a female teacher had this to say:

In order to succeed in mathematics, a pupil must first like this subject. Some are congenitally interested in mathematics, while others are late to become interested in it. At this point, teachers have great responsibilities, because until now, I have seen that pupils do not like mathematics, they also do not like their mathematics teachers."

In addition, a head teacher at one of the secondary schools defended the teachers and attributed pupils' failure in mathematics examination to a number of causes, he revealed as follows:

Some pupils don't study for it, but when you see the results of other subjects you will see that they have much higher pass rates than mathematics. Some of the reasons for the difference are, lack of interest, negative attitude in mathematics, putting more effort to other subjects and bad study habits. Pupils give less attention to study the subject claiming that it is complicated. Teachers aren't at fault because they try their best to teach it. It is an enormous task for teachers to change the way of thinking of pupils, to start believing that actually mathematics is not difficult.

All the teachers from urban high density school attributed pupils' low performance to negative attitude. They reported that pupils' prefer to engage into economic activities at the expense of school work. To this effect one male teacher had this to say:

Most of the pupils start crossing the border at a tender age owing to the border being porous. If you happen to go across right now you will see young boys carrying heavy luggage just for very small amount of money, the act has also led to an increase in pupils' absenteeism. It is shame on those who engage in them. Most of these pupils come from poverty-stricken families and surprisingly their parents also encourage them to do so, such pupils opt for money than putting much effort in academic tasks.

Other teachers from high and medium density schools attributed low performance in mathematics examinations to pupils' lack of effort and interest due to misuse of modern technology. In this regard one female teacher had this to say,

Pupils devote almost all their time watching videos, television, playing games on phones and laptops. When it comes to attending social functions, they come in number. However, when it comes to extra lessons after classes, very few attend. This implies that they neglect academic work, a situation which compels them not to put much effort in learning not only mathematics, but also other subjects.

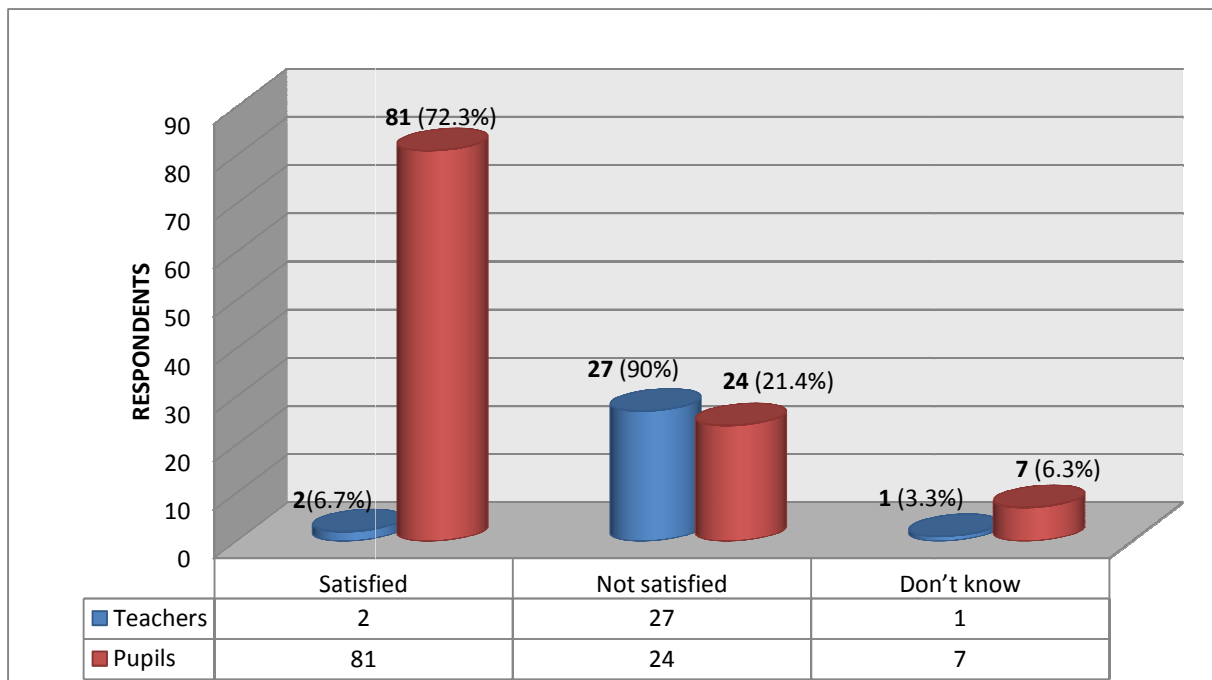
4.3 How attributions of failure affect future performance in public grade nine mathematics examinations

As regards to how attributions to failure affects the educational outcomes of pupils, head teachers, deputy head teachers, HoD mathematics, mathematics teachers and guidance and counselling teachers and pupils, gave the responses presented in this subsection.

4.3.1 Effects due to locus of control and stability

Teachers and pupils were asked whether they were satisfied with low grades that pupils obtained in their previous mathematics final examinations results, result indicated that the majority of pupils were more satisfied with the scores, as 81 (72.3%) indicated that they were satisfied with the grade obtained, 24 (21.4%) were not satisfied while 7 (6.3%), did not know what to say. Equally, 2 (6.7%) indicated that they were satisfied with the grade pupils obtained, 27 (90%) were not satisfied while 1 (3.3%), did not know what to say as shown in figure 4.7 below:

Figure 7: Whether educators and pupils were satisfied with pupil’s result

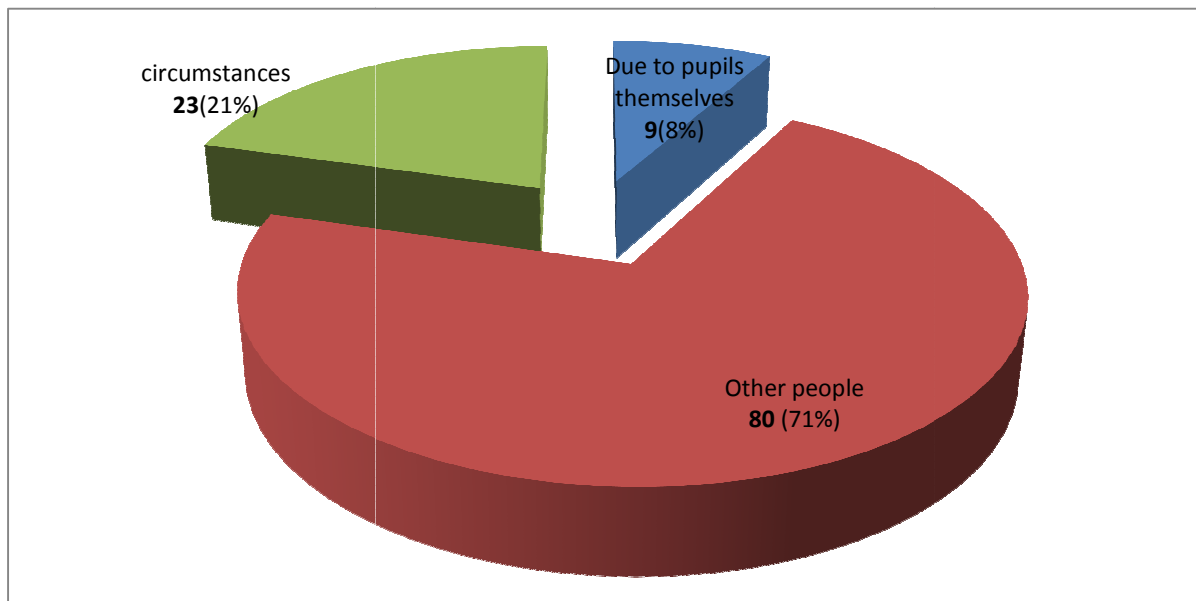


During interviews, pupils reported that in lower grades they used to feel guilty when they receive negative outcome. Asked on how they were receiving negative outcomes at that particular time,

results showed a different scenario. They reported that they were comfortable with the results they used to obtain during the end of term tests and they felt that such results were due to being unlucky and unfair grading meaning pupils laid blame on external causes. Additionally the majority of the teachers gave the common responses which included: “unhappy,” “helplessness,” “un-satisfaction,” “not being proud,” “low confidence in the pupils who failed,” “anger, regret, frustration and disappointment.” Others indicated: “self-blame, shame, guilt, surprise, relief and grateful.”

Asked whether the cause of failure was because of pupils themselves or other people or circumstances, the study revealed that 80 (71%) of the total respondents attributed causes of failure to other people, while 23 (21%) attributed causes of their failure to circumstances and only 9 (8%) attributed causes of failure to pupils themselves as shown below in figure 4.8.

Figure 8: Whether pupils’ failure was due to pupils themselves or other people or circumstances



Further the pupils were asked to state what made them attribute causes of failure to other people, they gave multiple responses, the common ones being, teachers’ negative attitude towards the subject, lost interest in mathematics because teachers were missing during the periods, teachers giving too many tasks, while they sit in the staff rooms and chat while others were reading news

paper, while in classes noise was being made. To this effect one pupil gave the following comment:

My mathematics background was okay up until grade eight, the difficulties arose when I began to associate with my fellow peers who were interested more in extracurricular activities than in academic work. To make things worse most teachers did not play a major role in preparing us for the exam. The mathematics teachers who used to teach us last year did not care all that much. As a result, I did not care either. I felt as if I was just wasting time and that I needed more time for sporting..... even this year I feel the same way.

The majority of pupils also blamed the negative guidance from friends and other valuable people in their lives. To this effect, a grade nine pupil having already failed mathematics twice converse in an upbeat manner about the subject and said the following:

My parents and friends told me that, mathematics is not the only subject which is very useful in the real world.” and from then on I often do not care whether I get math problems correct or incorrect. Mathematics is more something I have to do than something I choose to do and I often think of other things while attempting to solve math problems.

Other pupils attributed failure to lack of teaching and learning aids, poor teaching methods and that they felt that, if mathematics was being taught with all the required aids, positive results could be yielded. Pupils believed that just hearing about a mathematics concept is usually not enough when preparing for examinations and that it is necessary to repeatedly practice a skill for mastery for some to do well in examinations. Most pupils considered mathematics to be a very theoretical subject, and that they did not believe that their path in life would require making use of very much of mathematics. Hence, majority reported that they switched off exhibiting more effort in mathematics and indicated that failure was something unavoidable.

The study further indicated that they had been always memorizing mathematical concepts, and that, they were not seeing the big picture where mathematics is concerned but on a good note pupils reported that they carried on to learn mathematics despite negative outcomes. The pupils

believed that primary school played a negative role in the struggle with mathematics. To this effect, one female pupil commented; *“I was misjudged and placed in a lower level group and due to overcrowding my mind was completely switch off.”*

As a result, the pupil believed, she was ill prepared for secondary school mathematics and subsequently for examinations as well and stated that there was nothing that she could do at that moment. Equally during interviews teachers felt that failure was unavoidable and that they laid blame on pupils but also blamed their own characteristics.

4.3.2 Effects due to controllability and stability

Asked whether the cause of failure was under pupils'/teachers' control or out of their control, 93 (83%) of the pupils indicated that their failure was out of their control while 19 (17%) attributed their failure to being under their control. Those who attributed to their control further indicated that there was nothing that they could do to change the situation following several attempts during class activities and even in examinations. In this study it seems pupils had low expectation pertaining mathematics performance. To this effect one pupil had this to say:

I think my mathematics background was never good I have always received tutoring since the beginning of grade eight but what I always get is bad grades. I feel as though I will never get good grades and I think, I don't need mathematics any more, I become bored easily when it's time for mathematics.

Other pupils expressed anxiety problems when dealing with mathematics, and stated that uncertainty was the norm for them when attempting to solve mathematics problems. One pupil narrated as follows

I see no reason to do mathematics without a calculator, and I believe I can perform satisfactorily when allowed to use a calculator to solve mathematics problems. But one strange thing is that examiners do not allow us to use calculators in the examination and for this I don't even think that I will ever perform well in this subject, the best way is just to ignore it.”

During interviews, most pupils displayed negative attitudes toward mathematics as they showed relatively low self-efficacy beliefs. Their attributions for achievement were less desirable, the attitudes and beliefs about mathematics were discouraging them from developing proper study habits and problem-solving strategies. In this, one pupil narrated; *“I often do not care whether I get math problems correct or incorrect” and mathematics is more of something I have to do than something I choose to do.*” Another pupil said *“I often think of other things while attempting to solve math problems.”*

Teachers’ responses include, teachers felt that the poor performance of pupils could not be under control. A common comment that was submitted was that, “it is hard to change pupils’ negative perception towards the subject.” However during the focus group discussion, a HoD mathematic gave the following comment:

It is equally disturbing to hear a pupil attribute failure to lack of natural ability. This type of attribution seems to doom the pupil to limited efforts, the pupil is likely not to put much effort towards given tasks in mathematic. Even if the subject is easy to handle the pupil will just opt to fail because of his or her perceived inability in mathematics.

Teachers and pupils were also asked to state the consequences of negative attributions to mathematic performance in grade nine public examinations. The majority of the respondents felt that negative attribution has a deteriorating effect on academic performance. Pupils reported that, they contribute to viewing mathematics as a very difficult subject; others also reported that it leads to low self esteem as it take away all the effort that a person is required to expedite.

Common response among teachers included; low self-esteem, low self-concept, low self- image or self- motivation. Teachers also revealed that negative attributions led to low expectations of pupils; demotivate pupils intrinsically; induces laziness on the part of pupils and the teacher; encourages self-attribution biasness and laying blames on external causes.

In additions, the majority of the respondents reported that attribution of failure on a subject drives pupils to indulge in examination malpractices, pupils developed a notion that the only way

to better their grade was to engage themselves in hunting for leakages. A guidance and counselling teacher gave the following sentiments:

When pupils attribute failure to effort (an external attribution) most of such pupils opt to dubious means of performing well. The fact that poor performance contributes significantly to examination malpractice cases now prevalent in public examinations cannot be overemphasized; as fear of failure lures candidates into adopting mal-adaptive strategies in examinations.

Equally other pupils reported that, repeated failure had made them not to exhibit much effort in studying mathematics. They portrayed hate, anger and disappointment towards the subjects, as one pupil at Waitwika secondary school said:

I become reluctant to learn mathematics following failed experiences and also due to significant psychological and social barriers that lead to shame, anger and low self esteem. I hated mathematics for good, no wonder I always fail, either at the end of term tests or even in examinations. Failure in mathematics has become null and void to me.

The majority of school administrators submitted that, failure is characterised with stigma, school drop outs and erotic acts. One HoD during the FGD narrated as follows:

Pupils who do not do well in public examinations, especially in Mathematics are in most cases stigmatized as failures and therefore only opt to drop out of school, others because of being stigmatized resorts to suicidal acts like that pupil who claimed his life in Eastern province after he learnt that he had failed the grade nine examination. It is not surprising then that many candidates resit the examinations with the desire to obtain credit in Mathematics and mend the negative comments from the society.

4.3.3 Attribution Effects due to teacher expectations

Teachers were asked on the expectations that they had on those pupils who failed mathematics in the previous examinations. Results show that teacher's expectations on the pupils who failed

mathematics were low, the majority of the teachers reported that, pupils lacked ability and that it was very difficult for them to work well in the coming examinations. Most of the teachers indicated that their negative attitude towards the subject was a sign enough that in the next examinations the performance would also be minimal.

The majority of the teachers reported that their pupils who failed the examinations were considered to be low achievers and that it would be impossible to change the status quo. One teacher during an interview said the following:

I always feel pity for these perpetual low achievers when I see their results. Most of them come from very poor families, how I wish there was a possibility of writing exams for them.

The study further reported that teachers' low expectations on the pupils influenced them to concentrate less on the named low achievers, and that pupils were given funny names such as hard crackers, dull, watery brains, idiots, low achievers, imbecile and many more.

4.3.4 Attributions Effects due to negative Feedbacks

When it comes to giving feedback almost all the teachers agreed that because of their minimal performance, they use negative comments such as:

Poor work, poor boy/girl, and very bad work, can't go beyond this, foolish, rubbish work, unteachable boy/girl. In this case pupils gave common attributions which included, "teachers accept their response that are contrary to the answer during oral questioning," "reject their response in the negative way and call on someone else who does well to answer the question," "have less respect for them as individuals with diverse needs and interest," "treat them with less warmth, fail to praise their strong effort but criticize their weak efforts," "provide them with limited opportunities to respond to a question," "assign them limited time to complete their tasks."

To this effect one pupil said the following:

The teacher fired dangerous verbal attacks on me. You are not mathematics material. I do not even know where I should start from if I am to provide any remediation. People like you should just drop mathematics. The

damage had been done. I felt abused so I slid out of the office without uttering a word. From that day I developed an ant-math feeling and all the interest that I had for the subject vanished. Had it not been for that particular incident may be I could still be comfortable with the most feared subject.

Basing on the above findings, there is no doubt that, mathematics is taught by teachers with negative attitude in most schools in Nakonde District. There is also a wrong presumption by such teachers that since the subject is simple for them, it is also simple for everyone. Many pupils end up contending that they are not good enough for mathematics when in fact they are fed on wrong mathematical approaches.

4.3.5 Attribution effects due to past history

Teachers reported that teachers are influenced by pupils' past academic history as the majority of the teachers during interviews and FGD reported. Common comments reported included, pupils' performance in mathematics does not change; if it means changing, it changes very little; each time when the feedback is given those who perform low always go down meaning that even in the examination the performance will not change positively; low achievers in mathematics are always low achievers; it is hard for these pupils to perform well because they have been failing. Some have failed four times and their performance is low even this time.

Further the study reported that the majority of the pupils felt that mathematics was a difficult subject and that no matter how hard they try, their performance would not match those who perform well and most of the pupils indicated that they have less control over a low performance in mathematics. They based their report on repeated failure they had been experiencing all along. For example during the interview a pupil who has repeated twice in grade nine commented the following:

it not easy sir, no matter how hard I study mathematics I always get low marks in the test as well as in the examinations. It seems I will never ever get a good grade in mathematics.

4.6 Summary

This chapter has presented the findings of the study based on the study objectives and questions. It started by presenting pupils' internal and external causal attributions of failure in public mathematics examinations. The internal causal attribution which were revealed included, lack of interest/effort, lack of natural ability, inability to study, pupils laziness, pupils' absenteeism, while the external ones includes, teachers being incompetent owing to there been under qualified, poor teaching methods, subject being difficult, classroom environment not motivating and also pupils felt that the odds worked against them.

Equally, teachers' causal attributions were presented which included lack of their effort, ability and interest in teaching mathematics. It further deals with others causes such as competence in teaching mathematics, attributions to whether teachers like the subject or not, good study habits and making the subject enjoyable. While, teachers' external causal attributions included; non motivating environment, influences of school type and peer influence. It further deals with others attributions which incorporate; pupils being unlucky, pupil's absenteeism, mathematics examination being difficult, pupils not liking the subject and lack of teaching/learning materials. The chapter also presents effect of attribution of failure which included; effects due to locus of control, stability and controllability, effects on teachers' expectations, attributions to negative feedbacks and attributions based on past academic history of pupils.

CHAPTER FIVE

DISCUSSION

5.0 Overview

This chapter discusses the findings of the study in line with the objectives which were to; ascertain pupils' causal attributions to their failure in grade nine public mathematics examinations; establish teachers' causal attributions to the failure of grade nine pupils in public mathematics examinations and determine how attributions of failure affects future performance in public grade nine mathematics examinations.

5.1 Pupils' causal attributions to their failure in grade nine public mathematics examinations

This section discusses both internal and external pupils' causal attributions to their failure in grade nine public mathematics examinations.

5.1.1 Pupils' internal causal attributions

The internal causal attributions which have been discussed in this subcategory include, lack of interest/effort, lack of natural ability, inability to study, pupils laziness and pupils absenteeism.

Attributions on lack of interest/effort in mathematics

In this study, pupils' attributed mathematics failure to lack of interest as one of the factors for failing public mathematics examinations. Pupils disliked the subject because of their poor background in mathematics, a situation which forced them to hate it. Pupils believed that mathematics was naturally hard to learn and comprehend. They seemed to feel inadequate and this was presumably related to their experiences of repeated failure in school mathematics. In this regard, the present findings are in line with the study conducted by Tachie and Chireshe (2013) who indicated that pupils attributed their failure to the belief that mathematics is by nature difficult and there was nothing they could do to pass. Additionally, pupils' attitude was not positive towards learning mathematics owing to the multiple attributions which they submitted. This was also confirmed by the teachers who attributed the same portrayed negative attitude as

one of the contributing factor to pupils' low performance. In their attributions pupils revealed that "mathematics is not enjoyable and not interesting to them," Others indicated that there would rather not take any more mathematics than they have to. They were of the view that other subjects like English were more important than mathematics. Others indicated that, they were not interested in learning more information in mathematics. They further argued that mathematics was dull and boring. In this regard, pupils attributed their failure to internal stable and uncontrollable factors though they showed some degree of self serving biasness by not accepting to lay the blame on themselves. They attributed the poor performance to the teachers who they thought made the subject hard owing to their negative characteristics. To a larger extent this finding agrees with Ojo and Wale (2011) and Mkumbo and Amani (2012) who found that pupils' attributed failure in mathematic to lack of interest. This may imply that they blamed themselves for the failure.

The present study also showed that pupils' negative attitude towards the subject contributed much to loss of their interest in mathematics. They used to expedite less effort because of their bad characteristics and their inability to put their knowledge into practice. As Lei and Qin (2009:46) points out, *effort is very important in learning, without which pupils could achieve nothing*. The findings are congruent with other research studies (for example Bempechat, 1999; & Zhao, 1991) who found that negative feelings in learning may decrease pupils' motivation and finally make them unsuccessful. Therefore, one way of curbing high failure rate in mathematics is to change pupils' beliefs and their negative attributions.

Another factor on pupils' attribution pattern to low mathematics performance was found to depend significantly on the occupation that they preferred to enter after leaving school. Most pupils preferred occupations which included, police, ward-counsellor, village headman, driver, road maintainer officer and security guards. Attributions to occupations influenced pupils develop negative attitude towards the subject as they felt that mathematics was not a required subject for such occupations. To support this contention, research results by Nenty (2010) have indicated that pupils who preferred engineering and medicine occupations attributed their good performance to mathematics, while those who preferred law and force-related occupations attributed their low performance to task difficulty. Mathematics is not necessarily a required subject for law and force-related primary occupations. While this may likely explain the

observed attributional trend, it is interesting to note that pupils did not like occupations such as those of science and mathematics related occupations, a situation which seems contributed much to the loss of interest in the subject. Thus, those who preferred occupation like police tended to attribute their performance to an external but stable factor. The study also gave a picture of the nature of counselling pupils receive from schools and that schools are required to put much effort in providing guidance and counselling services that centers on guiding pupils on the type of occupation that is required to be taken. It was revealed during FGD that counselling services were not adequately provided in schools. Hence, it is important that guidance and counselling services are intensified, school counsellors must note that, mathematics is required at all cost. Research has shown that mathematics is a subject that prepares the pupils for the future tasks, irrespective of which career path they choose to follow (Davis & Hersh, 2012). This requires that all pupils, not just only those aspiring scientific career, require being mathematically literate.

Attributions to lack of natural ability

In terms of natural ability, the study revealed that pupils' low performance in mathematics was associated with natural inabilities. Pupils gave multiple responses which included attribution such as learning mathematics is "impossible", "too much to take in and retain". A few others gave their attributions of learning of mathematics in the form of metaphors such as; learning mathematics is like "going down a black hole that you can't get out of". The findings are in line with Savas and Ilyas (2010) who found that, pupils' causal attributions were based on the belief that mathematics was difficult due to their previous experiences.

Based on the findings, it is worthwhile to state that pupils attributed their failure in mathematics to internal stable uncontrollable factor, a situation which appears to be problematic. Weiner (1986) suggests that ascribing negative outcomes to lack of ability provides individuals with low possibility of future success. The findings of the current study supported the findings of Gobel and Mori (2007), which also uncovered a connection between internal attributes and attributions for failure. In Gobel and Mori's study, it was found that, pupils had the tendency to blame oneself for failures (rather than blame external forces), they believed that they had low ability in performing well in academic work. Similarly the study is also in line with Ozmentes (2012) who also got similar results in his study on quantitative analysis from the perspective of

attributions theory. Pupils in elementary music education attributed failure to lack of ability, negative behaviour of their classmate and not studying the subject.

Pupil's attributions to lack of study

Pupils also attributed their low performance in mathematics to not studying mathematics despite blaming teachers for poor guidance. They submitted that they had failed because of not studying and practicing the subjects frequently pupils were giving up easily because they thought that studying mathematics was not worthwhile. In addition, pupils attributed that not attending mathematics lessons regularly contributed to poor performance in mathematics examination. Lack of studying was also confirmed by the teachers as one of the contributing factor to low performance. This finding is congruent with the findings of the previous study by Chireshe and Tachie (2013) who found that, pupils blamed themselves for negative attitude towards mathematics. One cannot perform well in a subject he or she is not interested in, hence lack of interest resulted in the pupils not putting any effort in learning and of course in devoting much effort in the preparation for mathematics examination. The motivation for the subject would obviously be low. Pupils with a positive attitude towards mathematics have been found to perform better in mathematics (Chireshe & Tachie 2013).

The present study further established that pupils' low performance in mathematics was due to laziness in learning mathematics. The majority of the pupils agreed to the statement that their low grades were caused by laziness. Despite taking on the blame, the pupils also reported that teachers' bad characteristics contributed greatly towards not putting much effort in studying the subject. To a large extent, the findings may also be in line with the conclusion made by Manzoni (1995) in her study on 'to what students attribute their academic success and failure which shows that giving up, inadequate learning and laziness caused pupils' low performance. However, it seems pupils' in the present study showed self-enhancing tendencies by laying blame on external causal factors, which is teachers' bad characteristics. Recent work has considered the critical role that self-enhancing responses play in failed experiences (Jordan & Audia, 2012) noting that the determination of an outcome as failure is often subjective. While not disputing this point, it can be noted that individuals may accept the outcome as a failure and still engage in differential attributions, providing an alternate subjective response to failure. In other words, a pupil may

accept the failure but blame it on an external cause. To some extent the present study contradicts with the findings of a previous study by (Gobel and Mori(2007) with Japanese university students. In that study, it was found that the participants did not show the self-enhancement or self-protective tendencies that are widely recognized in cognitive psychology. However caution must be taken as self-enhancing tendency among the Japanese participants could be contended in that cultural differences and level of pupils academic. The self-enhancement tendency refers to individuals' propensity for giving themselves a credit when they succeed, and the self-protective tendency denotes their propensity for blaming others when they fail (Gobel & Mori, 2007).

Pupils' attributions to their absenteeism

In this subcategory, pupils attributed that they failed mathematics examination because of their own absenteeism and truancy. This was also confirmed by their teachers that absenteeism and truancy led pupils to poor performance. It was also established that pupils used to put less effort in studying,devoting less time in the learning process. Pupils mostly from urban high density school reported that they enjoyed sneaking out of school to go and make money across the border.They were fond of playing gambling game commonly known as bonanza which the Chinese people have put in various parts of Nakonde. They also spent more time playing football and netball. Those mostly from medium and low density schools reported to burn charcoal and collecting fire wood for sale. Others were engaged in herding animals such as cattle and goats and for most of the girls the common responses was too much overload of household chores.

The pupils' responses may entail that pupils felt the causal of failure was internal unstable and controllable to them, in the sense that less effort was expedited in the preparation of examinations. The findings are almost totally in congruence with Sucuoglu (2014) who in his study found that pupils tended to attribute their failure generally to factors within themselves. Considering the dimension of stability, Weiner (1985) remarked that effort is an internal factor and an unstable attribute.In this regard one can indicate that, if the pupil attributes failure to internal (within his or her control), unstable (may change over time) and controllable (he or she can make changes to increase the skill or knowledge), his/her motivation and engagement in similar tasks in the future would increase. If teachers communicated to the pupils that their failure was due to absenteeism, inappropriate study strategies, spending more time on non

academic tasks, it is likely that they would be motivated to try and engage in more appropriate strategies in future.

5.1.2 Pupils' external causal attributions

This section presents the pupils' external causal attributions of failure in grade nine public mathematics examinations; it discusses the external attributions based on what previous research has articulated on the matter. In this subcategory, it was revealed that pupils attributed failure to teachers being incompetent, owing to their being under qualified, poor teaching methods, subject being difficult, classroom environment was not motivating and also they felt that the odds worked against them.

Pupils' attributions to teachers' qualification

Teachers' qualification was a great source of concern by the majority of the pupils. It was found that, their low grade in mathematics was due to the fact that, teachers who were handling them were not qualified to teach them mathematics. Additionally, professional bio data that was gathered revealed that most of the schools had teachers who were not qualified to teach mathematics. Hence the majority of pupils from the sampled schools felt that incompetent teaching by the unqualified teachers caused poor performance in mathematics. This view is shared by Chireshe and Tachie (2013) and Ojose (2011) in their separate studies, where they pointed out that lack of qualified teachers had negative effect on the education outcome of pupils in that, some teachers did not know all the chapters in mathematics and sometimes it was difficult for them to solve mathematics problems. They equally failed to prepare pupils adequately for examinations.

A teacher who lacks the professional skill will be unable to deliver properly in class. A teacher who does not have both the academic and the professional qualifications would undoubtedly have a negative influence on the teaching and learning of a given subject. Thus just like in Ojose (2011)'s study, pupils believed they failed the subject because there was no one capable to teach them the subject. It was discovered that pupils blamed teachers for poor academic performance in mathematics. However it may be interesting to note that pupils often fail mathematics even if they were taught by highly qualified teachers as evidenced by one school which was sampled in

Nakonde District. The school had a qualified teacher and yet results in mathematics were not up to the expected standard.

Pupils' attributions to poor teaching methods

As regards to teaching methods, the study revealed that, teachers were fond of using inappropriate teaching and learning methods. It was reported by school administrators that teachers were using lecture method when presenting mathematics lessons. The methods that were frequently used to teach mathematics were seen to be ineffective in that they used to compel pupils into passive participants during the learning process.

The findings on the teaching and learning methods are in line with the study which was conducted by Nyaumwe et al. (2004) in Zimbabwe which reported that the high failure rate in the subject were caused by some of the less beneficial methods teachers used. Such methods do not help pupils develop conceptual understanding of mathematics. In this regard, pupils condemned teachers' way of approaching the subject. As such pupils attributed their failure to inappropriate methods employed during the teaching and learning situations. Agyeman (1993) cited in Tella (2008) stated that teachers who are professionally under-qualified in mathematics have a negative influence on the teaching and learning of the subject which later adversely affect performance in examinations.

To the contrary, teachers in the present study defended the lecture method. They based their arguments on timely covering the learning content. Majority of the teachers indicated that despite the noted disadvantage, lecture method was useful in covering large content. To this effect, they contradicted their attributions in other subcategories where it was noted that pupils failed because the syllabus was not fully covered. Teachers' argument seems to be centered on self enhancement as literature already suggests that the adoption of a broad range of methods is beneficial to satisfy differences in pupils' needs arising from differences in attainment (Tomomi Saeki, 2002).

Pupils' attributions to teachers' bad behaviour

The characteristic or the personality of some of the teachers was seen as a causal attribution. When pupils were asked to give reasons why they failed mathematics, most of them reported that

they failed because of the teachers' bad behaviours. Explanations given by pupils to support this assertion included: teachers absence from school and classes; teachers used to insult pupils in class for giving wrong answers, teachers did not motivate pupils in class and teachers always had to beat pupils in class. Equally many of pupils' saw the grades that they obtained as their teachers' wish. The findings of this study may also be considered in light of existing literature by Zohri (2011) who showed that Moroccan learners attributed their failure to teachers' attitude, effort, interest and pressure. It also emerged from this study that pupils attributed their failure to teachers' bad language. The bad language was channelled through verbal feedback, written feedback on assignments test, and classroom instruction. For example, pupils' submissions included, teacher wrote in my book, "you are unteachable", "you are a fool", "you can't go beyond this", "it is better you go back to lower grade in primary school" and "all is rubbish and stop wasting my time".

Pupils' experiences of learning mathematics were characterized as didactic, no interactive and with a lack of explanation. In addition, pupils felt that they were not in good relationship with their teachers because of the sarcastic language. In this study, pupils blamed their mathematics teachers for not performing well in mathematics. The findings reported here are consistence with those identified in Chireshe and Tachie (2013) and Abodunrin (1989) in their separate studies who found that pupils' attributed their failure to teacher behaviour such as missing classes, insulting and de- motivating them. These studies further established that some teachers used to come to school drunk such that they paid little attention to teaching the subject.

Previous studies have pointed that the way teachers interact with the pupils in the classrooms, affects their pupils' attitudes of developing their positive notions of themselves as they progress in learning as well as in examinations (Williams & Burden, 1999). Teachers attribute differently, depending on their personal beliefs about particular pupils. When teachers communicate to pupils that failure is due to the use of inappropriate strategies or inappropriate effort, pupils are likely to be motivated to try harder or to use more appropriate strategies in the future. Thus the teachers' attributions are deemed controllable and unstable. Alternatively, if a teacher communicates attributes of pupils' failure on factors that are uncontrollable (such as luck) or stable (the situation won't change over time no matter the effort put in by the pupil) the pupil may likely be unmotivated to make any changes to the situation. On another note, Obodo (2000)

explains that if a teacher has a positive attitude towards mathematics, he/she will definitely be interested in its teaching and learning. Obodo further indicated that most mathematics teachers do not make the teaching of mathematics practical exciting and this leads to developing of negative attitudes in mathematics by pupils. It was also observed that the elements of novelty, usefulness and sheer intellectual curiosity are the primary stimuli, for the awakening and maintaining the pupils' interest in mathematics.

Pupils' attribution to mathematic being difficult

The nature of mathematics being difficult was also one of the common causal attributions that were made by pupils. In this study, it was found that pupils did not like the subject as their attributions expressed negative feelings, painful experiences or unpleasant emotions towards learning mathematics. Most of them indicated strong negative feelings pertaining to mathematics being difficult. They indicated that mathematics involved, 'struggling', 'is painful', 'frightening', and 'unpleasant and bad luck'. This is in line with Cao and Bishop (2001) who established that pupils attributed their failure in mathematics to task difficulty which forced them not to put any effort because of the belief that the subject was difficult. Similarly, Boruchovitch (2004) investigated how pupils attribute their performance in Mathematics. He found that pupils who performed poorly attributed their failure to external factors, such as examination difficulty and bad luck. Boruchovitch concluded that external causal attributions are made when pupils explain their failure, and they seldom attribute internally when explaining their failure. In the present study, pupils also attributed their cause of failure to misunderstanding of questions that came in mathematics examinations. In addition most of them complained of not having enough time to finish mathematics examinations due to its difficulty. The present study therefore concurs with Weiner (1984) who noted that the attributions which pupils make for their outcomes will determine the impact of failure.

This study revealed that pupils had a tendency of giving up upon noticing that time would not allow them to finish the perceived difficult examination. The pupils also had a belief that they had learnt less and that mathematics was only for the clever ones. They believed that only clever pupils could learn, study and pass mathematics without struggle. They also tended to compare their ability with others and believed that they did not belong to such groups. These findings are

in line with Manzoni (1995) who found that, pupils had a tendency of giving up when handling academic tasks due to inadequate learning. Thus the perceived causes of the pupils' failure in this study mostly derived from pupils themselves possibly due to lack of effort.

Pupils' attributions to the works of odds

In this study it was established that pupils' attributed their failure in mathematics to the works of odds. Odds are bad omens (bad luck) which brings misfortunes to individuals. Pupils agreed to the statement of whether the odds worked against them during mathematics examinations. Despite obtaining a different scenario of information with the use of questionnaire, a bigger number of pupils believed that the odds worked against them during the final grade nine mathematics examinations. The face to face interview revealed mixed attributions, there was almost a tie in the submission of attributions, some agreed while others disagreed. Those who agreed reported that too much witchcraft in their families made them to obtain such low grades; others indicated that family members were jealous of them, hence, they were praying for the bad luck to fall on them. Others indicated that other pupils (the Satanist) played tricks on them during the examinations.

However those who attributed to the odds not working against them indicated that it was not possible for other people to have negative effect on their academic performance. They further stated that the issue of witchcraft and bad omens had nothing to do with their performance in mathematics. Although the results seem to contradict each other, the finding on those who agreed seem to be in consistence with those identified in the literature Ipaye (1981) and Igbalajobi (1985) as cited in Salami, (1997) which reviewed that pupils in Nigeria were found to attribute their failures to external factors such as witchcraft and works of devils.

5.2 Teachers' causal attributions to the failure of grade nine pupils in public mathematics examinations

This section presents both internal and external teachers causal attributions on the failure of their grade nine pupil in public mathematics examinations

5.2.1 Teachers' internal causal attributions

This subcategory discusses teachers' internal causal attributions which included lack of effort, ability and interest in teaching mathematics. It will further deal with other causes such as competent in teaching mathematics, attributions submitted on pupils liking the subject or not, good study habits and making the subject enjoyable.

Teachers' attribution to lack of their effort

In this study it was revealed that mathematics teachers including heads of department blamed themselves for the poor performance of pupils in mathematics examinations. They attributed the cause of pupils' failure in mathematics to inadequate teacher effort during teaching. Common responses that were submitted included; lack of adequately preparation when coming to teach. It was also noticed that teachers preferred attending to their business activities such clearing of vehicles at the expense of teaching. Head teachers talked about teachers' frequent absenteeism during teaching periods. However the portrayed teacher attitude could be attributed to lack of competency in teaching as most of the teachers were under qualified. As Samuelson (2011) argued, a teacher who did not have competency in teaching mathematics was unlikely to be aware of the way to assist the pupils, more so if they were absent from class.

Teachers' attributions to lack of their ability

It emerged from this study that teachers denied lacking ability in teaching mathematics. In their responses they submitted included; "we know the subject content quite well," "we have ability to deliver what is expected of us to the low achieving pupils," "we have confidence in teaching mathematics." "It is true that most pupil lack ability not us," "pupil who fail always get very low marks in mathematics," "we strive to give good tasks in mathematics but pupils opt to do other things while spend less time on mathematic tasks," "we give home works but pupils do not attend to it as planned, citing reasons of not knowing how to go about it."

The above findings contradict with the study conducted by Sadodol et al (2012). In this study teachers assumed responsibility for pupils' failure, they indicated that pupils failed because of their lack of commitment towards the subject. It was further revealed that teachers were not guiding the pupils accordingly. One can therefore support Sadodols' findings by indicating

that ability is vital in the process of teaching. It appears in this case teachers failed to take on the responsibility of their pupils' failure by claiming that they had ability. However, studies indicate that failure to take on blame leads to less motivation input (Weiner 1986).

Teachers' attribution to making teaching enjoyable/interest/incompetent/ hate

This subcategory revealed that teachers never used to make teaching mathematics enjoyable contradicting with prior findings which indicated that teachers were confident in teaching mathematics despite being under qualified. The contradictory attributions could be attributed to the negative attitude towards the subject. This attitude could have been induced by most of teachers being under qualified as the study revealed that teachers reported that, pupils' failure was due to their being incompetent to teach the subject. It was also noticed that their inadequacy in terms of qualifications compelled them to attribute to bulkiness of the curriculum for mathematics. Hence they felt that the only solution to cover the syllabus was to rush through and skipping some of the topic.

The above findings are consistent with Lyakurwa (2012) who found that teachers denied being responsible for massive pupils' failure. They attributed failure to factors which were based on academic qualifications. It was found that teachers with bachelors' degree were more effective than those without bachelors' degree. Teachers also reported that most of pupils who failed mathematics were not in good relationship with their teachers. In this regard it could be stated that most of the teaching environments were horrible and were without proper interaction. Teachers need to be true guides and good facilitators in the process of learning mathematics.

5.2.2 Teachers' external causal attributions

This subcategory discusses teachers' external causal attributions which included; non motivating environment, influences of school type and peer influence. It further deals with other attributions which incorporate; pupils' been unlucky, pupils' absenteeism, mathematics examination been difficult, pupils not liking the subject and lack of teaching/learning material.

Teachers' attributions to classroom environment

It emerged from the study that, classrooms environment were not motivating because of overcrowding in classes especially in high density schools (town ship school). Teachers reported that classrooms were not good enough for producing good result particularly in mathematics. It was also observed that classrooms had very few desks. Furthermore, teachers were handling overcrowded classes of about sixty, seventy, eighty and/or ninety in a single class. It was also revealed that assessing of pupils was a greatest challenge which made provision of individual attention difficult. Teachers also thought that it was not easy to employ other techniques of teaching such as group work in such classes due to non-availability of classroom furniture. Most of the classroom blocks had bare windows as most of the classes were under construction following the abolition of basic schools in 2011. Abolition of basic school led to massive infrastructure development in most of the schools in Nakonde District. This was an attempt to solve the problem of overcrowdings. Thus the results of the present study are in line with the study that was done in Nigeria which showed that large class size negatively affected pupils' academic performance (Achilles et al., 1995).

This implies that class size is also an important determinant of academic performance, smaller class sizes do better academically than schools with larger class sizes (Achilles et al., 1995). Thus schools' physical structure has been found to influence pupils' academic performance in mathematics and other subjects. In this regard, the entire unattractive physical structure of the school building could demotivate learners to achieve high academically. Thus, it seems if the number of pupils in class could be reduced then the performance could improve, as the teachers may have enough time to concentrate on pupils of different needs.

Teachers' attributions to pupils' absenteeism and truancy

In this subcategory, teachers attributed pupils' poor performance in mathematics to pupils own absenteeism and truancy. It was also reported that when a pupil repeats a class for more than two or three years, they used to show signs of tiredness and frustration during the teaching and learning process in mathematics. The present study also found that, truancy and absenteeism led pupils into drug addiction. The results are in line with the assertion of Owen (2001) who found

that, truancy and absenteeism led pupils into drug addiction, and in most cases pupils that absented from school, performed below the expected standards in academic work.

It was also found that associating with friends who have a positive affect toward school, enhanced pupils' own satisfaction with school, whereas associating with friends who had a negative affect toward school decreased it. In this regard one can state that, pupils who care about learning are more likely to associate with peers who share interest in academics than those who have less interest in learning. The personal value that an individual attaches to a characteristic also affects the individuals' response to change and that associating with friends, who have a negative affect toward school decreases pupils' own satisfaction with school. Risk taking behaviours such as substance abuse and sexual activities have been shown to negatively affect school performance in a negative way (Ryan 2000). Teenagers learn about what is acceptable in their social group by "reading" their friends' reactions to how they act, what they wear, and what they say. The peer group gives this potent feedback by their words and actions, which either encourages or discourages certain behaviours and attitudes. Anxiety can arise when teens try to predict how peers will react, and this anxiety plays a large role in peer influence.

The study further established that, many of their pupils used to run away from schools while in many of the cases, the parents use to believe that they are attending school classes. While they are away from school, they used to exercise their freedom by engaging in a lot of juvenile delinquencies like fighting and drug abuse. Effects of truancy lower academic achievements, delinquent and criminal activities (Ryan, 2000). This implies that, the situation in most secondary schools in Nakonde regarding the issue of absenteeism and truancy is pathetic. Absenteeism and truancy are presently major problems facing most schools, and the damaging effects to pupils' academic performances have largely been overlooked. It has been established that absenteeism and truancy are mechanism in the arena of teaching and learning (Ryan, 2000).

Teachers' attribution to pupils' negative peer influence

The study has shown that teachers attributed poor performance of pupils, to pupils' negative peer influence. Pupils especially the boys who failed mathematics were reported to be reluctant in academic work. The study also revealed that peers were not necessarily in the position of knowing exactly what marks their friends were achieving or how much time they used to spend

on homework in any given week. Thus, teachers attributed that individual pupils were giving their peers a false impression of their academic performance. Teachers felt that pupils used to discourage each other to avoid academic pressure. Secondly, other peer were reported focusing more on extracurricular behaviour, and more on antisocial behaviour outside of school rather than on academic achievement.

In this regard, the study has established that peer level factors according to educators have a relationship with pupils' academic performance. Pupils whose friends engage in negative activities such as use of drugs, sneaking out of school and being absent from school are likely to perform low in mathematics. The personal value that an individual attaches to a characteristic also affects the individual's response to change (Cohen, 1977). It was found that associating with friends, who have a negative affect toward school decreases pupils' own satisfaction with school. It must be noted that individual pupil's participation in the learning process is influenced by a number of factors both internal and external factors. However, the kind of feedback that pupils get from their colleagues has a greater influence on their mathematics performance in class. The result challenges teachers' and other educators to be proactive in promoting a classroom environment which is free from pupils influencing one another in a negative way.

Teachers' attributions on lack of teaching/learning materials

All the teachers attributed low performance in mathematics examinations to lack of teaching/learning materials in schools. It was found that mathematics teachers' guide, pupils' text books and syllabuses were some of the aids that were frequently used in schools. However most of the schools were lacking such aids. Interestingly some of the school had no syllabuses. In this study, teachers were aware of consequences of non-availability of the mentioned aids like difficulty to teach mathematics without a teachers' guide. It is not easy to formulate objective using pupils' text book only. Hence teaching out of the syllabus does not allow proper preparing of pupils in examinations, a syllabus points out what to teach. This is congruent with the findings of the recent studies by Tachie and Chireshe (2013) and Savas and Ilyas (2010), who in their separate research found that the pupils attributed their high failure in mathematics to lack of mathematics textbooks. In this regard it can be deduced that non availability of teaching and learning resources affects performance of pupils in mathematics in the negative way.

Teachers were aware of consequences of teaching from the abstract and consequences of non-availability of the aids. It was also revealed that teachers were reluctant to improvise the teaching aids in mathematics; they cited lack of material and financial resources. It was also interesting to note that teachers were not willing to improvise the aids using locally available materials. This showed how negative attitude and lack of seriousness on the part of the teachers towards teaching mathematics effectively in Nakonde district as some of the aids could be provided using local materials. Where these materials (i.e., textbooks, laboratory equipment, syllabus, etc.) are not available, it can cause low academic performance as teaching and learning becomes ineffective. It is noted that the availability and use of teaching and learning materials affect the effectiveness of a teachers' lessons and lesson comprehension. According to Psacharopolous and Woodhall (1985) textbooks are a major drive for performance in examinations. Their availability is strongly related to achievement among pupil from particularly those from lower income families in rural schools where access to modern facilities such internet is minimal.

The provision of adequate teaching and learning materials is an important factor in promoting effective teaching and learning. The learning of mathematical concepts and skills cannot be learnt in isolation with these materials that pupils will need to comprehend and make meaning to what they have been taught (Psacharopolous and Woodhall 1985). For example, when teaching new algorithms it is important (where possible) to use concrete materials. Pupils should have opportunities to use such materials until the concept is well grounded. When mistakes occur after the concrete materials are removed, they must be reintroduced to the pupil during the remediation process.

Teaching and learning materials such as textbooks, teachers guides, wall pictures, maps, atlases and other learning aids are critical ingredients in the teaching and learning process. Additionally, they aid teaching and learning process. They also provide opportunities for pupils to use what they have learned (Psacharopolous and Woodhall 1985). Since there were less teaching-learning materials in the low achieving schools, the situation made it difficult for the pupils to understand the lessons, learn more and retain what they learn, this led to lower performance. This position confirms the research findings of Psacharopolous and Woodhall (1985), that the shortage of teaching-learning materials deprived pupils of exercises, attention and feedback from teachers to enhance their gained knowledge and improve their academic performance.

Teachers' attributions to influences of school type

School type based on ownership (government or private) did matter in the teaching and learning of mathematics. In particular, it was reported that most pupils in private-owned schools perform better in mathematics than their counterparts in public owned schools. The teachers based their argument on the fact that private owned and grant aided schools chose the (cream) best pupils whom they admitted in grade eight. It was also reported that private-owned schools were better in terms of the availability of qualified teachers, teaching and learning aids, over enrolment is not entertained. This situation had made many parents to enrol their children in grant aided and private owned secondary schools in Zambia.

The present findings on influences of school type are similar to the earlier study conducted by Crosnoe et al.(2004). In that study it was found that school sector (public or private) and class size are two important structural components of the school. Ideally, private and grant aided schools tend to have both better funding and smaller class sizes than public schools. The additional funding for grant aided schools leads to a better academic performance because of resources and other facilities such as computers. Teachers' experience is another indicator of pupils' academic performance. In this case it can be argued that pupils who attend schools with a higher number of teachers with full credential in mathematics tend to perform better and vice versa.

Teachers' attributions to shortage of qualified teachers

Both educators and pupils had similar views on the shortage of qualified teachers. Teacher attributed low performance of pupils in mathematics examination to unexpected teacher transfers, teachers' periods' overload and shortage of qualified teachers. One teacher narrated;

most of these incompetent teachers rush to complete topics they don't care whether pupils have grasp the concepts or not and in these large class size it becomes a night mare for most of the pupils.

Teachers blamed on themselves for non-covering of the syllabus and blamed other educators from high offices such District Education Board Office (DEBS) for failing to put up string measure for erring teachers. The present findings are in congruent with the findings of the

previous study (Samuelson 2011). The study found that teachers who did not have competence in teaching mathematics were unlikely to be aware of the way to assist them in solving problems in mathematics.

To this effect it is vital to indicate that teachers who are qualified to teach a particular subject are likely to employ appropriate methods in an attempt to inculcate conceptual understanding of mathematics in pupils and adequately discuss mathematical problems with them. Hence unlike a teacher with low qualification in mathematics, higher qualified ones help the pupils to learn and perform better. It is for this reason that the ministry of education should adequately train teachers who should be available for the pupils' needs not only in mathematics but also in other subjects.

Teachers' attributions to non-completion of the syllabus

With respect to non-completion of what is supposed to have been taught over two year, pupils and their teachers presented attributions which were tallying. Some teachers for example generally attributed that a lot of time was spend teaching what teachers knew best. About this one deputy head from low density school said, "*Pupils spend most of the time learning factorization which is easy but what about geometry which is difficult? That is why they do little in other topics.* Also, teachers were seen to come late to classes for a long period, meaning a lot of lost was time. In this case one head teacher corroborated. "*Everyday pupils sit for five minutes waiting for the mathematics teacher, how many minutes in a month is wasted?*"

Teachers and other educators, on the other hand, identified activities like sports and breaks in teaching as time consuming. Almost all the educators mentioned the fact that they generally did not have enough time to complete the syllabus content. This is consistent with Etsey (2005) in his study, who found incidences of teachers lateness to school and absenteeism, non completion of syllabi, irregularity of homework given to pupils, language used in teaching, interest in children understanding of lesson, and teacher work habits as the major contributor of poor performance in school.

Basing on the above finding, one can conclude that, in most instances when teachers get to school late, they do not take part in the morning assembly, also do not start classes on time and that teaching time is lost. This implies that fewer topics would be taught, as this continues there

would be a backlog of syllabi not taught and this would result in the lower output of work. It is in this regard that, more effort should be exhibited by the teachers if performance was to be improved in Nakonde district.

5.3 How attribution of failure affects future performance in public grade nine mathematics examinations?

It emerged from the study that teachers and pupils had conflicting views on whether they were satisfied with the grade pupils obtained in the previous mathematics examination. Most of the pupils were satisfied with their low grades that they obtained. Surprisingly, pupils were even more comfortable with the low results they used to obtain during the end of term tests. In defending their egos, pupils attributed that they were unlucky in mathematics that is why they accepted anything that came forth, hence pupils blamed external causes. In this study, pupils used to feel comfort of unpleasant outcomes, a situation which led them to put less effort in academic tasks, the study does not support the affirmations of Weiner (1985) who considers effort an internal factor and one of the main influences on achievement outcomes. Weiner portrayed that, higher satisfaction occurs when success is self-attributed. In this study, pupils ascribed their learning outcomes to external factors like the grading system and luck, this signified that less effort was put across in mathematics. Weiner believes that pupils attributing their success to luck or other external factors tend to do less well than those who ascribe success to ability and effort.

The study also established that teachers were not satisfied with pupils' results. They also expressed anger, regret, frustration, disappointment, self-blame, pity, shame, guilt, surprise and grief. Teachers blamed themselves and also blamed pupils' attitude towards the mathematics subject. It was also established that teachers were sympathizing with the pupils who failed. The results of the present study are similar to the earlier study conducted by Weiner et al. (1982) which found that sympathy, ability, as well as frustration and efforts were positively correlated. These convey teachers' negative expectations on pupils. Consequently, pupils who receive sympathy from the teacher may attribute their failure to low ability (internal, stable and uncontrollable) and interpret the affect as a low expectation from the teacher.

Research has shown that pupils who are shown pity tend to have a significantly lower self-concept than those who are shown anger and that pupils in the pity condition believed the teachers attributed their failure to lack of ability as opposed to lack of effort Taxer Jamie (2011). In this regard, a critical consideration on pity and anger on the part of the teacher is vital as there are ingredients in strategies aimed at improving performance amongst the pupils.

Alternatively, a pupil who receives frustration from the teacher may attribute the failure to low effort (internal, unstable and controllable) and interpret the affect as high expectation from the teacher a situation which in turn, influence pupil' motivation and achievement (Reyna, 2000).

In particular, when continual sympathy is paid by teachers, pupils' long-term motivation may be negatively impacted. This is because, they see it as a signal that teachers believe they are incapable of success (Weiner&Handle, 1985). Weiner (1986) concluded that failure or help needed when attributed to controllable causes (lack of effort) usually elicits anger and negative evaluations however, when attributed to uncontrollable causes (physical handicap) failure usually elicits sympathy and positive evaluations.

The present study also coincide with Weiner, Graham and Chandler (1982) in their study who found that pity was strongly associated with uncontrollable and stable causes implying that less effort was exhibited and that anger was strongly associated with an external source whereas guilty was associated with an internal source (more effort) a factor attributed to the self-based. As aforementioned, it may be concluded that the distinction between self-blame and blaming of external sources determines whether the affective reaction is guilty or anger as earlier reviewed. In terms of outcome associated with an internal locus of causality, the distinction between controllable and uncontrollable causes appears to determine whether the individual experiences anger or pity.

5.3.1 Taking on the responsibility for negative academic outcomes

In this study, it was a two way system, on who teachers laid blame on, teachers laid a blamed themselves and also on the pupils for the low performance in mathematics. Some teachers submitted that they never used to teach them good study habits and that they were unqualified to handle the subject effectively. In addition pupils were blamed for their negative attitude towards

the subject. Alternatively, teachers attributed the cause of failure to both internal (unstable controllable) and external (unstable controllable). This imply that their attribution were manageable upon exhibiting positive attitude. To some extent the findings are in line with the results of the early studies conducted by Wieners (1986) who proposes that internal attributions produce greater changes in esteem-related affect than external attributions. Stable attributions are more concerned with expectancy for failure, and controllable attributions are more closely connected with persistence than uncontrollable attributions.

On the part of pupils, it was established that the cause of failure was attributed to other people, an (external factor). For example pupils gave common responses which included, been unlucky, teachers' negative attitude towards the subject. Equally, most of pupils indicated that, they had lost interest in mathematics because teachers were missing the periods, giving the pupils a lot of tasks while they sit in the staff rooms chatting with fellow teachers. Others were reported reading newspapers while in classes, pupils were just making noise. Hence, pupils develop negative feeling on the subject. Thus, the research findings in this subcategory may indicate that pupils attributions were centred on causal factors that were external stable and controllable. It was external as pupils transferred the blame to teachers who were perceived to have negative influence on their academic performance in mathematics. This implied that more effort in future mathematics tasks would not be expedited due to their beliefs. The finding is almost totally in congruence with previous study Boruchovitch (2004) who found that pupils with internal attributions made effort that resulted in improvement, while those who attribute to external causes exhibits less effort and subsequently fail the examinations.

Similarly, the present findings tallies with those of Sucuogh (2014) who found that pupils attributed their failure in music course to factors within themselves. It important for the mathematics teachers to be mindful when counselling such pupils who deny the responsibility of failure, furthermore, it was interesting to note that pupils gave also negative internal attributions they attributed that they dislike the subject because it is naturally hard to comprehend. However, most of them reported that they did not allocate much time to study the subject. Although, they attributed failure to internal stable and uncontrollable causes, the majority blamed the teachers for not having positive interest in mathematics and further indicated that they would perform well in examinations if the teachers' bad character were positive.

This study revealed that negative causal attribution influence pupils self- esteem or self worth. Thus pupils attributing failure to lack of ability lowers self esteem more than failure attributed to bad lucky. To support this contention, research conducted by Batool, et al (2012)on attribution patterns among high and low attribution groups'holds that either an attribution of failure to external circumstances (bad luck or hindrance of others) or an attribution of failure to low ability (internal factor) may be debilitating. The least debilitating explanation for failure is to claim that insufficient effort has been expended. The most debilitating explanation for failure is to internal, stable, uncontrollable factors (level of ability) as feelings of helplessness (giving up) are likely to result. Thus the research finding in this present study may indicate that, pupils who attribute failure internally may exhibit lower levels of self-esteem than those who attribute failure externally; this is evidence from pupils' assertion that if teachers' attributions were positive, chances of good performance may be exhibited. Attribution judgments have important implications for motivated behavior, as outcomes attributed to external, uncontrollable factors of the situation are less likely to motivate action than those attributed to more internal, controllable factors (Weiner, 1974; Bandura, 1977).

The study established that pupils had negative attitude towards the subject.For example most pupils attributed inability to learn and study the subject, pupils' gave the following words, "I can't pass," "I gave up," "it was impossible for me to do well in mathematics," may be demotivating. Such assertions from pupils does not give room for improvement, may lead to the decrease of self- efficacy, low self-esteem, depression. Worse more, pupils also felt that marks were based on favoritism that is why they gave up putting much effort, a situation which led to poor grade in mathematics examination. To some extend the findings are in line with the study that was done by Pan (1993) who found that in an actual examination of mathematics, low achievers attributed their causes of failure to ability, difficult examination and were more depressive and reluctant in academic tasks.

Ideally, attributions can influence pupils' self- esteem and directly affect their expectations of future success (weiner, 1986) teachers need to pay attention to how pupils view their failures, which is directly related to how they make sense of the learning environment. How pupils make attributions for their failures, for example, may influence how they approach future tasks. Since attributions are dynamic and permeable, teachers should be able to affect the positive future

causal attributions of pupils. Changing the way pupils view themselves as learners, how they create their own ideas of failure, and even how they view themselves. In other words, helping pupils to view failure as outcomes that can be controlled may increase their expectancy for success and lead to actual success in future endeavors.

It emerged from the study that teachers had to take on the blame while pupils explained their causal of failure to external factors. The contradictions may signify that teachers learnt from the previous experiences and pupils were not prepared for successful outcome. Research has established that the notion of learning suggests that pupils most able to learn from failed experiences will be those most likely to succeed in the future, as they take responsibility for an undesirable outcome, attempt to reflect on what went wrong, and test new approaches or alternative strategies for future performance (Weiner, 2000). Yet empirical evidence for the effect of failure on pupils learning has been decidedly mixed. Some studies have found the beneficial role failure plays, finding that pupils and teachers engage in greater information seeking, reflection, and improvement efforts following a failure or unexpected outcome (Ellis & Davidi, 2005). But others have found pupils and teachers reluctant to learn from failed experiences due to significant psychological and social barriers that lead to shame anger and low self esteem, reflecting on the lessons of a failure becomes null and void (Jordan & Audia, 2012).

Despite this contradiction it must be noted that every failure is an individual's own attribution of responsibility, namely, taking personal ownership for the outcome or blaming it on external circumstances. It can be argue that this distinction in attributions can help reconcile the conflicting findings observed in prior research. By focusing on the determination of failure attributions of that failure and looking at lack of conceptual clarity regarding how failure impacts learning. Indeed, previous research has largely assumed that failure generally leads individuals to protect their image and distance themselves from negative performance outcomes by externally attributing their performance (Jordan & Audia, 2012).

5.3.2 Effects due to controllability

As regards to whether the cause of failure was out of control or not, teachers and pupils had also different attributions. Teachers felt failure was under the control while the majority of pupils indicated that their failure was out of their control (citing external and uncontrollable factors).

Pupils pointed out to say, there was nothing that they could do to change the situation following several attempts during class activities and even in examinations. In this study, it appears that pupils had feelings of lack of personal control over negative outcomes. This condition is known to further incapacitate future achievement because of failure to exhibit more effort in mathematics (Yang, 2012).

In this regard, one can indicate that, the findings are in line with the assertion of Banks and Woofson (2008) who observed that pupils' perception of uncontrollability has the most damaging consequences in terms of academic performance. In their studies the two researchers indicated that pupils who perceived to be in control of their academic task performed better than those who attributed their performance to some uncontrollable factors. According to Williams and Burden (1999) learners understand what the causes of their failure are. If they perceive the causes of failure as changeable and that they can control the change, then they could control their learning outcomes; for example, they could improve themselves by making greater effort to practice more.

It also emerged from the study that pupils had to switch off exhibiting more effort in mathematics. They felt that teachers were responsible because of their poor methods in teaching and failure to provide appropriate learning and teaching aids, while teacher defended the accusation by indicating that pupils' bad attitude was to blame. In this regard both teachers and pupils felt that failure was something unavoidable as they exhibited forth less effort. This situation contributed highly to high failure rates. This view is shared by Fennema et al (1990) who revealed that, pupils who perform low perceived themselves to have less control over their low performance and exhibited low efforts than pupils who thought of themselves as being higher achievers. As Lei and Qin (2009:46) points out, *effort is very important in learning, without which pupils could achieve nothing*. The pupil who attributes failure to lack of effort, that is to their own actions and characteristics feels more responsible for their actions; teachers, thus, should remind pupils of the value of effort. According to Hsieh (2004:143), *when pupils feel that they are responsible for the outcome of their grades, they tend to become more involved and active in the learning process*. It assumed that if effort the pupils put into their academic activities has little correlation to the outcome they receive, the pupils begin to feel that failure is not out of their control and tends to attribute failure day in and out in that particular subject.

Pupils' felt that they had less control of their negative outcomes. Hence, one can argue by stating that pupils hold an entity view of low intelligence in mathematics, and they seem to believe that intelligence is a stable trait. However, to the contrary pupils seem not to hold an incremental view of intelligence, which implies that intelligence, is changeable, so that it can be increased through effort. Dweck (1986) argued that pupils holding an entity theory of intelligence are motivated to look smart and protect their sense of ability. Pupils believing intelligence can change focus on learning and improvement. When pupils do poorly, believing that one's ability has a limited capacity means that failure is more debilitating. Some pupil holding this view will believe, they have little chance of ever doing well, because their ability cannot be improved. Weiner (1986) suggest that pupils who attribute failure to their lack of ability, probably have a low estimate of their future success. In this case it can be argued that holding an entity view of low intelligence in mathematics, have fewer benefits to pupils.

5.3.3 Attributions effects due to expectations

In this study teachers' expectations on the pupils who failed mathematics were low, the majority of the teachers reported that, pupils lacked ability. Hence they felt that it would be very difficult for them to perform wonders or miracles in the coming examinations. Most of the teachers indicated that pupils' negative attitude towards the subject was a signal enough that even in the next examinations the improvement would be very minimal. The majority of the teachers reported that the pupils who failed the examinations were considered to be low achievers.

The study further reported that teachers' low expectations influenced them to concentrate less on their pupils and at time teachers were sympathizing with pupils, for example in a statement that was given by one teacher; *"I always feel pity for these perpetual low achievers when I see their results, most of them comes from very poor families, how I wish they was a possibility of writing exams for them."* To some extent the study supports previous research that was done by Reyna and Weiner (2001) who found that teachers experienced emotions of anger or sympathy following pupils' performances in mathematics, depending on their expectations of their pupils. It was further found that expectations for pupils' performance were conveyed by teachers, whether high or low in a variety of subtle ways. Teachers with high expectations act by teaching more

material, insist on high achievement, give pupils more opportunities to respond to questions, rephrase questions if they face difficulty, give positive and negative feedback (Dweck, 2000).

5.3.4 Attributions effects due to negative feedbacks

In this study it was established that teachers were using negative comments such as poor work, poor boy or girl, very bad work, can't go beyond this, foolish, rubbish work, un-teachable boy or girl. This entails that teachers were not focusing on effort based and effective strategies used in attempt to remediate the negative situation when giving feedback. This situation led pupils to develop feelings of inadequacy on future outcomes. This current finding does not support the findings of Foote (1999). Foote found the positive feedback from success that focused on ability built pupils' self-efficacy and motivation while negative feedback from poor performance that focused on effort did not diminish the pupils' self-efficacy or motivation. Hence, it is vital to indicate that, the most effective types of feedback for pupils' motivation in yielding good academic results, could be positive ability feedback and negative effort feedback. Pupils make their attributions for outcomes of situations after evaluating those situations. Hareli and Hess (2007) have shown that an explanation for failure is detrimental to an individual if the failure implies a devaluation of the individual's worth. For this reason, it is important that teachers' feedback focuses on effort and effective strategy use because these are within the control of the pupils and have been shown to be effective in enhancing achievement (Hareli, 2007).

Equally, pupils reported that teacher's characteristics influenced them to attribute low performance on themselves, attributions that were obtained included; "teachers used to accept their responses that were contrary to the answer during oral questioning, used to reject their responses in the negative way and used to call on someone else who performed well to answer the question, had less respect for them as individuals with diverse needs and interest, treated them with less warmth, were failing to praise their strong effort but criticize their weak efforts negatively." The results are in line with the assertion of Ives and Gottlieb (1986) who found that teachers provided less feedback provided largely corrective feedback which consisted of more non-supportive verbal or negative non-verbal behaviour, gave more praises for easy tasks and provided less credit for success. Further, the present study supports Ames (1975) who found that teacher negative feedback tended to convey attributions of low ability to the low achievers.

Basically, teachers' negative feedbacks that conveyed attributions of low ability for pupils' failure are likely to lead to feelings of giving up among pupils. It also hinders pupils' motivation to try harder as pupils perceive themselves as not being in control of their low ability. Alternatively, pupils would not persist in their learning, because of the belief that no amount of effort will help them to improve themselves. For example, Ames (1975) reported that feelings of giving up had even more devastating effect on the achievement behaviour of low achievers as they perceive that no amount of effort will lead them to succeed in a competitive climate which renders success to only a few.

According to Purkey (1970) teachers feedback regarding pupils' performance on school tasks might enhance or demoralize the pupils' self-concept. If the feedback is perceived to be positive by pupils, their self-concept may be enhanced and pupil may feel encouraged to do better in future. However, in this present study, it was seen that the feedback focused on ability, which conveyed the belief of low ability in pupils. This is because the bad sentiments that was gotten from teachers, and those pupils felt demotivated from trying hard and were less reluctant to attempt. To support this contention, Burks et al., (2009) noted that outlining clear expectations builds trust with the pupil. Pupils' cease to be motivated if expectations are unclear or unreasonable and resort into negative attributions (McLeod, 1995). This implies that pupils themselves usually developed a set of beliefs about the reasons for their failure. For example, if a fair pupil gets a good grade on an examination, he/she may attribute his/her good performance on internal (I am good at this subject) or external (I am lucky today) factors.

In addition it is also emerged from the study that pupils perceive their teachers as having a tremendous impact on their learning abilities especially in the case of forced bad name calling. Teachers were fond of giving funny names to pupils and the degrading names that were mentioned included; hard crackers, unreachable, droppers dull, watery brains, idiots, low achievers, imbecile and many more. According to Borich (1995:233), "*teacher behaviour imparts negative attributional information to their pupils.*"

This implies that if teachers are conscious of the attributional messages they send to their pupils, then they can affect attributional changes in their pupils and in this way can bring about successful learning. It can therefore be argued that, since teacher feedback is one of such a

powerful factor in pupils' determining the causal factors for failure, teachers need to be cautious of the feedback that they offer. Negative feedback, with the intention to help the pupils improve, can quickly be interpreted by the pupils as a devaluation of their self-worth. Since it is human nature to preserve self-worth and attribute failures to causal factors that preserve self-worth, ("I failed because the teacher dislikes me", rather than "I failed because I didn't study") teachers need to be cautious in their offering of feedback to pupils in the instance of a failure.

5.3.5 Attributions to past academic history

The study revealed that teachers were influenced by pupils past academic history as pupils' performances in mathematics were not changing. Each time when the feedback was given, those who performed low were always going down. This meant that even in their examination the performance would not change positively. Teachers had perceived low achievers in mathematics to be always low achievers and teachers further reported that, it was difficult for such pupils to perform well because they had been failing. The findings supports Batool (2011) who indicated that, past failures are partly the causes of attributions and that, teachers usually judge pupils according to their previous experience. They predict one pupil would perform good or bad according to his/her past grades. This has also been proven in other studies (Dörnyei (2001) that past negative attributions affect pupils' current achievements motivation.

When pupils have consistently experienced failure in the past, they are likely to attribute current failure to stable causes such as ability. If, however, past performance is inconsistent, pupils are more likely to attribute their current failure to unstable causes such as effort, luck, or difficulty of the task. Past experience determined our view and evaluation of situations including our beliefs about our ability to handle a certain situation. An encounter with unusual experiences may generate more intense necessary worries and self-doubts. Pupils who had negative or embarrassing experiences with mathematics may have an aversion for the subject. Dörnyei (1990) perceives that attributions about past failures can contribute to current motivation. Therefore, reflecting on how to reshape their (teachers/pupils) negative past beliefs can influence performance positively as portrayed by Bean and Eaton (2000:55) who claimed that:

Students who are academically at risk and who, despite past difficulties, watch others succeed and begin to believe that they can succeed in academic tasks are more likely to invest the emotional energy necessary to achieve academic goals.

In this regard, it is vital for teachers to develop the sprite of not making wrong assumptions basing on the past experiences. Teachers have also the responsibly of encouraging pupils to see links between effort and outcome and to attribute past failures to a lack of effort, confusion or ineffective strategies that teachers used. When teachers know how to deal with these attributions, they can enhance pupils' motivation and expectations for future success.

5.4 Summary

This chapter has discussed the findings of the study based on the objectives. It started by discussing pupils' internal and external causal attributions of failure in public mathematics examinations which included variables namely, lack of interest/effort, lack of natural ability, inability to study, pupils laziness, pupils absenteeism. In this case,pupils' message was that they were failing not because of their own making but because of factors that were emanating from their learning environment. These external causal included, teachers been incompetent owing to they being under qualified, poor teaching methods, subject been difficulty, classroom environment were not motivating and also pupils felt that the odds worked against them.Hence, it was concluded that pupils attributed their poor performance in mathematics largely to external attributions than to internal causes.This clearly showed that pupils lack innate talent of attributing failure to themselves a factor which is problematic. On a large extent it was established that pupils were not eager to take on the responsibility of their failure. Research findings indicate that there are various grounds why the pupils discern themselves as unsuccessful mathematics learners which need to be exploited.

Equally, like in pupils, teachers' and other educators' causal attributions were based on Weiner theory. For example,in locus of control, attributions included lack of their effort, ability and interest in teaching mathematics. In this study, it was concluded that teachers' attributed pupils' failure in public grade nine mathematics examinations to factors that were within themselves and also to external factors. Unlike in pupils' attributions, much of the teachers' attributions were not problematic as they were manageable,this meant that they were unstable and controllable.

Finally, effect of attributions of failure which included affects due to locus of control, stability and controllability have been discussed. The chapter also discussed effects on teachers' expectations, attributions to negative feedbacks and attributions based on past academic history of pupils. In this subcategory, it was concluded that lack of innate talent, low self-esteem, lack of motivation, lack of interest, negative attitude, anger, feeling of shame, physical cause, laziness in teaching and learning were some of the factors that influenced teachers and pupils. These causal factors made pupils and teachers to have less control over negative outcomes and in turn led pupils to lend helplessness situation in academic performance, a situation which brought unpleasant low grades in mathematics examination.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter presents conclusion of the study and recommendations drawn from the findings of the study. The study was conducted to determine causal attributions of failure in mathematics examinations in selected junior secondary schools in Nakonde District.

6.2 Conclusion

Based on the findings, the study provides evidence that pupils' attributed their failure to both external and internal factors. Internal causal attributions included lack of interest/effort, lack of natural ability, inability to study, pupil's laziness and pupil's absenteeism. In this case pupils' message was that they were failing not because of their own making (internal cause) but because of factors that were emanating from their learning environment the external ones. These included, teachers being incompetent owing to them being under qualified, poor teaching methods, subject being difficulty, classroom environment were not motivating and also pupils felt that the odds worked against them. Hence, it was concluded that pupils attributed their poor performance in mathematics largely to external attributions than to internal causes. This clearly showed that pupils lacked innate talent (ie internal stable uncontrollable) of attributing failure to themselves a factor which is problematic owing to that, pupils were not eager to take on the responsibility of their failure. Pupils were not putting much effort to improve or change their present situation.

Equally, teachers' and other educators made internal causal attributions which included, lack of their effort, ability and interest in teaching mathematics, incompetent in teaching mathematics, teachers disliking the subject, bad/good study habits and not making the subject enjoyable. These have been identified as possible contributors to minimal pupil's performance in mathematics examinations. Additionally they also made external causal attributions such as non motivating environment, influences of school type and peer influence, pupils being unlucky, pupils' absenteeism, mathematics examination being difficult, pupils not liking the subject and lack of teaching/learning material were considered addition causal factors to poor performance.

However, it was concluded that, teachers and other educators attributed pupils' failure in public grade nine mathematics examinations to factors that were within themselves and also to external factors. Unlike in pupils' attributions much of the teachers' attributions were not problematic as they were based on unstable and controllable factors.

Finally it was revealed that effects due to locus of control, stability and controllability, the dimensions which also include teachers' expectations, attributions to negative feedbacks and attributions based on past academic history of pupils had a detrimental effect on pupils' academic performance. The study concluded that, lack of innate talent, low self-esteem, lack of motivation, lack of interest, negative attitude, anger, feeling of shame, non motivating environment, laziness in teaching and learning led to unpleasant low grades in mathematics as they induced attitude of learnt helplessness.

6.3 Recommendations

Based on the study findings, the following recommendations are made:

1. In order to address negative pupils' causal attributions of failure in mathematics achievement, pupils should accept the fact that much of what happens to them is a result of what they do. As such they should focus on effort as the main driver of success in their academic endeavors' rather than luck or ability.
2. Teachers should adjust the way they interact with and respond to pupils' performance through:
 - (a) Appreciating the fact that every pupil can learn to learn and therefore every pupil can be successful. Teachers should encourage their pupils to make attributions of controllable causes, so that changed self-perception brings academic improvement.
 - (b) Encouraging pupils to believe that they can attain challenging goals.
 - (c) Intensify guidance and counselling sessions where the importance of doing mathematics is shared with pupils so that they develop positive attributions.

- (d) Mitigate on the inadequacy of teaching/learning materials and enhance their provisions to schools.
 - (e) Working in collaboration with other teachers and parent to curb pupils' absenteeism.
 - (f) Motivating pupils intrinsically and providing suitable oral / written feedback to them so that the desire for pupil to learn, to discover, to comprehend, to develop can flourish.
3. To address the effects of causal attributions;
- (a) Teachers should not show sympathy or pity when pupils fail, by doing so they convey the idea that pupils lack ability. Teachers should show the spirit of encouragement.
 - (b) When giving feedback, teacher should encourage pupils to be taking the responsibility of their failure as this may develop their innate talent and foster the spirit of trying hard (effort).
 - (c) By empowering the pupils with the awareness that they have control over their negative actions and that they can change outcomes, academic self-esteem can be enhanced and future success optimized.

6.4 Suggestions for Further Research

The study focused on causal attributions of failure in public mathematics examinations amongst grade nine secondary school pupils in Nakonde district Zambia. The study ought to be seen as a preliminary effort in this area. Therefore, there is need for further research which would focus on specific issues such as:

- Causal attributions of success and failure in junior secondary schools.
- Gender differences in causal attribution in junior secondary school.
- A comparative study on the effects of negative teacher- pupils' attributions on academic performance in schools.

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APPENDICES

Appendix 1:-Mathematics causal attribution scale- questionnaire for pupils

THE UNIVERSITY OF ZAMBIA

SCHOOL OF EDUCATION

**DEPARTMENT OF EDUCATIONAL PSYCHOLOGY, SOCIOLOGY AND SPECIAL
EDUCATION**

Dear respondent

I am a post graduate (masters) student at the University of Zambia, carrying out a research on **Causal Attributions of failure in grade nine mathematics examinations**. You have been selected to participate in this research. The information you will provide is purely for academic use and will be treated with highest degree of confidentiality. You are therefore required to be objective as you can in your responses.

INSTRUCTIONS:

Please indicate your response or answer to each question or statement by filling in or ticking only one option in the appropriate blank spaces provided.

SECTION A: BIO DATA

Name School

What is your gender? Male [] Female []

Which grade are you doing? []

Grade obtained in 2014 grade nine mathematics examination results []

Tick on the answer of your choice

Theme I: Pupils' attributions to their failure in public mathematics examinations

Internal attributions

1. I failed mathematics exams because of my own absenteeism and truancy

Strongly Agree,	Agree	Disagree	Strongly Disagree
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2. I failed mathematics examination because of lack of interest in mathematics

Strongly Agree,	Agree	Disagree	Strongly Disagree
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3. I failed Mathematics examination because I did not try hard.

Strongly Agree,	Agree	Disagree	Strongly Disagree
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4. I failed mathematics examination because of lack of studying mathematic

Strongly Agree,	Agree	Disagree	Strongly Disagree
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5. I failed mathematics examination because I was not interested in mathematics.

Strongly Agree,	Agree	Disagree	Strongly Disagree
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6. I failed mathematics examination because I don't have natural ability in mathematics.

Strongly Agree,	Agree	Disagree	Strongly Disagree
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7. I failed mathematics examination because of my own laziness in learning mathematics.

Strongly Agree,	Agree	Disagree	Strongly Disagree
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External attributions

8. I failed mathematics because the classroom environments were not motivating

Strongly Agree,	Agree	Disagree	Strongly Disagree
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9. I failed mathematics examination because teachers were not competent to teach the subject.

Strongly Agree,	Agree	Disagree	Strongly Disagree
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10. I failed mathematics examination because of teachers' bad behaviour.

Strongly Agree,	Agree	Disagree	Strongly Disagree
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11. I failed mathematics examination because the odd worked against me.

Strongly Agree,	Agree	Disagree	Strongly Disagree
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12. I failed mathematics examination because mathematics examination was difficulty.

Strongly Agree,	Agree	Disagree	Strongly Disagree
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13. I failed mathematics examination because of poor teaching methods.

Strongly Agree,	Agree	Disagree	Strongly Disagree
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14. I failed mathematics examination because of teachers' negative attitude.

Strongly Agree,	Agree	Disagree	Strongly Disagree
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Appendix 2: In-depth interviews thematic questions for pupils

THE UNIVERSITY OF ZAMBIA

SCHOOL OF EDUCATION

**DEPARTMENT OF EDUCATIONAL PSYCHOLOGY, SOCIOLOGY AND SPECIAL
EDUCATION**

Theme 1: Pupils' causal attributions to their failure in grade nine public mathematics examinations.

Internal causal attributions

Probe for the following

- (a) Did you pass mathematics examination last year?
- (b) How many subjects do you like most? Probe more on having interest in mathematic.
- (c) Describe your experience in mathematics learning. Probe more on past experiences.
- (d) Do you put much effort in studying mathematics? Probe more on pupils attitude focusing on ability and laziness
- (e) How were you preparing yourself in mathematic examinations? Probe more on study habits
- (f) How have you been fairing in mathematics learning? probe more on natural ability in maths
- (g) Do you attend mathematics lessons regularly? Probe more on absenteeism and truancy
- (h) Whom did you blame for failing mathematics?

Pupils' external causal attributions

- (a) How do your mathematics teachers teach mathematic, do they struggle to solve certain calculations, do they prepare well when coming to teacher- probe more on teachers qualifications and incompetence.
- (b) What teaching methods do teachers use in teaching mathematics?
 1. Do you follow well the teaching methods that teacher used when teaching mathematics?
 2. Do you think these methods help you to feel that you are making progress in learning mathematics?
- (c) How do you relate with your mathematics teacher, how is his/her behaviour? Probe more on teacher feedbacks and other teachers characteristics towards teaching mathematics.
- (d) How do you fair in mathematics, is it an easy subject or not? Do you like it or not, if not why? Probe more even on subject content, medium of instructions and teaching pace.
- (e) Were the learning environment motivating or not, if not lets the pupils explain why?
- (f) Did the works of bad omen play a part in you mathematics examinations?

Theme III: How attribution of failure affects future performance in public grade nine mathematics examinations?

Probe for the following on the effects of attribution of failure based on three attribution dimension.

- (a) Were you satisfied with the low grade you obtained in mathematics
- (b) Whom did you blame for your low grades in mathematics and how did you react to the failure?
- (c) Is the cause of failure because of you, or due to other people or circumstances?

- (d) Is the cause of failure due to something that is under your control or out of your control?
- (e) In the future, will this cause of failure be present again in mathematics? Probe more on pupils expectations.
- (f) How do teachers treat you when giving feedback
- (g) How do you view your mathematics background? Probe more on pupils past academic history

What are the consequences of negative attributions in academic performance?

Thanking you for your cooperation

Appendix 3: Mathematics causal attribution scale -questionnaire for teachers

THE UNIVERSITY OF ZAMBIA

SCHOOL OF EDUCATION

**DEPARTMENT OF EDUCATIONAL PSYCHOLOGY, SOCIOLOGY AND SPECIAL
EDUCATION**

Dear respondent

I am a post graduate (masters) student at the University of Zambia, carrying out a research on **Causal Attributions of failure in grade nine mathematics examinations**. You have been selected to participate in this research. The information you will provide is purely for academic use and will be treated with highest degree of confidentiality. You are therefore required to be objective as you can in your responses. You need not to give the details of your identity.

INSTRUCTIONS:

Please indicate your response or answer to each question or statement by filling in or ticking only one option in the appropriate blank spaces provided.

SECTION A: BIO DATA

What is your gender?

Male [] **Female** []

Age: under 35 years [] 35-39 years [] 40-44years [] 45-49 [] above50-

Teaching experience (yrs) 5- 10 years [] 10-15 years [] 15-20years [] above
20 []

Educational Qualifications:

Teachers' Certificate []

Diploma Ed []

Bachelors' Degree []

Masters' Degree []

Post Graduate (other) []

SECTION B

Tick on the answer of your choice

Theme II: Teachers' causal attributions to the failure of grade nine pupils in public mathematic examinations

Internal attributions

1. Pupils failed because of my own lack of interest in teaching mathematics

Strongly Agree,	Agree	Disagree	Strongly Disagree
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2. Pupils failed mathematics examinations I lacked ability in teaching

Strongly Agree,	Agree	Disagree	Strongly Disagree
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3. Pupils failed mathematics examination because am not competent in teaching maths.

Strongly Agree,	Agree	Disagree	Strongly Disagree
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4. Pupils failed mathematics examination because they did not like me and other teachers.

Strongly Agree,	Agree	Disagree	Strongly Disagree
-----------------	-------	----------	-------------------

5. Pupils failed mathematics because I am not competent in teaching mathematics.

Strongly Agree,	Agree	Disagree	Strongly Disagree
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6. Pupils failed mathematics examination because in I never use to make the activity enjoyable.

Strongly Agree,	Agree	Disagree	Strongly Disagree
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7. Pupils failed mathematics examination because I never used to teach them good study habits or practice.

Strongly Agree,	Agree	Disagree	Strongly Disagree
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External attributions

8. Pupils failed mathematics because the classroom environments were not motivating

Strongly Agree,	Agree	Disagree	Strongly Disagree
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9. Pupils failed mathematics examination because of their frequent absenteeism and truancy in mathematics periods.

Strongly Agree,	Agree	Disagree	Strongly Disagree
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10. Pupils failed mathematics because they were not enough teaching and learning materials.

Strongly Agree,	Agree	Disagree	Strongly Disagree
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11. Pupils failed mathematics examination because teachers who used to teach them before were not competent to teach mathematics

Strongly Agree,	Agree	Disagree	Strongly Disagree
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12. Pupils failed mathematics examination because they don't like mathematic indicating that it is difficult.

Strongly Agree,	Agree	Disagree	Strongly Disagree
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13. Pupils failed mathematics examination because the odds worked against them.

Strongly Agree,	Agree	Disagree	Strongly Disagree
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14. Pupils failed mathematics examination because of negative peer influence

Strongly Agree,	Agree	Disagree	Strongly Disagree
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Thanking you for your cooperation

Appendix 4: In-depth interviews thematic questions for mathematics Teachers

THE UNIVERSITY OF ZAMBIA

SCHOOL OF EDUCATION

**DEPARTMENT OF EDUCATIONAL PSYCHOLOGY, SOCIOLOGY AND SPECIAL
EDUCATION**

Theme 1: Causal attributions of failure in grade nine public mathematic examinations

Teachers' internal attributions

1. In the last year's grade nine examinations did you have pupils who were not selected to grade ten or not?
 - (a) What was the general performance of the grade nine pupils in mathematics last year?
 - (b) According to your analysis what do you think caused such performance?

2. Probe for the following if not covered in the last bullet,
 - (a) Do you have ability to teach mathematics at this school, do you have confidence? If yes what makes you think so, if not why?
 - (b) Do you put more effort in teaching and preparing pupils for the examinations If yes how, if no why?
 - (c) Do you have interest in teaching mathematic? If yes what motivate you to develop such interest, if not what demotivate you not to have interest- probe on teachers' attitude, competence in teaching, how guidance is given on study habits, feedbacks and how they strive to make teaching enjoyable.

Teacher's external attributions

1. Why do you think pupils failed the examinations? Probe more on pupils been unlucky, absenteeism and truancy, interest, negative peer influence, negative attitude, exams difficult and influence of school type
2. According to your observations, is this school fully equipped with human and material resources? Probe on material and human separately if not covered in the previous question.
 - (a) If the answer is yes, in question '2' how do such resources affect the performance?
 - (b) If the answer is no, in question '2' how does their non-availability affect the performance?
3. How is the attitude of pupils towards learning mathematics and during examination preparations?

Theme III: How attribution of failure affects future performance of student

Probe for the following on the effects of attribution of failure based on three attribution dimension.

- (h) Were you satisfied with the low grade pupils obtained in mathematics
- (i) Whom did you blame for pupils low grades in mathematics and how did you react to the failure?
- (j) Is the cause of failure because of you or due to other people or circumstances?
- (k) Is the cause of failure due to something that is under your control or out of your control?
- (l) In the future, will this cause of failure be present again in mathematics? Probe more on teachers expectations.
- (m) How do you treat those pupils who fail class tasks when giving feedback?

- (n) How do you view mathematics background of most of the pupils who failed mathematics? Probe more on past academic history?
- (o) What are the consequences of negative attributions in academic performance?

Thanking you for your cooperation

Appendix 5: FGD for the Head Teachers, Deputy Head Teachers, Mathematics Heads of Department and Guidance and Counselling Teachers

THE UNIVERSITY OF ZAMBIA

SCHOOL OF EDUCATION

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY, SOCIOLOGY AND SPECIAL EDUCATION

Theme 1: Causal attributions of failure in grade nine public mathematic examinations

Teachers' internal attributions

2. In the last year's grade nine examinations did you have pupils who were selected to grade ten or not?

(c) How many were selected to grade ten?

(d) How many were not selected to grade ten but managed to repeat grade nine/eight?

(e) What was the general performance of the grade nine pupils in mathematics last year?

(f) According to your analysis what do you think caused such performance?

2. Probe for the following if not covered in the last bullet,

(d) Do teacher have ability in teaching mathematics at this school, do they have confidence?

If yes what makes you think so, if not why?

(e) Do teachers put more effort in teaching and preparing pupils for the examinations

If yes how, if no why? What actions are taken by the school authority to those pupils who don't put much effort in teaching mathematics and to those who exhibits much effort?

- (f) Do teachers at this school have interest in teaching mathematic? If yes what motivate them to develop such interest, if not what demotivate them not to have interest- probe on teacher's attitude, competence in teaching, how guidance is given on study habits, feedbacks and how they strive to make teaching enjoyable.

Teacher's external attributions

4. Why do you think pupils failed the examinations? Probe more on pupils' been unlucky, absenteeism interest, negative peer influence, negative attitude exams difficult and influence of school type.
5. According to your observations, is this school fully equipped with human and material resources? Probe on material and human separately if not covered in the previous question.
- (c) If the answer is yes, in question '2' how do such resources affect the performance?
- (d) If the answer is no, in question '2' how does their non availability affect the performance?

Theme III: How attribution of failure affects future performance of student

Probe for the following on the effects of attribution of failure based on three attribution dimension.

- (p) Were you satisfied with the low grade pupils obtained in mathematics
- (q) Whom did you blame for pupils low grades in mathematics and how did you react to the failure?
- (r) Is the cause of failure because of you, (all educators involved) or due to other people or circumstances?
- (s) Is the cause of failure due to something that is under your control or out of your control?

- (t) In the future, will this cause of failure be present again in mathematics? Probe more on teachers expectations.
- (u) How do you treat those pupils who fail class tasks when giving feedback?
- (v) How do you view mathematics background of most of the pupils who failed mathematics? Probe more on past academic history
- (w) What are the consequences of negative attributions in academic performance?

Thanking you for your cooperation

Appendix 6: Exemption from full ethical clearance