

**DETERMINANTS OF STANDARD ONE PUPILS' ACHIEVEMENT IN
LITERACY AND NUMERACY IN GUCHA DISTRICT,
KISII COUNTY KENYA**

BY

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DECLARATION

I declare that this thesis is my original work and has not been presented in any other university/institution for consideration of any certification. This research thesis has been complemented by referenced sources duly acknowledged. Where text, data (including spoken words), graphics, pictures or tables have been borrowed from other sources, including the internet, these are specifically accredited and references cited using current APA system and in accordance with anti-plagiarism regulations.

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DEDICATION

I dedicate this thesis to my wife Beatrice Nyanchoka, my Sons Polycarp and Seth and my daughter Charity Mercy Nyarangi who have remained a source of encouragement, motivation and inspiration throughout the time I took pursuing this degree. Equivalently, I devote this thesis to my parents; Dorcas Bisieri and the late Mzee Naftali Ong'ang'a, who believed in my academic potentials and success.

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TABLE OF CONTENTS

DECLARATION.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT.....	iv
TABLE OF CONTENTS	v
LIST OF TABLES	ix
LIST OF FIGURES	x
OPERATIONAL DEFINITION OF KEY CONCEPTS AND TERMS.....	xi
ABBREVIATIONS AND ACRONYMS.....	xii
ABSTRACT.....	xiii
CHAPTER ONE	1
INTRODUCTION AND CONTEXTUALIZATION OF THE STUDY	1
1.0 Introduction.....	1
1.1 Background to the Study.....	1
1.2 Statement of the Problem.....	8
1.2.1 The Purpose of the Study.....	9
1.2.2 Objectives of the Study.....	9
1.2.3 Hypotheses of the Study	10
1.3 Significance of the Study	11
1.4 Delimitations and Limitations of the Study	12
1.4.1 Delimitations of the Study	13
1.5 Assumptions of the Study	14
1.6 Theoretical and Conceptual Framework	14
1.6.1 Theoretical Framework.....	14
1.6.1.1 Ecological Systems Theory.....	15
1.6.1.2 Self-efficacy theory.....	19

1.6.2 Conceptual Framework	21
CHAPTER TWO	24
REVIEW OF RELATED LITERATURE	24
2.0 Introduction.....	24
2.1 Pupils’ Literacy and Numeracy Achievement	24
2.2 Determinants of academic performance in schools	26
2.2.1 Pupils’ Achievement in Literacy and Numeracy	27
2.3 Gender and pupils’ achievement in literacy and numeracy	35
2.3 Teachers’ Self-efficacy and Pupils’ achievement.....	37
2.4 Type of School and Pupils’ Achievement in Literacy and Numeracy.....	42
2.5 Predictors of Pupils’ Literacy and Numeracy Achievement.....	44
2.6 Summary of Literature Reviewed.....	48
CHAPTER THREE	49
RESEARCH METHODOLOGY	49
3.0 Introduction.....	49
3.1 Research Design.....	49
3.1.1 Variables of the Study.....	51
3.1.2 Location of the Study.....	52
3.2 Target Population.....	54
3.3 Sampling Technique and Sample Size.....	54
3.4 Research Instruments	57
3.4.1 Achievement Checklist	57
3.4.2 Teachers’ Self-Efficacy Scale.....	58
3.4.3 Pupils’ Achievement in Literacy Proforma	58
3.5 Piloting of the Research Instruments	59
3.5.1 Validity of the Instruments	59
3.5.2 Reliability of the Instruments.....	60
3.6 Data Collection Techniques	61

3.7 Data Analysis Procedures	63
3.8 Logistical and Ethical Considerations	63
CHAPTER FOUR.....	65
PRESENTATION OF FINDINGS, INTERPRETATION AND	
DISCUSSION	65
4.0 Introduction.....	65
4.1 General and Demographic Information of the Respondents.....	66
4.1.1 Pupils’ Demographic Information	66
4.1.2 Teachers’ Demographic Information	67
4.1.2 Pupils’ Achievement in Literacy and Numeracy	67
4.2.2 Pre-Primary School Learning Experiences and Pupils’ Achievement in Literacy and Numeracy.....	69
4.2.3 Gender Differences in Literacy and Numeracy Achievement	73
4.2.4 Teachers’ Self-efficacy and Achievement	77
4.2.4 Type of School Attended and Pupils’ Achievement in Literacy and Numeracy	82
4.2.5 Predictive value of Pre-Primary School Learning Experiences and Teachers’ Self-efficacy.....	85
CHAPTER FIVE	89
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	89
5.0 Introduction.....	89
5.1 Summary of Findings.....	89
5.2 Conclusions.....	91
5.3 Recommendations.....	92
5.4 Recommendations for Further Research.....	95
REFERENCES.....	97
APPENDICES	112
Appendix I: Letter of Consent	112

Appendix II: Checklist for Pre-Primary School Learning Experiences For	113
Standard one Teachers	113
Appendix III: Self- Efficacy Scale for standard one Teachers	117
Appendix IV: Proforma for individual pupils’ literacy and numeracy achievement scores at end of term	119
Appendix V: Research Authorization by Graduate School Kenyatta.....	120
University.....	120
Appendix VI: Authority Letter to Conduct a Research by the MoEST	121

LIST OF TABLES

Table 3. 1 : KCPE Ranking of Counties in 2013	53
Table 3. 2: Distribution of Pupils between Public and Private Schools	56
Table 3. 3: Cronbach’s Reliability Test Results	61
Table 4. 1: Pupils’ Demographic Information	66
Table 4. 2: Distribution of Teachers per Type of School	67
Table 4. 3: Attendance of Pre-Primary School and pupils’ Literacy and Numeracy mean scores	68
Table 4. 4: Pupils’ Literacy and Numeracy Achievement	70
Table 4. 5: Distribution of literacy and numeracy scores	70
Table 4. 6: ANOVA results of those who attended and those who did not attend pre-primary school.....	71
Table 4. 7: ANOVA for gender differences in Literacy and Numeracy achievement	74
Table 4. 8: Pupils’ literacy and numeracy achievement by gender	74
Table 4. 9: Teachers’ Self- Efficacy and Pupils’ Achievement.....	77
Table 4. 10: ANOVA of Teachers’ Self- Efficacy Levels across Items	79
Table 4. 11: ANOVA Overall Self-efficacy and P-values in Literacy and Numeracy.....	80
Table 4. 12: Type of School and Pupils’ Scores in Numeracy and Literacy	82
Table 4. 13: ANOVA Test-results	83
Table 4. 14: Self-efficacy and pupils’ achievement mean scores.....	85
Table 4. 15: ANOVA ^b on Predictive value of Pupils’ achievement means.	87

LIST OF FIGURES

Figure1. 1: Bronfenbrenner's Ecological Systems Diagram	16
Figure1. 2: Conceptual Framework Diagram	22

OPERATIONAL DEFINITION OF KEY CONCEPTS AND TERMS

Academic Achievement: Pupils' average scores in numeracy and literacy tests

Gender : Being a boy or a girl.

Learning experiences : Ability to do basic numeracy and literacy tasks in standard one.

Literacy : Basic ability to reading and writing.

Numeracy : Basic skills in mathematics.

Pre-primary School : Organized educational programme meant to prepare children for primary school for example nursery schools and kindergartens.

Self- efficacy : Beliefs about one's ability help learners do better in educational tasks.

Standard one : The first grade in primary school in Kenya

Type of school : Refers to public or private school.

ABBREVIATIONS AND ACRONYMS

ANOVA	:	Analysis of variance
CBO	:	Community Based Organization
ECDE	:	Early Childhood Development and Education
ECE	:	Early Childhood Education
FBO	:	Faith Based Organizations
FPE	:	Free Primary Education
GoK	:	Government of Kenya
GPA	:	Grade Point Average
KCPE	:	Kenya Certificate of Primary Education
KCSE	:	The Kenya Certificate of Secondary Education
KNEC	:	The Kenya National Examinations Council
MoEST	:	Ministry of Education, Science and Technology
NAEP	:	National Assessment of Education Progress
NASMLA	:	National Assessment System for Monitoring Learners' Achievement
NFER	:	National Foundation for Educational Research
NGO	:	Non -Governmental Organizations
PLNT	:	Primary Literacy and Numeracy Test
SAEMA	:	Sham Ahanta East Metropolitan Assembly
SFDAPO	:	School Facility Descriptive and Students' Performance Questionnaire
SFDQ	:	School Facility Descriptive Questionnaire
SPSS	:	Statistical Package for Social Sciences

ABSTRACT

Pre-primary school learning experiences plays a critical role in laying a strong foundation for pupils' later academic progression and achievement. The experiences equip learners with the requisite competencies and abilities for managing formal and life-long learning including basic literacy and numeracy skills. In Kenya, the entry criteria for joining standard one is six years irrespective of whether one has gone through pre-primary school or not. This means that pre-primary school is not compulsory. In a typical standard one classroom in Kenya, pupils may have varied pre-primary school learning experiences. The purpose of this study was to establish standard one pupils' academic achievement in literacy and numeracy. The study further investigated the influence of pre-primary school learning experiences, teachers' self-efficacy, pupils' gender, and type of school on standard one pupils' literacy and numeracy achievement. Albert Bandura's Self-Efficacy and the Ecological Systems Theory by Urie Bronfenbrenner theories guided the study. *Ex post facto* research design was used. The independent variable of the study was standard one pupils' achievement in literacy and numeracy, while dependent variables were; pupils' pre-primary school experiences, gender of pupils, teachers' self-efficacy and type of school. The study was conducted in Gucha District of Kisii County, Kenya. The target population was both public and private primary schools in the District. All standard one pupils and their teachers participated in the study. Purposive and stratified random sampling techniques were employed. The study sample consisted of 154 pupils and eight teachers. Descriptive and inferential techniques were employed to analyze data. Statistical Package for Social Sciences (SPSS) was utilized in data analysis. Analysis of Variance (ANOVA) was used to test the null hypotheses at 0.05 level of significance. The findings of the study revealed that pupils' performed better in numeracy compared to literacy. Pre-primary school learning experiences, teachers' self-efficacy, and type of school attended influenced pupils' achievement in literacy and numeracy. The study underscored the crucial role played by pre-primary school experiences in promoting academic achievement. The main recommendation is that, in order to improve pupils' achievement in literacy and numeracy, parents and head teachers should ensure that children have quality pre-primary school experiences so that they may have adequate school readiness skills to help them to cope with standard one syllabus. Further it was recommended that the government should put policies in place to make pre-primary school mandatory to enhance academic performance at primary and subsequent levels.

CHAPTER ONE

INTRODUCTION AND CONTEXTUALIZATION OF THE STUDY

1.0 Introduction

This chapter presents the background to the study. The section outlines the statement of the problem, purpose of the study, research objectives, hypotheses and significance of the study. Further, this chapter presents the study delimitations and limitations, study assumption and the operational definitions of terms.

1.1 Background to the Study

Commencing primary schooling has been perceived as one of the most challenging and yet important transitions in a child's life. It poses major challenges in early childhood education. Initial success at school, both socially and intellectually, leads to a virtuous cycle of achievement and can be a critical factor in determining a child's ability in adjusting to the demands of the school environment and future progress. Research evidence have revealed that the way in which transitions are take place not only make a difference to a child in the early months of a new situation, but may also have long-term impact, because of whether the child has adequate prior experiences make him/her feel competent and successful on tasks involved in formal learning which would go a long way in determining subsequent experiences (Fabian and Dunlop 2002a; 2003; 2006 & 2007). This experiences would determine whether transition from pre-primary is smooth or not, and further whether one can cope up with the ensuing

academic challenges including literacy and numeracy achievement in early grades.

Proficiency in reading, writing and mathematics are major indicators of social wellbeing for all people, providing not only the skills for meaningful interactions with the world, but also the foundations for success in education and beyond school (Commission for Australian Government-COAG, 2008). Pre-primary school education can equip the learner with the necessary early literacy and numeracy requisite skills and competencies that promote the overall academic achievement in later grades (Harrison, Goldfeld, Metcalfe and Moore, 2012).

Studies have shown that early years of an individual is a critical period, where the path-way of an individual's lifetime social, emotional and intellectual outcomes is founded. This therefore underscores the need for the provision of quality, accessible and universal pre-primary school education (Commission for Australian Government- COAG, 2008; Harrison, Goldfeld, Metcalfe and Moore, 2012; Harrison, Goldfeld, Metcalfe and Moore, 2012).

It is further argued that children, who successfully complete their pre-primary school programmes before joining standard one, are often likely to be well prepared, ready to cope with primary school curriculum tasks and can manage academic demands encountered at that level effectively (MoE, 2006; Myers and

Lander, 1989; UNESCO, 2005; Murungi, 2009). This is even more salient with children from disadvantaged socio-economic backgrounds or simply children at risk (Harrison et al, 2012).

Notwithstanding the benefits associated with quality pre-primary school education, the same is yet to be made compulsory and a requisite requirement for joining standard one in Kenya. In Kenya the gross enrolment rate at pre-primary school level is estimated at less than three quarters of the eligible number of children for the grades (UNESCO, 2005 & Murungi, 2009). This means that many eligible pre-primary school children are still not enrolled in pre-primary schools or simply join standard one without the necessary pre-primary school experiences, which could be undermining children's readiness to cope with literacy and numeracy requirements in school. This study was to determine standard one pupils' pre-primary school learning experiences' influence on pupils' literacy and numeracy achievement.

Linver, Davis-Kean and Eccles (2011) and Myers and Lander (1989) argue that when considering the effectiveness of primary school systems, there is often a tendency of overlooking the crucial early experiences that a child acquires before he/she commences formal schooling. Available evidence shows that early learning experiences can have significant positive effects on a child's primary school readiness, enrolment, progress and performance which could be manifest in later grades. The early years of life therefore provide the best

opportunity for laying firm foundations for the children's future learning competencies including success in education (Barnet, 1995; COAG, 2009).

Globally, due to the benefits accrued from pre-primary school learning experiences, in the United Kingdom (UK) for instance, the law and policies now require that all local authorities provide compulsory basic pre-primary school education for all three to four year old children before they can commence formal elementary education.

In China on the other hand, in appreciation of the role pre-primary school education can play in enhancing learning literacy and numeracy achievement in latter levels of learning, the government of China invests heavily in pre-primary school education from the National Fund (Marcon, 1999). This, it is argued, is because early and timely intervention can make positive long-lasting positive effects on an individual's later academic achievement. In Kenya, there is no such systematic evidence. This made the basis for the current study.

Studies done in the USA also reveal that children from poor families (disadvantaged) who have got adequate pre-primary school learning experiences are less likely to repeat a grade or be placed in a special needs education programme. The benefits accrued from the 1960s head-start programme are a case in point (Barnett, 1995; Randerson, 2008). This revelation underscores the critical role played by pre-primary school experiences in improving children's

learning outcomes. Performance in local and national examinations can be attributed to the level of preparedness of the learners.

This study investigated the influence of pre-primary school learning experiences, teachers' self-efficacy, gender and type of primary school attended on pupils' learning out-comes in literacy and numeracy. Halpern and Myers, (1985) also argue that well-implemented early childhood education programmes can have significant long-term effects on school progress through increased transition to the next grade, reduced greatly the need for special-needs education and increased completion rates at high school. It is therefore expected that teachers would play a key role in promoting well-implemented programmes for young children. This invokes on teachers with high self-efficacy to do exactly that. It is on this premise that the current study aimed at establishing the extent to which pre-primary school learning experiences and teachers' self-efficacy beliefs predicted pupils' achievement in literacy and numeracy.

Studies have further shown that earlier start in pre-primary school with more educationally oriented programmes would decrease the number of later school dropouts and also increase the completion and transition rates to the next grade (Gakuru, 1992; Myers, 1993; Randerson, 2008). A report by UNESCO (2006) shows that in Kenya only about 35% of the children access well implemented ECD programmes before joining standard one. This would mean that more than half (50%) of the eligible children may be proceeding to lower primary school

without adequate basic literacy and numeracy skills necessary for managing subsequent primary school curricula. A study by Murungi (2013) reveals that enrolment in pre-primary schools in Kenya was just above 50% of the eligible pupils. This means that most pupils do not go through pre-primary school programmes and therefore lacked the necessary requisite skills and readiness to manage standard one syllabus.

Konstantopoulos (2006) argues that school predictors consistently account for more than 50% of the variation on average students' academic achievement. This, he attributes to teachers' characteristics including teachers' self-efficacy. Accordingly teacher's self-efficacy was more influential on learners' overall scores than was school factors (Randerson, 2008).

The Kenya constitution which was promulgated in 2010 provides for free and compulsory basic education as a basic human right to every Kenyan child regardless of their political, social, economic or religious backgrounds. This includes access to quality primary school education (GoK, 2010). This provision however, does not include compulsory and free pre-primary school education. According to a Task Force report on the re-alignment of the education sector to the constitution of Kenya of 2010 (GoK, 2011), it was revealed that pre-primary education has not been fully integrated into the current system of education. This means that pre-primary school experiences are

not a prerequisite requirement to commencing primary school education in Kenya. This study therefore set out to investigate whether children who join standard one have the basic literacy and numeracy experiences.

In Kenya, a task force on education (MoE, 2006), reported that pre-primary school experiences were important although they were not compulsory. In South Africa, the system of education requires a child to have at least one year of pre-primary school experiences. In Malaysia children have to have at least two years' pre-primary school while in Singapore they should have three years and in South Korea they should have three years pre-primary school experiences. In Israel on the other hand a two-year' experience before commencing formal schooling is recommended. In Kenya, the policy requirement of at least two years of pre-primary education is not fully implemented. This makes pre-primary school education largely optional to many parents and this means that standard one pupils could be having varied pre-primary school experiences.

In Kenya, in a typical primary school class, there would be pupils with differential pre-primary school learning experiences (MoE, 2006). In such a scenario, primary school teachers face not only the challenge of handling large classes due to the Free Primary Education (FPE), but having to deal with children of varying levels of pre-primary school learning experiences and school readiness (Ngaruiya, 2004). Pupils without pre-primary school learning experiences are most likely to perform poorly in class work including

subsequent examinations. The current study was to find out the influence of pre-primary school learning experiences' on pupils' literacy and numeracy achievement. In Kenya, available studies have mainly focused on academic achievement in upper primary and secondary school levels (Reche, Bundi & Mbugua, 2012). The current study was focused on lower primary school pupils' literacy and numeracy achievement.

1.2 Statement of the Problem

With the introduction of FPE in Kenya in 2003, primary school enrolment has increased greatly over the recent years. FPE policy in Kenya requires that every child attend primary school irrespective of their backgrounds including having attended pre-primary school. Therefore, in a typical standard one class, there would be learners with different levels of pre-primary school learning experiences which influence their academic achievement.

The Kenya constitution promulgated in 2010 provides for free and compulsory basic education as a human right for every Kenyan child regardless of one's social, political, economic or religious orientation. However, despite this provision, pre-primary school education is yet to be fully incorporated within the main stream of basic education which makes it compulsory and mandatory for every child of school going age. This means that some children join standard one without adequate pre-primary school learning experiences. Studies have further shown that Gucha district is among the districts whose standard three

reading and numeracy achievement rates below those of the national level. The question that arises is whether pupils joining standard one in Gucha District attended preprimary school had whether they possess adequate pre-primary school learning experiences to enable them cope with literacy and numeracy tasks in standard one and subsequent grades. It is on this premise that the current study was based. The study investigated standard one pupils' literacy and numeracy achievement and the extent to which pre- primary school learning experiences and teachers' level of self-efficacy predicted pupils' achievement in literacy and numeracy.

1.2.1 The Purpose of the Study

The purpose of this study was to establish standard one pupils' achievement in literacy and numeracy and further investigate the influence of pre-primary school learning experiences, teachers' self-efficacy, pupils' gender, and type of school on pupils' achievement in literacy and numeracy among standard one pupils.

1.2.2 Objectives of the Study

The following were the study objectives:

- (i) To compare standard one pupils' achievement in literacy and numeracy in Gucha District between those with pre-primary school learning experiences and those without.

- (ii) To establish whether pre-primary school learning experiences influence pupils' achievement in literacy and numeracy.
- (iii) To find out whether there is significant gender differences in pupils' achievement in literacy and numeracy.
- (iv) To establish whether teachers' self-efficacy influence pupils' achievement in literacy and numeracy.
- (v) To compare standard one pupils' literacy and numeracy achievement by type of school attended.
- (vi) To establish the extent to which pre-primary school learning experiences and teachers' self-efficacy together predict pupils' achievement in literacy and numeracy.

1.2.3 Hypotheses of the Study

The null or statistical hypotheses of the study were;

H0:1 there is no significant difference in pupils' achievement in literacy and numeracy between pupils with pre-primary school learning experiences and those without;

H0:2 there is no significant gender difference in literacy and numeracy among standard one pupils;

H0:3 there is no significant difference in achievement in literacy and numeracy between standard one pupils in public and private primary schools;

H0:4 There is no significant difference in Literacy and Numeracy achievement between standard one pupils taught by teachers with high self-efficacy and those taught by teachers with low self- efficacy;

H0:5 Pre-primary school learning experiences and teachers' self-efficacy together have no significant predictive value for determining pupils' achievement in literacy and numeracy.

1.3 Significance of the Study

The findings of this study may provide vital information on the extent to which pre-primary school learning experiences influence pupils' achievement in literacy and numeracy. The results are likely to trigger a new look and appreciation of the need for accessible, quality and relevant pre-primary school programmes in giving young children a head-start necessary to help them cope with the lower primary curriculum.

Results on teachers' level of self-efficacy may be used by school managers and head teachers in identifying intrinsically motivated teachers for lower primary classes particularly standard one class where identification and enhancement of learners competences is crucial. The findings would be useful to both public and private school managers in ensuring that children enter standard one with the necessary and adequate pre-primary school learning experiences for better academic achievement in primary school and subsequent academic levels.

Parents and other caregivers may find these findings important in re-energizing their effort in mobilizing available resources to provide quality pre-primary school education for their children in order to ensure better academic achievement in subsequent grades. The Government of Kenya (GoK) too, through the Ministry of Education may use the findings of this study in redefining the place of pre-primary school education in Kenya in promoting smooth transition from pre-school to lower primary grades. Further, the Ministry of Education, Science and Technology (MoEST) may use the findings of this study when reviewing and implementing educational policies on entry criteria to standard one in order to promote academic achievement at primary school and higher grades.

Other stakeholders including Non-governmental Organizations (NGOs), Faith based Organizations (FBOs) and Community Based Organizations (CBOs) may use the results in redirecting their resources and efforts towards providing quality and accessible Early Childhood programmes geared towards giving all children the necessary requisite skills and competencies for primary school readiness.

1.4 Delimitations and Limitations of the Study

Delimitations and limitations of the study are discussed in the following sub-sections.

1.4.1 Delimitations of the Study

This study was conducted in Gucha District, Kisii County, Kenya. Specifically the study was delimited to standard one class in public and private primary schools in Gucha District. This was because the researcher wanted to establish the degree to which children entering primary schools' competencies in key literacy areas; literacy and numeracy. The study focused on pupils' literacy and numeracy achievement because they form the basis of formal learning.

Although there are many factors which could influence pupils' achievement in literacy and numeracy this study only focused on the influence of pre-primary school learning experiences, gender, teachers' self-efficacy and type of school.

1.4.2 Limitation of the Study

The limitations of the study included focusing only on standard one rather than the whole lower primary grades however adequate sample was used to provide a broader picture of children's entry to primary school behaviour. Another limitation was the small number of participating schools which was due to the fact that the district had few public and private primary schools. Data was also to be collected in stages which meant that the influence of other extraneous variables could not be ruled out. However, the research did collect data timely and promptly to minimize their effects on the results of the study.

1.5 Assumptions of the Study

The assumptions of this study were that teachers' levels of self-efficacy varied significantly between teachers in public and their counterparts in the private schools. It was also the assumption of the researcher that there were pupils who joined standard one without adequate or no pre-primary school learning experiences. Further, it was assumed that both public and private primary schools used the same curriculum. Pupils' achievement would be comparable if they had similar learning experiences.

1.6 Theoretical and Conceptual Framework

In this sub-section, the researcher describes the theoretical framework which guided this study. The conceptual framework diagram is also illustrated.

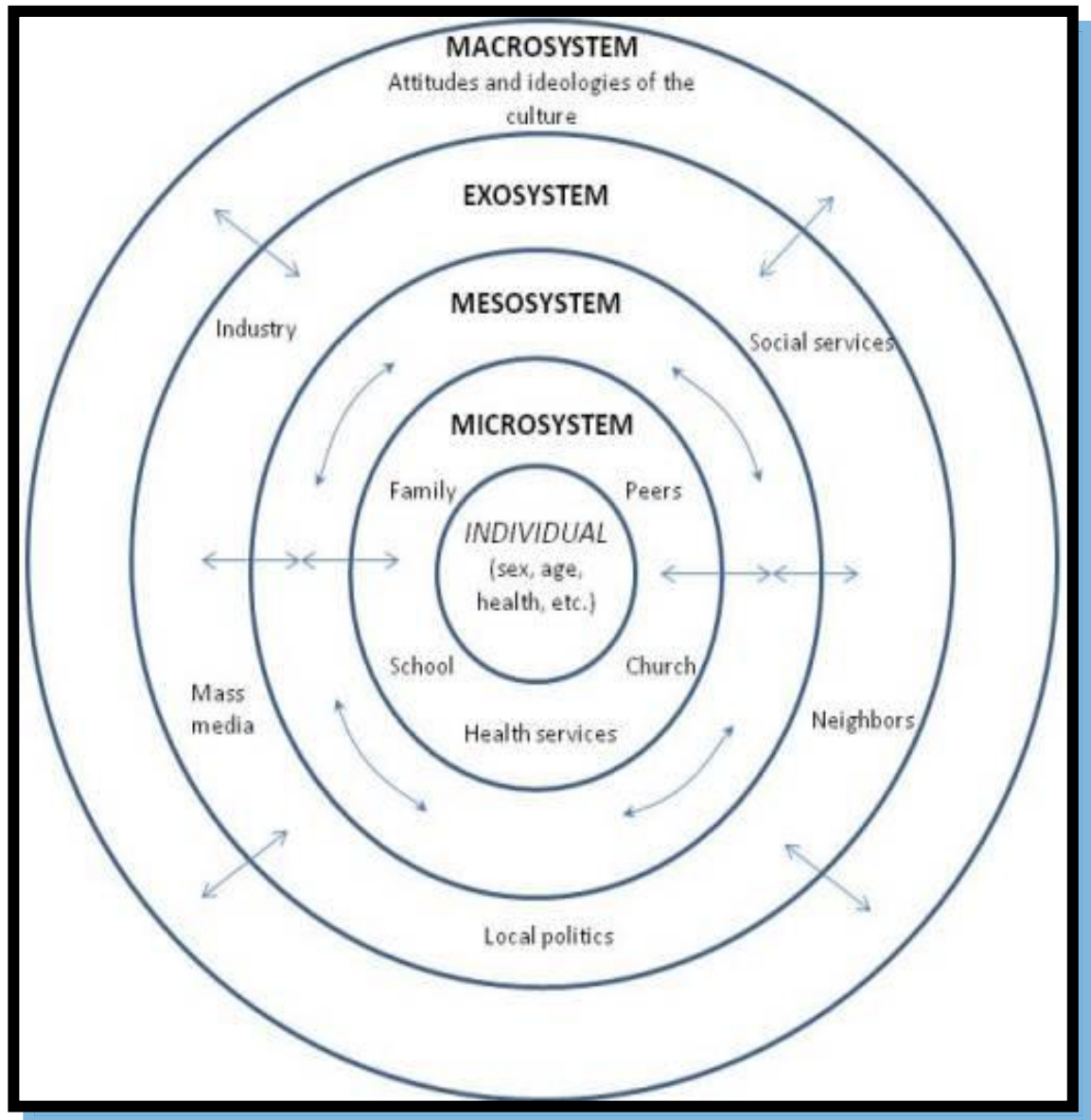
1.6.1 Theoretical Framework

This study was guided by two theories; Ecological Systems Theory by Urie Bronfenbrenner (1979) and Self-efficacy theory by Albert Bandura (1997). Ecological systems theory expounds on the influence of one's immediate environment on one's growth and development outcomes. The theory applies well to pre-primary school experiences' influence on pupils' academic achievement. The theory however does not have any aspect of teachers' self-efficacy, hence the use of Bandura's self-efficacy theory.

1.6.1.1 Ecological Systems Theory

The ecological systems theory is sometimes referred to as development in context or human ecology theory (Kail, & Cavanaugh, 2010). The theory explains the phenomenon of child development in the context of environmental input. That is, how the ecology (environment) affects the child's growth and development. The theory postulates five environmental (ecological) systems with which the child interacts and which helps in shaping the growth and development outcomes of the child. According to this theory, there are five ecological subsystems that are interconnected and interplay to influence the individual's growth and development. Bronfenbrenner presents the idea of ecological systems diagrammatically in order to drive home the point of the interactions and influences that may impact positively and negatively on an individual.

Figure 1. 1: Bronfenbrenner's Ecological Systems Diagram



Source: (Kail, & Cavanaugh, 2010)

The Micro system; which refers to institutions and groups that most immediately and directly impact the child's development including family, school, religious institutions, neighbourhoods and peers. The *meso-system*; they are the interconnections between the Microsystems interactions between the family and teachers, relationship between the child's peers and the family.

The *exo-system*; involves links between a social setting in which the individual does not have an active role and the individual's immediate context. For instance, a parent's or child's experiences that requires more travel, which might increase conflict with the other parent and change patterns of interaction with the child.

The *macro-system*; describes the culture in which individuals live. Cultural contexts include developing and industrialized countries, socio-economic status, poverty, and ethnicity. A child's parent(s), his/her school, and his/her parents' work place are all part of the larger cultural context. The macro-systems evolve over time because each successive generation may change the macro-system, leading to their development in a unique macro-system.

The *chrono-system*; this is patterning of environmental events and transitions over the life course, as well as socio-historical circumstances. According to Kail and Cavanaugh (2010), the child's biological in-put also can be an important micro system in affecting the child's development. Hence the theory is lately

referred to as “bio-ecological systems theory”. As per this theoretical construct, each system contains roles, norms and rules which may shape psychological development.

Human ecology or “*environments*”; from family to economic and political structures have come to be viewed as part of the life course from childhood through adulthood. The theory explains that individuals move through a series of life transitions, all of which necessitate environmental support and coping skills. The individual’s environment and the ecological model can be a good basis of understanding growth and development of an individual (Santrock, 2007). Based on this model, it is believed that the early interactions of the child’s genes and biological personality traits with the environmental experiences would affect significantly the way a child grows and develops. Consequently, a child’s early experiences have a major influence on the child’s development.

A more encouraging and nurturing environment will have a positive effect on the overall achievement and success in education. This underscores the important role early learning experiences can have on the individual’s academic achievement. This theory was selected because it relates well with the current study which focuses on pre-primary school learning experiences as a predictor of pupils’ academic achievement in literacy and numeracy.

1.6.1.2 Self-efficacy theory

According to Bandura, self-efficacy is a powerful mechanism of human agency, contributing to the decisions people (teachers) make about actions they will pursue. Self-efficacy is important because it can predict human behavior and perceptions of efficacy determines the tasks people perform and the amount of effort they put, persistence towards a goal and overall achievement (Bandura, 1997).

Bandura explains that self-efficacy refers to one's capabilities to organize and execute the courses of actions required to produce desired outcomes. This means that, teachers' beliefs on themselves that they can help learners to learn and master the content vary depending on their perceived competence in the subject. Bandura (1997) argues that; outcome expectancy is related to self-efficacy and that it is the physical, social, and self-evaluative consequences of a specific level of attainment. The outcomes associated with performance for example social recognition for the teachers affect pupils' performance. Therefore teachers' self-efficacy reflects beliefs about their capability to bring about the desired learning outcomes.

Outcome expectations play a very important role in individual motivation that is the anticipation of personal praise may positively influence one's decisions to pursue a behavior, but it is one's perceptions of efficacy for completing that behavior which will predict the level of attainment one will finally achieve.

According to Bandura (1997) efficacy is constructed through individuals' cognitive processes. The four sources are enactive mastery experiences, vicarious experiences, social persuasion, and physiological and emotional states. Enactive mastery experiences refer to those experiences individuals' successfully complete leading higher attainment. For example focusing on the individual while teaching, motivates learners and leads to better academic achievement. Vicarious experience refers to those experiences acquired when they see others successfully performing the behaviors. For instance, new teachers observing and model experienced teachers as they teach.

Bandura (1997) further explains that vicarious successes tend to raise individuals' efficacy beliefs whereas failures tend to lower them. Social persuasion is offered verbally in the form of performance feedback (good work) and does not contribute much in the formation of self-efficacy beliefs like enactive and vicarious experiences. The last source of information influencing the formation of self-efficacy beliefs is physiological and affective states which include anxiety, stress, arousal, and fatigue. Self-efficacy theory was selected for this study because self-efficacy plays a very important role in human behaviour and is linked to behaviour and teacher self-efficacy is one of the variables in this study which may be influencing pupils' literacy and numeracy.

1.6.2 Conceptual Framework

Figure 1.1 presents the conceptual framework of the study. It provides an illustration of the conceived interactions between the independent and dependent variables. Academic achievement in literacy and numeracy can be attributed to and/or influenced by a number of factors. In this case pupils' achievement in literacy and numeracy may be influenced by pupils' pre-primary school learning experiences, teachers' levels of self-efficacy, type of school or gender of the pupils. This study was to find out the influence of the variables' on pupils' achievement in literacy and numeracy.

Figure1. 2: Conceptual Framework Diagram
 (Independent Variables) (Dependent Variable)

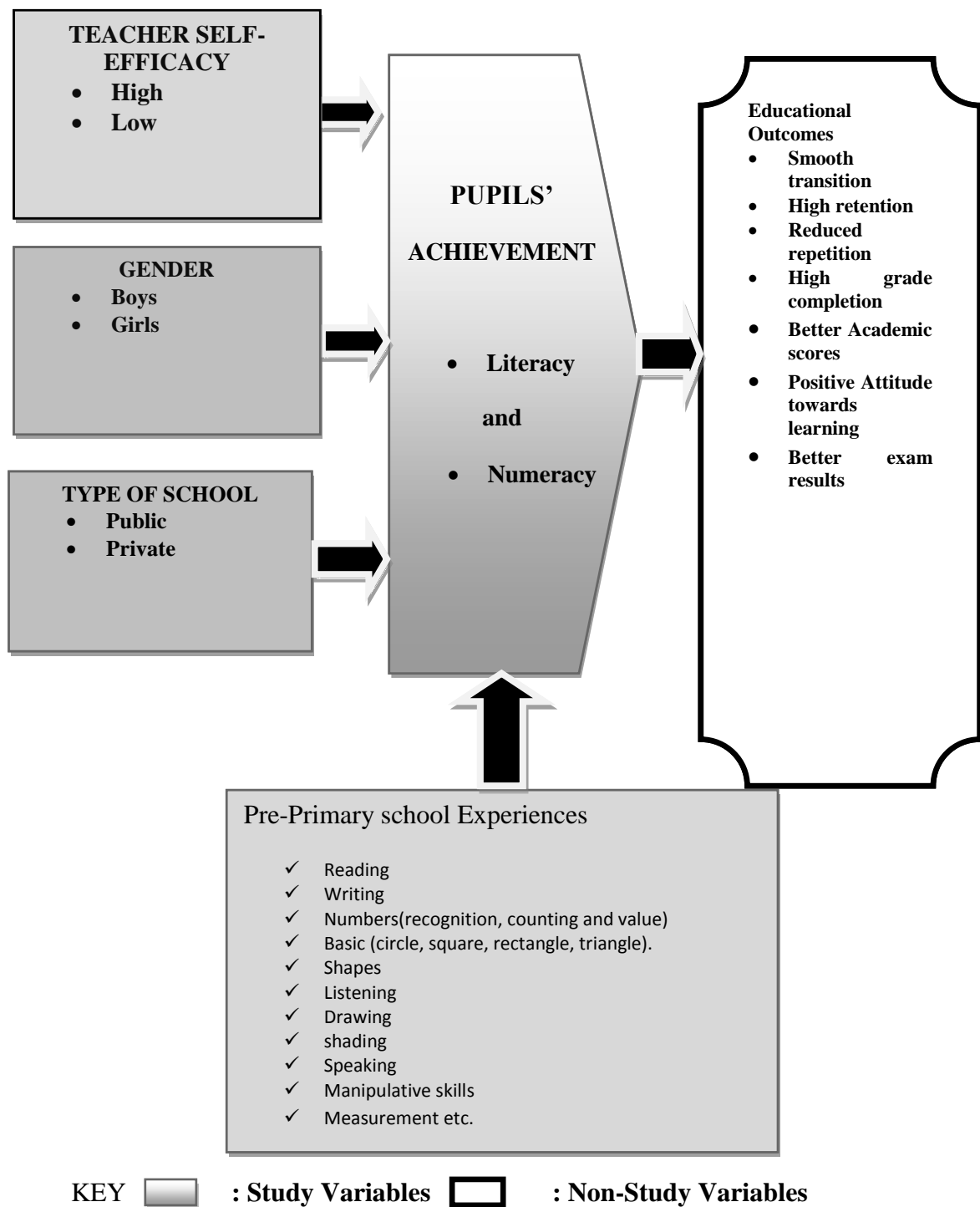


Figure 1.1 shows the variables which may be influencing pupils' achievement in literacy and numeracy. Pre-school experiences and teacher self-efficacy influence pupils' literacy and numeracy achievement which in turn would impact on educational outcomes. Gender and type of school are the other variables which influence pupils' achievement in literacy and numeracy.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Introduction

In this chapter the researcher has presented literature on literacy and numeracy achievement and the study variables which include; pre-primary school learning experiences, gender differences, teachers' self-efficacy and type of school. The researcher has also provided a summary of the literature reviewed.

2.1 Pupils' Literacy and Numeracy Achievement

Basic literacy and numeracy can be described as a learner's ability to read, write and use numbers in organising and communicating ideas effectively. Lewis (2010) explains that literacy is the ability to read and write which is basic for all education. COAG (2008) explains that literacy and numeracy refer to the skills needed to communicate ideas and make sense of the world through language and numbers. Therefore proficiency in reading and writing and mathematics are major indicators of social wellbeing for all people by providing not only the skills for interacting with the world, but also the foundation for further education in and beyond school (ABS, 2006).

According to UNESCO (2005), literacy is the heart of basic education for all. Goodwin (2000) indicates that children's reading skills are important to their success in school and work. In addition reading can be a fun and imaginative

activity for children, which opens doors to all kinds of new worlds for them. Reading and writing literacy are important ways in which we use language to communicate. Literacy is fundamental for learning in school and has an impact on pupils' ability to participate in society and to understand important public issues. Literacy therefore provides the foundations upon which skills need in the labour market are anchored.

Fleer (2000) on the other hand argues that academic achievement can be defined as the extent to which a learner is profiting from instructions in a given area of learning for example language and mathematics activities among other aspects of the academic programme which is measured by examinations or continuous assessment. Accordingly, Literacy and numeracy achievement refers to how well a learner accomplishes his or her academic tasks in reading, writing, speech and mathematics tasks. At pre-primary school context, literacy can be measured through observation of a child's ability in identifying sounds and letters, drawing, scribbling, reading, number recognition and counting among other related skills.

Achievement in literacy (performance) is an index of a learner's future in today's world. In school, children's success is measured by literacy performance or how well they meet the goals of the set targets often referred to as academic performance/achievement. Academic achievement is the outcome of education or the extent to which learners, teachers or institutions have

achieved their educational goals (Fabian, 2007). The common indicators of academic performance are the learner's scores and overall performance in class work.

UNICEF (2007) observes that academic achievement at preschool and lower grades of primary school can predict an individual's future academic success in the subsequent levels of education. According to Gay (1981), various factors determine the level and quality of learners' literacy achievement. Research has shown that literacy achievement and success in the middle grades can be attributed to a myriad of individual, family, school, and community factors (Felner, Jackson, Kasak, Mulhall, Brand and Flowers, 1997). The factors may either promote or inhibit academic success, and often begin much earlier in life.

Kamau (2010) investigated teaching methodology and pre-primary school pupils' achievement in mathematics in lower primary schools in Central province. However, the study did not investigate the influence of pre-primary school learning experiences, gender differences, teacher efficacy and type of school, which were addressed in this study.

2.2 Determinants of academic performance in schools

Academic achievement is a function of many different interacting factors and may not be the same across regions and even schools. Studies on academic

performance in Kenya show varied factors interplaying in determining academic performance of learners.

According to Kibaara and Kaburu (2013), various factors determine learning outcomes of primary school pupils. These factors include but not limited to; social economic, environmental and psychological factors. Mwangi and Nyagah (2011) also investigated factors determining academic achievement of secondary school students. Their study did not investigate determinants of academic achievement in lower primary and standard one in particular which forms the foundation of formal education. This study however did not focus specifically on standard one pupils' literacy and numeracy achievement, which the current study investigated..

2.2.1 Pupils' Achievement in Literacy and Numeracy

Several factors have been reported to influence pupils' academic achievement including lack of pre-primary learning school experiences, large class sizes, lack of effective supervision, lack of prompt payment of school fees, low frequency of in-service training for teachers, irregular staff meetings, inadequate school infrastructure, chronic teacher and pupils absenteeism inadequate teaching/learning materials, poor home environment, low parental participation, negative teacher-attitudes, teachers' professional qualifications and teachers' teaching experiences (Marcon, 1999; Melhuish, Sylvia, Sammons, Siraj-

Blatchford, Taggart, Phan & Malin, 2008; NASMLA, 2010; The National Foundation for Educational Research, 2007; Randerson, 2008; Reynolds, 1994; Bibi & Ali,2012). Walfogel (2012) also observes that in United States of America, pupils enter school with varied experiences creating a gap between their academic performances. He recommends that the gap be addressed during the early years of life. However, there is limited literature available on the effect pre-primary school learning experiences on pupils' achievement in literacy and numeracy.

Myers and Lander (1989), also argue that considering the effectiveness of primary school systems, there is a tendency to overlook the important education, growth and development that occurs in the earliest years before a child enters formal school. This is so even though a growing body of evidence shows that early development programmes can have important positive effects on a child's primary school readiness, enrolment, progress and achievement.

A survey conducted by Randerson (2008) in the USA on the long-term benefits of pre-primary school learning outcomes, showed that over 44% of the fourth grade children nationwide were not able to read at or above the basic or partial mastery level on the National Assessment of Education Progress (NAEP) test. The extent of the problem ranged from 27% in Maine to 62% in Louisiana. In California 59% of the learners was reading below the minimum established proficiency level for reading. This could be partly attributed to differential early

childhood (pre-primary) experiences among pupils which emanated from lack of common preschool programmes or curricula.

A study by Green and Riddle (2012) provides strong evidence that early educational experiences have substantial causal effects on cognitive skills and that formal schooling determines basic literacy, numeracy and problem-solving skills. This underscores the important role pre-primary school learning experiences can have in determining and even predicting later academic achievement of learners.

In the Solomon Islands, Marcon (1999) investigated the factors which influence primary school academic achievement among them; home environment, parental participation, teachers' attitudes and early childhood programmes. The study found that; early childhood education was positively related to primary school academic achievement particularly in reading. The study also revealed that early childhood education experiences contributed to higher performances in specific skill areas such as reading and mathematics. The study further revealed that classrooms that had a variety of age-appropriate learning materials and teachers with early childhood education training were closely associated with better performance both in reading and mathematics examinations. The current study investigated whether pre-primary school experiences and teachers' self- efficacy predict pupils' achievement in literacy and numeracy.

The National Foundation for Educational Research (NFER, 2007) studied over 200,000 pupils aged 9-10 in 41 countries. The study was meant to provide information on the reading habits of primary-aged children and children's reading attitudes and habits. The study found that Hong Kong and Singapore had the highest percentages of pupils entering school with literacy skills already in place. The study further established that pupils in schools with advanced skills in reading had attended pre- primary school programmes. It was further revealed that pupils who spent between 30 and 60 minutes on reading homework a day had the highest mean score in most subjects than their counterparts. There was also a clear association between the number of books in the home and children's reading attainment. There are however, no similar studies which have been conducted to investigate standard one pupils' literacy and numeracy achievement and the extent to which such experiences predict pupils' academic achievement. The current study investigated the influence of pre-primary school experiences on pupils' achievement in literacy in Gucha District of Kisii County.

Grossman (1997) conducted a study on the effectiveness of a pre-first grade program on later academic achievement. The purpose of the study was to investigate the academic effectiveness of a pre-first grade program in a suburban upper class school system. Children who spent an extra year in pre-first grade program were matched with youngsters who proceeded directly to first

grade based on gender and date of birth. A significance difference in academic achievement was recorded in numeracy and no significant difference in literacy. The study investigated differences in literacy and numeracy achievement between children with pre-primary school learning experiences and those who join primary school without adequate pre-primary school learning experiences. In this study pre-primary school learning experiences adopts the meaning of all the experiences that are organized and purposively provided to children aged three to six years in order to prepare them for formal learning in a primary school setting. This gives the children a head- start and reduces the issue inequalities among children in regard to the basic skills, knowledge and ability at the time of entering school. For example in the USA, the issue is that when children enter school, their reading skills vary widely by socio-economic status, race and ethnicity, and immigrant status.

Hurvitz (2009) established that development is a cumulative phenomenon. That is, early experiences lay the foundation for all that follows. He argues that the emergence of basic skills and competencies is directly linked to later development of more complicated skills and competencies. Hurvitz further observes that, how well one thinks, learns, communicates, concentrates, problem-solve and relate to others when he/she enters school and later in life depends largely on the experiences one acquires during the earliest days, months and years of life. This argument helps make a case for the current study

which among others aimed at establishing whether pre-primary school learning experiences determine pupils' literacy and numeracy achievement.

Beside the literacy gaps exist before children enter school and some out-of-school factors as children progress through school (Waldfoe, 2012). Murray and Harrison (2011), also observe that pre-primary experiences can influence school readiness. In Nigeria, Osakwe (2009) investigated the effects of early childhood education experiences on the academic performance of primary school children. The study utilized school continuous assessment test-records (CATs). The study used a 0.05 level of significance. The findings revealed that there was a significant difference between pupils who had pre-primary school education experiences and those without such experiences in their academic performance, cognitive ability, social skills and motor skills. The current study reveals that there is a significant difference between pupils with pre-primary school learning experiences and those without such experience in literacy and numeracy achievement.

A study by Berlinki, Galiani and Gertler (2006), investigated the effects of pre-primary school education on primary school performance. The researchers wanted to provide an empirical foundation for the importance of pre-primary education. They estimated that one year of quality pre-primary school education increased the average scores of third grade pupils by 8% of the mean or by 24% of the standard deviation of test-scores. The findings revealed that pre-primary

school attendance positively affected pupils' self-control in the third grade when measured by behaviour such as attention, effort, class participation, and discipline. This had a positive correlation on pupils' academic achievement.

Myers and Lander (1989) did a longitudinal study to assess the effects of early childhood programmes on primary school progress and performance in Australia. Children aged 3 to 5 from 'disadvantaged' background were followed as they moved through primary school grades. Their progress and performance was evaluated. The results revealed that well-implemented early childhood education programmes can have significant long-term effects on school progress as measured through increased need for special education, and completion of high school. This position is shared by early studies (Lazar, 1982; Halpern & Myers, 1985). The current study results also reveal that pre-primary school learning experiences can significantly influence pupils' literacy and numeracy achievement.

Barnett (2008)'s study provides further revelation on lasting effects of pre-primary school effects. A review of studies aimed at understanding the short and long-term effects on learners' academic progress and achievement. Results from this study further showed that pre-primary school programmes have positive effects on children's learning outcomes and development, all be it the effects varied in type and persistence from by type of programme. It was further established that well-designed preschool education programmes produced long-

term improvement in school success including higher educational attainment. Previous studies focused on the overall effects of pre-primary experiences while the current study investigated standard one pupils' literacy and numeracy achievement. The strongest evidence however was that economically disadvantaged children reaped more long-term benefits from preschool programmes. Taiwo and Tyolo (2002), investigated the effects of pre-school education on academic performance of grade one pupils in primary school in Botswana. The study aimed at finding out whether there were significant differences of Botswana grade one pupils with pre-primary school education experiences and their counterparts without such experience on selected tasks in English literacy, mathematics and science.

Results from this study indicated that pupils with pre-school education experience significantly out-performed their counterparts without such experience in all the three subject areas (English-literacy, math and science). The observation of the researcher was that pre-school education equipped children with the requisite skills which make learning in grade one easier and faster for the children so exposed. The findings of the study were consistent with current study where although literacy differences were statistically significant, differences in mathematics were in favour of those who had pre-primary school learning experiences. This study is therefore consistent with the

view that pre-primary school learning experiences can favour pupils' achievement, particularly if such experiences are qualitative.

In Kenya pupils entering standard one do not possess the necessary requisite skills, knowledge and capacities to manage formal curriculum because of varying levels and quality of pre-primary school learning experiences acquired. Due to free primary school education offered in public primary schools and the inhibiting costs of pre-primary education, some children enter primary standard one without acquiring the necessary skills (Ngaruiya, 2006; Nyamweya and Mwaura, 2006).

2.3 Gender and pupils' achievement in literacy and numeracy

For a long time gender differences have been regarded as a causal factor to low participation and even academic achievement. Contrary to this notion, evidence from research shows the opposite (Nicole and Hyde, 2010). The study investigated gender gap in mathematics. They acknowledge that gender gap in mathematics persisted in some nations and not in others. Findings from their cross-national survey indicated that there were no significant differences in school adjustments between boys and girls although a significant difference was noticed between high and low achievers in regard to school adjustment. UNICEF (2007) further observe that quality pre-primary school education reduces the effects of socio-economic and gender disparities, promotes school

access and retention; prepares children for formal learning and facilitates smooth transition from home to school.

A study by Sarwar, Bashir & Alam (2010) investigated the relationship between study attitude and academic performance of secondary school students in Punjab. Results from the study revealed that study attitude was positively related to students' academic achievement. It was also found that there was a significant difference in academic achievement scores between male and female students. This study however was carried out among secondary school students and there is need for similar studies among lower primary school pupils.

A study by Fergusson and Horwood (1997) further revealed that; at no point of the school career of their study cohort did any evidence suggesting that female students performed less than boys or vice versa. That gender differences in educational achievement could not be explained by gender differences in intelligence since boys and girls had very similar IQ scores. Studies on gender differences and academic achievement have focused mainly higher levels of learning and most of them have been conducted outside Kenya (Fergusson and Horwood, 1997; Nicole and Hyde, 2010). The current study therefore investigated gender differences in literacy and numeracy achievement among standard one pupils in Gucha District of Kisii County.

2.3 Teachers' Self-efficacy and Pupils' achievement

Teacher self-efficacy refers to teachers' perceptions about their capabilities to raise students' achievement. Researchers have also revealed that teacher self-efficacy consists of two distinct dimensions: The first is personal self-efficacy which refers to a teacher's self-perceptions of personal capability to effectively teach students. The second is a teacher's perception regarding the extent to which teachers in general can overcome the influence of environmental factors that deter student learning (Ashton and Webb, 1986).

Teachers' self-efficacy beliefs (TSEB) are the teachers' capabilities for effective teaching/learning outcomes, including those with low motivation levels and low ability to learn. Teachers whose TSEB are high are more capable and ready of using instructional strategies effectively, more capable of ensuring students' participation and more successful in classroom management skills (Ozder, 2011). He further argues that teachers with high TSEB make more efforts to overcome the problems they face, and they can maintain these efforts longer. TSEBS influence students to increase their learning motivation, to create higher level sense of self and develop better personal management skills (Tschannen-Moran and Hoy, 2007). This revelation makes teachers' self-efficacy an integral component in determining learners' academic achievement outcomes. Studies further have shown that teachers' positive and high self-efficacy beliefs have impact on students' academic achievements and motivations (Caprara,

Barbaranell, Steca and Malone, 2006; Ozerkan, 2007; Midgley, Feldlaufer and Eccles, 1989; Multon and Brown 1999; Pajares, 2002).

It is argued therefore that teachers' self –efficacy may in turn contribute positively or negatively to students' sense of efficacy and their efforts in facing difficulties (Ross, 1998). Teachers self – efficacy is therefore a positive and significant predictor of pupils' vocabulary gains only within the context of high quality emotionally supportive classrooms (Guo, Piasta, Justice and Kaderavek, 2010).

Goddard, Hoy and Woolfolk (2011) have argued that self-efficacy is an indicator or predictor of teaching effectiveness. If a teacher feels confident that he or she can teach all students, regardless of their race, ethnicity, learning ability, or background, and achieve their objective, then that teacher would be described as being highly efficacious. Research has shown that teachers who are highly efficacious have the ability to show higher levels of effort and are resilient in their efforts, even in difficult and challenging situations (Goddard, Hoy and Woolfolk, 2011; Barnett,1995). They further define teacher self-efficacy as a teacher's judgment of his or her capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated.

Another dimension of teacher efficacy is internal efficacy, which is concerned with the degree to which a teacher believes he or she has the influence, will, and ability to affect students learning; or whether student learning is the end result of forces put in place outside the classroom setting. The internal efficacy view takes into consideration the personality, confidence level, and teaching strategies embraced by the teacher.

Teachers with internal efficacy believe strongly in their ability to teach all students regardless of race, gender, ethnicity, or social background, and that they can help them to be successful academically. On the other hand, external efficacy is the view that a student's background, family status, and social upbringing are key factors that influence student learning in the classroom (Barnett, 1995).

Teacher self- efficacy has been linked to student's academic outcomes in a number of studies. In each case, they have shown that students whose teachers scored high on self-efficacy did better on standardized tests than their peers who were taught by teachers with low self-efficacy scores (Reynolds, 2002). Teachers who lacked high efficacy qualities had low expectations of students, cast blame on students when things did not go as planned, and had a negative outlook about student learning and their behavior (Richardson, 2011). Richardson used twelve efficacious from three middle class schools in Midwest State. Data was collected using an interview schedule. The purpose of the study was to determine if African American performed better in school when their

teachers are highly efficacious. The findings were skewed in favour of pupils whose teachers had higher self-efficacy.

In USA, Worley (2007) further conducted a study on at-risk students and academic achievement to investigate the relationship between certain selected factors and academic success. The study investigated the correlations between Grade Point Average (GPA) and five independent variables. The independent variables were teacher-student relationships, parent-student relationships, motivation, social economic status, and peer influence. The results from data analysis revealed that variance between the dependent and the independent variables were significant and the strongest variance was between GPA and motivation. Worley's study investigated teacher-student relationship and academic achievement while the current study explored the relationship between teacher efficacy and pupils' achievement in literacy and numeracy.

A study by Ashton and Webb (1986) to investigate the relationship between teachers' self-efficacy and student academic achievement found that there was a significant relationship between teachers' self-efficacy in both communication and mathematics achievement test scores. Anderson, Greene, and Loewen (1988), after investigating the relationship between the efficacy of 65 teachers and students' achievement found out that teachers' personal efficacy (self-efficacy) had a positive correlation with pupils/students' overall academic

achievement at third and sixth grades. Ross (1992), further investigated the relationship between teacher self- efficacy and student academic achievement of 18 seventh and eighth grade history teachers and the achievement of their students. The results from the study indicated that both personal and general teaching efficacy was significant and positively related to students' academic achievement. Few studies have been conducted in Kenya focusing on the quality of teachers teaching our children and their efficacy (Mwoma, Limboro and Mugo, 2013). Their study investigated the quality of teachers teaching lower primary classes with a focus on standard two in three provinces (Central, Rift Valley and Western). The study revealed that most teachers teaching lower primary had limited access to training and in-service programmes necessary for quality teaching and therefore lacked in crucial knowledge and physical resources for effective teaching. This study in away was about the efficacy teachers had with their work of teaching children. The study did not investigate teachers' self-efficacy and pupils' academic achievement which was addressed by the current study.

A study by Ndani and Kimani (2010) investigated factors influencing Early Childhood development Teachers' motivation. The study was conducted in Thika District, Kenya. The study findings revealed a motivation level of below 50% of the teachers who participated. The study however did not investigate standard one teachers' level of self-efficacy. Most of the above studies have

focused on upper primary grades and secondary school levels. There was need therefore for similar studies focusing on lower primary and early childhood level on teacher efficacy factor. This study therefore investigated the relationship between teachers' self-efficacy and standard one pupils' literacy and numeracy achievement in Gucha district.

2.4 Type of School and Pupils' Achievement in Literacy and Numeracy

In the United States of America, there are different school systems and categories in existence and particularly those run by the States and those run by the private service providers with the States' approval (Ashton and Webb, 1986). These categories can be broadly grouped into two; public and private schools. It is a common phenomenon in academic achievement that public and private primary schools never perform equally. In some cases, public schools do better than privately sponsored primary schools while in other instances private primary school out-perform public ones. The study further showed that school type had a significant influence on students' academic performance. This underscores the role that a school type can play in determining pupils' academic achievement. Type of school was one of the independent variables of this study. The study did not investigate on type of school's influence on literacy and numeracy achievement in lower primary which was the focus of the current study.

Newhouse and Beegle (2005) argue that there is existing evidence on how the characteristics of schools in developing economies, including whether they are publicly or privately administered, affect students' acquisition of cognitive skills. Schools' influence on academic achievement has been a focus of many educational researchers for several years (Stewart, 2008). He further argues that the school has a powerful influence on individuals' academic achievement through their structure, staffing, organization, resources, and climate. He further argues that numerous educational researchers have studied school characteristics such as type of school public /private, size of student body demographics, and teacher qualifications and their relationship to students' academic outcomes. Stewart reveals that schools exert their influence on their students' achievement, commitment, involvement and most import, academic achievement through their resources and climate.

In Indonesia, a study by Newhouse, (2005) shows that public junior secondary schools are more effective than their private counterparts in imparting cognitive skills, as measured by students' scores on the national test administered upon completion of junior secondary school. In addition, a study conducted by Newhouse and Beegle (2005) on the effects of school type on academic achievement of Junior Secondary school students in Indonesia revealed that students in public secondary schools performed better than those in private secondary schools due to higher quality inputs.

Regionally, a study in Nigeria compared literacy and numeracy performance between public and private primary schools using standard six pupils' primary literacy and numeracy test (PLNT). The purpose of the study was to establish whether there was a significant difference in pupils' achievement in literacy and numeracy between pupils from public primary schools and their counterparts in private primary schools. Data was analyzed using ANOVA. Results showed that the performance of pupils on the PLNT differed significantly in favour of those from private primary schools. These studies however focused on secondary schools which points to the need for similar studies in lower primary school. The current study focused on lower primary schools.

2.5 Predictors of Pupils' Literacy and Numeracy Achievement

Studies show that personality and intelligence are strong predictors of pupils' academic achievement (Laidra, Pullman and Allik, 2006). Research further shows that children who have gone through pre-primary school successfully tend to perform better in primary school education than those who have not gone through pre-primary school. Results from a research project done by Melhuish, Sylva, Sammons, Siraj-Blatchford, Taggart, Phan, and Malin, (2008) on effective provision of pre-school and primary education in India reveal that ten-year-olds who had attended "high quality" preschool scored higher on mathematics tests than those who did not and the average children who went to high quality preschool, boosted their mathematics scores by 27 percent.

Melhuish et al (2008), further argue that, a combination of a good home learning environment, good preschool education and a good primary school were all important for later academic results. Preschool experiences both at home and in the preschool itself, have serious consequences for longer-term development in mathematics achievement at around age ten. Therefore, to maximize the achievement of pupils they should be provided with a high level of pre-primary school education.

Randerson (2008), found out that children who receive a rich variety of home learning experiences before starting school, achieved better results in mathematics tests and that children who attend quality pre-primary school education perform better in primary school than their counter parts. In Ghana, Etey (2005) did a study on the causes of low academic performance of primary school pupils in the Shama Sub-Metro of Shama Ahanta East Metropolitan Assembly (SAEMA). The purpose of the study was to identify the factors that cause poor academic performance of pupils in the Shama sub-metro schools in SAEMA. To identify the factors, comparisons were made between high and low achieving schools within the same metropolitan area. The study found that the factors which contributed to poor academic performances included large class sizes, lack of supervision, school fees not promptly paid, low frequency of in-service training for teachers, irregular staff meetings, and school infrastructure

and materials. Teachers' self- efficacy was not a variable in the study and this was investigated in the current study.

In Kenya, the National Assessment System for Monitoring Learner Achievement (NASMLA) (2010) investigated pupils' academic achievement against pupils' personal, home, and school background characteristics. The report reveals that pupils who were taught reading and writing by teachers with higher professional qualifications and many years of teaching experience out-performed their counterparts who were taught by teachers with lower professional qualifications and fewer years of experience. It was also revealed that pupils in private and urban schools performed better in both literacy and numeracy than those from public and rural schools. The focus of the above study was upper primary school level. There was need for a similar study that focuses on lower primary schools particularly the entry class standard one level. This study therefore investigated the difference between standard one teachers' self-efficacy and pupils' literacy and numeracy as they join primary schools.

Another study conducted in Kenya by UWEZO Kenya (Uwezo, 2011), revealed important findings. The study was conducted to assess the level of reading and mathematics competence among primary school pupils across grades. The study sample was 70 Districts, reaching 2,029 villages and 40,286 households. The school-level information was collected from 2,030 schools. In total, 68,945 children between the ages of six and 16 years old were tested. The study found

that many children in Kenya are going to school but they were not learning. The report further reveals that nationally seven out of ten pupils in class three cannot do class two work and children are not learning because either they are absent from school or the teacher is absent from school. In many districts, more than four out of ten children miss school daily and in a single day 13 out of 100 teachers are not in school. Teacher shortage was also found to be acute and was affecting learning and on average, every primary school has a shortage of four teachers (Uwezo, 2011). The report further revealed that nationally, a teacher is in charge of at least 52 children and counties with the worst teacher-pupil ratio having the worst learning levels. According to the report, in Masaba and Gucha Districts in Kisii County, two out of 100 children aged six to sixteen years were not enrolled in school and learning levels were lower than the national average. Learner absenteeism was also found to be affecting learning, whereby, four out of ten children miss school daily. The effect of pre-primary school experiences and pupils' academic achievement was not investigated. This study was to investigate whether pre-primary school learning experiences and teachers' self-efficacy levels influence standard one pupils' achievement in literacy and numeracy.

2.6 Summary of Literature Reviewed

Academic achievement can be defined as the extent to which a learner is profiting from instructions in a given area of learning for example language and mathematics activities. It is the outcome of education or the extent to which learners, teachers, institutions have achieved their educational goals. The common indicators of academic performance are the learner's scores and overall performance in class work including but not limited to literacy and numeracy. Literature reviewed shows that pre-primary school learning experiences, teachers' self-efficacy, type of school and gender can influence pupils' academic achievement. Literacy and numeracy skills acquired at pre-primary school and lower primary school grades can determine or even predict pupils' future academic achievement and/or success in the subsequent educational ladder. Studies done internationally show that pre-primary school learning experiences have long-term positive benefits for the learner and later success in academic progress and achievement. Teachers' self-efficacy on the other hand has been linked to students' learning outcomes with pupils with teachers having high self-efficacy doing better and likely to overcome learning difficulties encountered during the learning process. Literature further shows that most of the studies on pupils' academic achievement have been focused and concerned with upper primary or higher academic grades. The current study focused on standard one class in Gucha District in Kisii County Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

In this chapter the researcher describes the methodology that was employed in the study including study design, variables and locale of the study, target population, sampling technique and sample size. Research instruments, pilot study, validity and reliability of the instruments, data collection, logistical and ethical considerations have also been discussed.

3.1 Research Design

This study employed *Ex post facto* research design. The researcher adopted a method to investigate the study variables. Sylvia (2010) explains Ex post facto study or after-the-fact research as a category of research design in which the investigation starts after the fact has occurred without interference from the researcher. She further argues that majority of social researches, in contexts in which it is not possible or acceptable to manipulate the characteristics of human participants, is based on ex post facto research designs. The design is often applied as a substitute for true experimental research to test hypotheses about cause-and-effect relationships or in situations in which it is not practical or ethically acceptable to apply the full protocol of a true experimental design. It starts with the observation and examination of facts that took place naturally, in the sense that the researcher did not interfere, followed afterward by the

exploration of the causes behind the evidence selected for analysis. The researcher takes the dependent variable (the fact or effect) and examines it retrospectively in order to identify possible causes and relationships between the dependent variable and one or more independent variables. Ex post facto research design has strengths that make it the most appropriate research plan in numerous circumstances; for instance, when it is not possible to apply a more robust and rigorous research design because the phenomenon occurred naturally; or it is not practical to manipulate the independent variables. It is also a suitable research design for an exploratory investigation of cause-effect relationships or for the identification of hypotheses that can later be tested through true experimental research designs. The design was found applicable in the current study which was meant to investigate determinants of literacy and numeracy achievement of standard one pupil. In this study the researcher could not envisage actual control of the independent variables, since their effects had already been felt. Best (1992) explains that an *ex post facto* design is used when the researcher does not envisage actual control of the independent variables whose effects have already been felt. The design envisages a systematic approach in collecting, collating and analyzing data in a bid to make informed inferences and conclusions regarding phenomena.

Descriptive survey method was used. In a descriptive survey method, the researcher observes the current phenomenon using available evidence in order to make informed conclusions and generalizations about the possible causal

factors. In this study pupils' literacy and numeracy mean scores in end of the term evaluation was utilized to determine the extent to which pre-primary school learning experiences and teachers' level of self-efficacy influence pupils' achievement in literacy and numeracy. Kothari (2004) explains that descriptive surveys in social sciences aim at fact-finding of the state of affairs as they exist at present by collecting, collating and analyzing available evidence in order to make informed inferences. Descriptive surveys often involve generating, processing and analyzing large data in order to make decisions on a specific phenomenon (Orodho, 2009; Robson, 2011). The design was employed in this study because data was generated retrogressively and analyzed to give a cause-effect relationship between dependent and independent variables.

3.1.1 Variables of the Study

The independent variables of this study were;

- (i) Pre-primary school learning experiences; this focused on whether the pupils went through pre-primary school programme. A questionnaire was used to collect information from the respective class teachers.
- (ii) Teachers' self- efficacy; this variable was measured using a detailed teachers' self-efficacy scale.
- (iii) Type of school; information on type of school was collected as part of the background information.

(iv) Gender. Pupils' gender information was also obtained as background information. These variables were believed to influence pupils' literacy and numeracy achievement in the study area. Pupils' achievement in literacy and numeracy were the dependent variables of this study. Pupils' mean scores in literacy and numeracy were obtained from the continuous assessment records kept by the class teachers. The computed mean scores reflected pupils' literacy and numeracy achievement of the learners.

3.1.2 Location of the Study

This study was carried out in Gucha District Kisii County. According to data at the District Education Office (2012) there were 40 public and 19 private primary schools in the district. This comprised of a total of 59 primary schools. Kisii county was purposively selected for this study because it was among the districts that were ranked last in recent KCPE and KCSE examinations in Kenya with most of the schools ranking among the bottom schools nationally (MoEST, 2006; UWEZO, 2011,2012). Gucha district is in Kisii County. There was need to establish possible factors determining this dismal performance in her grades of the education ladder. This study investigated determinants of literacy and numeracy achievement among Standard one pupils in Gucha district. The following data provides some light on Kisii County's rating among other counties in 2013 KCPE (KNEC, 2013). Out of the 47 counties, Kisii district was ranked position 34 overall.

Table 3. 1 : KCPE Ranking of Counties in 2013

1 Kirinyaga	2. Elgeyo Marakwet	3. Makueni
4. Nandi	5. Uasin Gishu	6. Busia
7. Nairobi	8. Baringo	9. Kisumu
10. Tharaka Nithi	11. West Pokot	12. Kakamega
13. Vihiga	14. Kajiado	15. Homa Bay
16. Siaya	17. Nyeri	18. Bomet
19. Machakos	20. Turkana	21. Kericho
22. Samburu	23. Trans Nzoia	24. Narok
25. Bugoma	26. Migori	27. Embu
28. Nyamira	29. Mombasa	30. Nyandarua
31. Kiambu	32. Nakuru	33. Meru
34. Kisii	35. Murang'a	36. Laikipia
37. Marsabit	38. Kitui	39. Isiolo
40. Kilifi	41. Kwale	42. Taita Taveta
43. Wajir	44. Lamu	45. Tana River
46. Garissa	47. Mandera	

Source: (KNEC, 2013)

The above table reveals that Kisii county rates among the poorest counties as regards the Kenya primary certificate of education performance is concerned at position 34 of the total 47 counties. This necessitated this study to investigate

possible determinants in early grades which could be causal factors in KCPE and subsequent grades.

3.2 Target Population

The population of this study comprised of all standard one pupils and their class one teachers in Gucha District from all registered public and private primary schools. There were 41 public and 19 private primary schools. Only 2 two registered private primary schools had an enrolment of above 14 pupils. The two were included purposively to represent the private schools. Standard one class was targeted because it marks the beginning of primary school (formal) education and it is a transitional class for pre-school or from home to lower primary school. Learners' abilities and potentials are also, not only founded at this level but most importantly exhibited which underscores the import played by pre-primary school experiences in determining academic achievement. Pupils who are unable to manage tasks at this level effectively, are often times likely to experience even greater difficulties in coping with more complex academic demands later as they climb up the academic ladder (Barnett, 2008; 2009).

3.3 Sampling Technique and Sample Size

The sampling techniques and sample size of the study are discussed in the following sub-sections. First, the sampling methods used have been explained followed by a description of the sample size.

3.3.1 Sampling Techniques

In this study two sampling techniques were used to select the sample for the study; purposive and stratified random sampling techniques. Purposive sampling technique was used to select Gucha district and standard one class because of the district's low ratings in reading and numeracy scores in the annual standard three literacy and numeracy reports (Uwezo, 2011; 2012). Stratified random sampling was used to select the sample of schools.

Schools were categorized into two; public and private. The sample comprised of six public and two private primary schools. All standard one pupils formed the study sample. According to Mugenda and Mugenda (2004), a sample of at least 10% in qualitative studies is acceptable. Gay (1981) further explains that in descriptive studies in social sciences, a sample of at least ten percent of accessible population is considered adequate.

The current study was a descriptive study using a survey method which involved following up the same sample from the time they joined standard one through the first term in standard one to ascertain the effects of the independent variables on the dependent variables. Therefore a 16% sample size was deemed representative of the study population. Standard one teachers of the sample schools were purposively selected to form the sample, where one teacher was

selected to participate from each sampled schools. A total of eight standard one teachers participated in the study.

3.3.2 Sample Size

All standard one pupils constituted the study sample. Only one stream (in case of schools with more than one stream) participated. For every class, one stream’s teacher participated. This meant that for every participating standard one class, one teacher was sampled. The teachers provided information on individual pupils in their class, and then filled-in the teachers’ self-efficacy scale. Table 3.1 presents the distribution of the sample of pupils between public and private primary schools which were involved in the study.

Table 3. 2: Distribution of Pupils between Public and Private Schools

School Category	Number sample of schools	Sample size of Pupils	Percentage (%)
Public	6	120	78
Private	2	34	22
Total Sample	8	154	100

Table 3.1 shows that majority of the pupils included in the sample came from public schools constituting of up to 78% while those from private schools comprised of 22%. Only registered private primary schools were involved in the study.

3.4 Research Instruments

Three instruments were employed in this study. These included pre-primary school learning experiences achievement checklist, teachers' self-efficacy scale for standard one teachers and a literacy and numeracy achievement proforma. The instruments are described in the following sub-sections.

3.4.1 Achievement Checklist

A checklist for pre-primary school learning experiences was used to collect individual pupils' pre-primary school learning experiences. The checklist consisted of items considered characteristic of pupils with adequate pre-primary school learning experiences (readiness). This was filled by the class teacher since he/she had observed individual learners and made appropriate judgment and placement meant to facilitate the teaching/learning process. Children proceeding from pre-primary school may not be subjected to conventional assessment since they are not ready for this. There were two parts; I and II. Part I collected background information including gender, number of years of pre-primary school attendance and type of school. Part II measured pupils' pre-primary school learning experiences competences as described by their class teachers. The instrument in appendix C was used to collect data on pupils' literacy and numeracy achievement at the end of the term.

3.4.2 Teachers' Self-Efficacy Scale

A structured modified likert scale for teachers' self-efficacy was used to collect data on teachers' self-efficacy levels. The instrument was administered immediately after the administration of the pre-primary school checklist was done. The level of self-efficacy a teacher had is likely to influence his/her behaviour in helping pupils in developing desirable literacy and numeracy skills and competencies. Teachers' self-efficacy rating of their own efficacy would indicate whether they had high or low self-efficacy. The scale consisted of two sections A and B. Section A collected background information, while section B measured teachers' self-efficacy. Respondents selected one out of the alternatives below.

NA- Not At All = 0

VL- Very Little = 1

L -Little = 2

QA- Quite A Lot = 3

A - A Lot = 4

3.4.3 Pupils' Achievement in Literacy Proforma

Pupils' achievement was obtained from class progress records at the end of the term that is from the block progress assessment mark-sheets. This information

was transferred to an achievement Proforma. The instrument consisted of two Sections that is A and B. Section A involved the background information of the respondents, while Section B focused on the information on the pupils' average scores in literacy and numeracy at the end of the term.

3.5 Piloting of the Research Instruments

The research instruments were piloted with pupils and teachers in two primary schools; one public and one private primary school. The schools involved in the pilot study were not included in the sample of the study. The purpose of piloting the research instruments was to test the suitability of the items for both the pupils and teachers with the intention of improving their validity and reliability.

3.5.1 Validity of the Instruments

Validity is the quality of a data-gathering instrument that enables it to measure what it is supposed to measure. According to Best (1992), a test is valid if it measures what it claims to measure. Content validity was used to test the validity of the instruments. Content validity refers to the degree to which a test measures what it was designed to. Content validity was achieved through ensuring that all the variables and objectives of the study were covered in the instrument items.

3.5.2 Reliability of the Instruments

Reliability of the instruments except the Literacy and Numeracy Achievement-Proforma were pre-tested during the piloting study to ensure reliability. The proforma collected the average scores in literacy and numeracy of the pupils. According to Best (1992), an instrument is reliable if it yields consistent results from different populations with similar characteristics.

Test-retest method was used to test the reliability of the research instruments. This means that the instruments were administered twice to teachers within an interval of two weeks. The reliability was calculated using Cronbach's alpha, which is a model of internal consistency (repeatability) based on the average inter-item correlation. The reliability analysis procedure calculates measures of scale reliability and provides information about the relationships between individual items in a scale (Rotter, 1966). The acceptable reliable coefficient was 0.7.

Data from the pilot study was analyzed and used to test the reliability of the instrument. The researcher used the questionnaire measure knowledge, skills and abilities of pre-primary school pupils in literacy and numeracy as they joined standard one. Standard one class teachers responded to the items on individual pupil's entry literacy and numeracy abilities.

Each question had a 3-point Likert scale; "unable", "can attempt" and "able". In order to understand whether the items in this questionnaire reliably measured the same latent variable, a likert scale was constructed and a Cronbach's alpha was run. The value of the alpha coefficient ranged from zero to one and was used to describe the reliability of factors extracted from dichotomous (that is, questions with two possible answers) and/or scales (i.e., rating scale; 1 = unable, to 3 = able). A higher value indicated a more reliable scale. Since, the alpha coefficients were all greater than 0.5, it was concluded that the instruments had an acceptable reliability coefficient and hence appropriate for the study.

Table 3. 3: Cronbach’s Reliability Test Results

<i>Cronbach's Alpha</i>	<i>Cronbach's Alpha Based on Standardized Items</i>	<i>No. of Items</i>
.849	.849	10

The results shown in the reliability statistics table above indicates that the Cronbach's alpha was 0.849, which indicates a very high level of internal consistency for the scale. Table 3.2 shows that $\alpha \geq 0.849$ which indicates very high internal consistency (reliability) for the scale with this sample.

3.6 Data Collection Techniques

After piloting and revising the research instruments, the researcher collected data in three stages; first, the pre-primary school learning experiences checklist

was administered to standard one teachers to fill-in individual pupils' pre-primary school learning experiences. This was to establish whether a pupil attended pre-primary school program or not. This helps the teachers to group them according to their past experiences and whether they have the basic literacy skills such as reading, writing, number recognition among others. The teachers have to know these pupils individually in order to plan their teaching /learning experiences appropriately. The purpose of the checklist was to determine how well the pupils had achieved the pre-primary school learning experiences before joining standard one. The items in the checklist addressed the basic numeracy and literacy knowledge, concepts and skills they are likely to have mastered before joining primary school.

Secondly, the researcher administered the teachers' self-efficacy scale to the same standard one teachers after providing information on their pupils' pre-primary school learning experiences. This was done the same day in each sample school to avoid extraneous information which could interfere with the intended data. Lastly, three months later the researcher obtained the pupils' literacy and numeracy scores at the end of the term. This was done in order to determine the degree to which pre-primary school learning experiences and teachers' self-efficacy influence or predict pupils' literacy and numeracy achievement.

Finally the researcher asked the teachers to fill in the literacy and numeracy achievement proforma which involved mean scores obtained by the pupils in literacy and numeracy at the end of the term. This was done three months after the initial data collection phase. Common end term examinations were done by all the schools hence universality of skills and knowledge tested. The average scores in literacy and numeracy were drawn from the individual sample pupils' report forms or progress records at the end of the first term in standard one.

3.7 Data Analysis Procedures

Descriptive and inferential statistics were used to analyse data. The descriptive statistics calculated included: Frequencies, means, standard deviations and percentages. Inferential statistics calculated involved Analysis of Variance (ANOVA). ANOVA was used to test whether there were significant differences between independent and dependent variables. ANOVA was also used to determine whether pupils' pre-primary school learning experiences and teacher self-efficacy predicted pupils' achievement in literacy and numeracy.

3.8 Logistical and Ethical Considerations

The researcher sought for permission to conduct a research from the relevant authorities before the embarking on data collection exercise. First the researcher had obtained a research authorization letter from the Graduate School, Kenyatta University. Then the researcher obtained permission from the Ministry of Education Science and Technology in Gucha Sub-County. The researcher

further liaised with head teachers of the sampled schools for consent to conduct a research in their schools. This was possible as the researcher had obtained authorization from the sub- county education office (District Education officer), Gucha district. The researcher further provided a consent letter to the respondents to read and decide whether to participate or not. This was necessary as the teachers' consent was very crucial to avoid a feeling of intimidation and coercion on the side of the respondents. For the sake of privacy and confidentiality of the respondents, the data instruments did not require them to give their actual names rather were given numbers. Participants' consent was obtained before collecting data. Participants were assured of the confidentiality of their information and that it would be used for the purpose of the study alone. Time schedules for the study were strictly adhered to, in order to avoid interfering with the daily school routines. The researcher adhered to timelines as agreed with the school heads. Data was collected during break and lunch breaks since it involved standard one teachers most of whom were manning a class alone. As for the pupils, the researcher sort consent from the head teachers since he did not directly need their involvement. This was consent to obtain their individual marks obtained in their end of term evaluation.

CHAPTER FOUR
PRESENTATION OF FINDINGS, INTERPRETATION AND
DISCUSSION

4.0 Introduction

In this chapter, the researcher presents findings of the study, interpretations and discussions of the results. The results are presented according to the following study objectives:

- ❖ To establish Standard one pupils' achievement in literacy and numeracy.
- ❖ To establish whether pre-primary school learning experiences influence pupils' achievement in literacy and numeracy.
- ❖ To find out if there is gender differences in pupils' achievement in literacy and numeracy.
- ❖ To establish whether teachers' self-efficacy influences pupils' achievement in literacy and numeracy.
- ❖ To find out whether type of school attended influences pupils' achievement in literacy and numeracy.
- ❖ To establish whether pre-primary school learning experiences and teachers' self-efficacy predict pupils' achievement in literacy and numeracy.

The researcher has presented the results in the following section starting with the general and demographic characteristics of the study respondents and then the descriptive and inferential results. The descriptive and inferential results are presented thematically following the study objectives.

4.1 General and Demographic Information of the Respondents

This study was conducted in Gucha District which is now one of the sub-counties of larger Kisii County. The study focused on all standard one pupils at the time of entry to standard one. The study was to establish the levels of competence and preparedness of the pupils on commencing formal and compulsory education.

4.1.1 Pupils' Demographic Information

The gender of the pupils who participated in the study was determined and the results are presented in Table 4.1.

Table 4. 1: Pupils' Demographic Information

Category	f	Male	Female	Σn	%
Public primary schools	6	60	55	115	74.7
Private primary schools	2	22	17	39	25.3
Total	8	82	72	154	100

Table 4.1 shows that majority (74.7%) of the pupils who participated in the study were from public primary schools while 25.3% of the pupils were from private primary schools. This was because few private primary schools were registered with the Ministry of Education.

There 60 male pupils were from public primary schools and 22 from private primary schools. While female pupils constituted 55 from public and 17 from

private primary schools. This gave the total sample to be 154 representing 16% of the total target population.

4.1.2 Teachers' Demographic Information

Table 4.2 presents the distribution of the teachers between public and private primary schools which participated in the study.

Table 4. 2: Distribution of Teachers per Type of School

Category of	Number of Teachers	Percentage (%)
Public	6	75
Private	2	25
Total Sample	8	100

Table 4.2 shows that majority of the teachers sampled (75%) were from public primary schools while teachers from private primary schools constituted 25% of the total number of teachers who participated in this study.

4.1.2 Pupils' Achievement in Literacy and Numeracy

The first objective of this study was to establish standard one pupils' achievement in literacy and numeracy. To achieve this objective the pupils' end of term assessment mean scores in literacy and numeracy were calculated and the results are presented 4.3.

Table 4. 3: Attendance of Pre-Primary School and pupils' Literacy and Numeracy mean scores

N=154.	Literacy	Numeracy
Mean	68.4	71.8
Median	70.0	74.0
Mode	64.0	88.0
Std. Deviation	19.2	18.9
Minimum	10.0	12.0
Maximum	100.0	100.0

Table 4.3 shows that pupils' mean score in literacy was 68.4 with a standard deviation of 19.2 while the mean score in numeracy was 71.8. The results showed that pupils' performed better in numeracy compared to literacy. Early studies have either addressed gender differences or differences based on type of schools in the performance of mathematics, sciences and social studies. A study conducted by Chege, Likoye , Nyambura and Guantai (2012), compared girls' and boys' academic achievement in Kenya and results revealed that girls' achievement was higher than that of the boys. These results were consistent with the current study where girls achieved higher than boys in both literacy and numeracy. This implies that the boys require support in terms of material and professional if they are to achieve commensurate with their girls counterparts.

Consistent with the current study's results, Kiptum, Rono, Too and Bii, (2013)'s study investigated effects of gender on mathematics performance in Keiyo

district and found that although both boys and girls demonstrated positive attitude towards mathematics, boys had higher positive attitudes. Partially consistent with the current study that revealed better achievement in mathematics compared to other subjects. The above studies did not however focus on pupils' literacy and numeracy achievement of lower primary pupils. The current study investigated literacy and numeracy achievement of standard one pupils.

4.2.2 Pre-Primary School Learning Experiences and Pupils' Achievement in Literacy and Numeracy

The second objective of this study was to find out whether pre-primary school experiences influenced pupils' achievement in literacy and numeracy. To achieve the objective, the first task was to determine whether pupils attended pre-primary school or not and Table 4.4 presents the results.

Table 4. 4: Pupils’ Literacy and Numeracy Achievement

Pupils Who	Male	%	Female	%	Total	%
Attended pre-primary school	82	100	68	95.2	150	97.7
Did not attend pre-primary school	-	-	4	4.8	4	2.3%

Table 4.4 shows that 100% of the boys and 95.2% of the girls in the sample attended pre-primary schools. The results show that the majority of the pupils had attended pre-primary schools. The mean scores in literacy and numeracy of the pupils who had attended pre-primary school and those who did not attend pre-primary school were obtained and tabulated. Table 4.4 presents the results.

Table 4. 5: Distribution of literacy and numeracy scores

Category of children	Mean score in Literacy (%)	Mean score in Numeracy (%)
Those who attended pre-primary school	78.00	71.06
Those who did not attend pre-primary school	67.37	70.00

Table 4.5 shows that the scores of the pupils who had attended pre-primary school programme were 78% in literacy and 71% in numeracy respectively while those who did not attend pre-primary school were 67.37% and 70% respectively. It emerged that pupils who had attended pre-primary schools posted higher scores in both numeracy and literacy compared with those who

did not attend pre-primary school. To establish whether the difference in pupils' achievement in literacy and numeracy between those who attended pre-primary school and those who did not was significant, the following hypothesis was formulated and tested.

H01: There is no significant difference in achievement in literacy and numeracy between pupils who attended pre-primary schools and those who did not.

To test the above hypothesis, ANOVA was run and the results are presented in Table 4.6.

Table 4. 6: ANOVA results of those who attended and those who did not attend pre-primary school

	Sum of Squares	df	Mean Square	F	Sig.
Literacy score by attendance of pre-primary school programme	309.379	1	309.379	.842	.036
Numeracy Score by attendance of pre-primary school programme	8.041	1	8.041	.022	.043

Table 4.6 shows that the mean squares for literacy and numeracy were 309.4 and 8.04 respectively. The f value was at .842 for literacy and .022 for numeracy respectively. The results also give the p-values at .036 for literacy and .043 for numeracy. The p-values in literacy and numeracy were less than 0.05 level of significance thus the null hypothesis was rejected and it was therefore

concluded that there was significant difference in achievement in literacy and numeracy between pupils with pre- primary school learning experiences and those without.

These findings are consistent with previous studies conducted on the effects of pre-primary school experiences on the pupils' academic achievement outcome where most of the studies agree on the positive effects early learning experiences have on learning outcomes. Consistent to the current results, a study by Woldehauna and Gebremedhin (2012), also investigated the effects of pre-primary school on attendance on cognitive development of urban children aged five and eight years in Ethiopia. Results from the study had established that pre-primary school attendance had statistically significant positive effect on the cognitive development of children at the ages of both five and eight years, with the bigger impact at latter age. The study further revealed that pre-school attendance has a positive and statically significant effect on primary school enrolment and progression through grades. The findings underscore the role pre-primary school experiences plays in promoting pupils' academic achievement as they proceed to primary school grades.

A study by Ampabeng and Tan (2012), investigated the long-term impact of childhood malnutrition on cognitive development of famine survivors. Results of the study revealed that there was a negative and significant impact of childhood malnutrition that persisted well into adolescence and adulthood. This

underscored the importance of quality pre-primary school programmes in enhancing teaching/learning outcomes especially in literacy and numeracy. Their findings further suggest that the magnitude of the negative experiences in childhood could loom large to latter ages.

In line with these results, Osakwe (2009) further established that there was a significant difference in academic performance including cognitive ability, social skills and motor-skills between pupils who have pre-primary school education and those without. Most of the studies available on the benefits of pre-primary school learning experiences (Bernett, 2008; Hurvitz, 2009; Osakwe, 2009; Volante, Villalon and Muller 2010), have been conducted outside Kenya. This study was conducted in Gucha district, Kisii county Kenya.

4.2.3 Gender Differences in Literacy and Numeracy Achievement

The third objective was to find out if there is gender difference among standard one pupils' achievement in literacy and numeracy. Table 4.7 presents pupils' scores in numeracy and literacy by gender.

Table 4. 7: ANOVA for gender differences in Literacy and Numeracy achievement

Pupils' Gender	f	Mean scores in Literacy	Mean scores in Numeracy
Boys	82	65.0	70.8
Girls	72	72.3	73.0

From Table 4.7 it can be observed that girls performed better than boys in both literacy and numeracy with means of 72.3 and 73.0 respectively as opposed to boys' 65 and 70.8 respectively. To determine whether there was a statistically significant difference between gender and pupils' achievement in literacy and numeracy, the following hypothesis was formulated and tested.

H02: There is no gender difference in academic achievement among standard one pupil in literacy and numeracy.

Table 4. 8: Pupils' literacy and numeracy achievement by gender

	Σ Squares	df	Mean Square	F	Sig.
Literacy by Gender	1786.498	1	1786.498	4.986	0.027
Numeracy by Gender	146.980	1	146.980	.408	0.524

Table 4.8 shows that the p-value for boys in literacy and girls was 0.027, while in numeracy the p-value was 0.524. The results imply that the difference in literacy scores between boys and girls was significant while the difference in

numeracy was not significant. The null hypothesis which stated that; there is no significant gender difference in literacy and numeracy achievement among lower primary school pupils was thus partially accepted. This means that girls performed better in literacy than boys. This could be attributed to the fact that girls are normally better in languages than boys (Evans, 1998).

The results are consistent with Evans (1998) study which revealed that gender differences existed in literacy achievement with girls likely to do better than the boys. The differences were attributed to the school type attended by the learners. Further, the qualitative study revealed that there were major differences in boys' and girls' participation in academic activities in the classroom, with girls participating more in general.

Another study by Nithi (2010), examined whether there was a significant gender gap in mathematics with achievement and the nature of the gender gap in one primary school in Kwa Zulu-Natal. The study also investigated factors associated with the differential performance of girls and boys in the mathematics class. Qualitative data was drawn from grade 6 mathematics achievement test-results in two years; 2008 to 2009. The findings were consistent with the findings of the current study. The study also found out that there was a significant gender gap in mathematics in favour of the girls.

Linver, Davis-Kean and Eccles (2011) also investigated growth curve models for adolescents' school mathematics grades and used a sample of 1821 adolescents who transitioned from elementary to junior high school between the 6th and 7th grades. Measures of subjects' interest and scores in mathematics from participating schools were tracked. A t-test was conducted to determine gender and track differences in both mathematics grades from 6th through 12th grades. The findings had revealed that female students' grades in mathematics were consistently higher at every grade where all t-tests were significant at $p < 0.05$ level of significance. This is consistent with the current study where gender differences were statistically significant in literacy and were slightly different in favour of the girls than boys.

A longitudinal investigation on gender differences of grades 4-8 by Bursal (2013), observed 222 elementary students in science and technology courses. The study compared between boys' and girls' grade level achievement. It was revealed that girls consistently had slightly higher scores than boys. Furthermore, it was observed that this difference became statistically significant as the grade level increased. This means that girls are likely to do better than boys if all conditions are constant and favourable.

Consistent with the results was the USA, National Assessment of Education Progress (NAEP) of 1998 which revealed that 16% more female students scored proficient in writing and 10% more in reading (Donahue, 2001). Burgess,

McConnell, Propper and Wilson (2003), further confirms that there exists a gap between boys and girls in literacy achievement in favour of girls. A study conducted by Saunders, Davis, Williams and Herbert (2004) investigated gender differences, completion and achievement among students. Results from the study show that girls were more favoured in school completion and achievement in examinations than were the boys. The findings were consistent with the current study's revelation that gender differences in literacy and numeracy achievement were significant in favour girls.

4.2.4 Teachers' Self-efficacy and Achievement

The fourth objective was to establish whether teachers' self-efficacy influenced pupils' achievement in literacy and numeracy. To understand teachers' self-efficacy, overall mean scores were calculated and the results are presented in Table 4.9.

Table 4. 9: Teachers' Self- Efficacy and Pupils' Achievement

	School	Teachers' Self-efficacy Means	Literacy Means	Numeracy Means
1	A	4.50	64.70	77.60
2	B	4.07	63.30	82.00
3	C	3.36	62.30	70.00
4	D	4.57	65.90	73.00
5	E	3.86	62.00	62.80
6	F	3.86	58.90	63.00
7	G	4.29	64.80	75.60
8	H	4.43	66.70	59.00

Table 4.9 shows teachers' overall self-efficacy mean scores and their pupils' overall mean scores in literacy and numeracy for each of the schools. The teachers who scored below 3 on the self-efficacy scale were deemed to have low self-efficacy. From the above table it is evident that all standard one teachers' demonstrated high sense of self efficacy score of between 3.36 and 4.57. The results show that the higher the teachers' self-efficacy mean scores, the better the pupils' performance scores in literacy and numeracy. To establish whether teachers' self-efficacy was significant, the following null hypothesis was formulated and tested.

H03: There is no significant difference in achievement in literacy and numeracy between pupils taught by teachers with high self-efficacy and those taught by teachers with low self-efficacy.

Analysis of Variance was used to test the mean differences in literacy and numeracy achievement. The results are presented in Table 4.10.

Table 4. 10: ANOVA of Teachers' Self- Efficacy Levels across Items

How much can you do to;	Σ Squares	df	Π Square	F	P-value
Assess pupil's previous knowledge?	1.042	1	1.042	3.4	0.01
Involve parents' participation?	0.042	1	0.042	0.1	0.06
Ensure that all pupils are able to read and write?	0.167	1	0.167	0.8	0.04
Respond to pupils questions during the lesson?	2.667	1	2.667	4.8	0.01
Adjust your lesson?	0.375	1	0.375	0.3	0.05
Gauge pupil understanding?	0.000	1	0.000	0.0	0.00
Get make pupils perform well?	0.042	1	0.042	0.3	0.05
Help pupils to like your subject(s)?	0.000	1	0.000	0.0	0.01
Motivate pupils?	0.167	1	0.167	0.8	0.04
Encourage group participation?	3.375	1	3.375	13.5	0.01
Help pupils who perform poorly?	0.375	1	0.375	0.9	0.04
Provide remedial lessons?	0.042	1	0.042	0.0	0.04
Use a variety of assessment strategies?	0.042	1	0.042	0.1	0.01
Encourage parents' participation?	0.042	1	0.042	0.1	0.05

Table 4.10 presents computed ANOVA results for teachers' self-efficacy. The results indicate that p-value in almost all the self- efficacy items for teachers were less or equal to 0.05. Only teachers' efficacy in involving parents in participating in their children's reading and writing was slightly above 0.05. To further establish whether there was a significant difference between teachers' overall self-efficacy level and pupils' literacy and numeracy achievement, the

researcher ran an Analysis of Variance (ANOVA) and the results are presented in Table 4.11.

Table 4. 11: ANOVA Overall Self-efficacy and P-values in Literacy and Numeracy

	Sum of Squares	df	Mean Square	F	Sig.
Teachers' self- efficacy and pupils' achievement in literacy	131.602	1	131.602	.168	.036
Teachers' self- efficacy and pupils' achievement in numeracy	377.627	1	377.627	.504	.041

Table 4.11 shows that the squares in literacy and numeracy were 131.602 and 377.627 respectively. F values were .0168 for literacy and 0.504 for numeracy. The p-values of 0.036 for literacy and 0.041 for numeracy were less than the acceptable 0.05 level of significance; hence the null hypothesis was rejected. This implies that difference in achievement in literacy and numeracy between pupils taught by teachers with high self-efficacy and those taught by teachers with low self-efficacy was significant.

The above results were consistent with previous studies which show a significant difference between teachers' efficacy and pupils' academic achievement (Tella, 2008; Volante, Villalon and Magadalana, 2010). Tella (2008) also investigated the relationship between teacher self-efficacy, interest, attitude, qualification, experience and pupils' academic achievement in primary

school mathematics. A sample of 254 of primary school teachers and 120 primary school pupils was used. The results revealed that teacher self-efficacy and interest had significant correlation with pupils' achievement scores in mathematics.

A study by Volante (2010), further revealed that teachers' self- efficacy beliefs was more likely to promote teachers' perseverance towards their teaching goals when they encounter obstacles and are more prone to experimenting with new effective instructional strategies that may be challenging and are more willing to take risks in their classrooms for the sake of students' success.

In Pakistan a study by Butt, Khtun and Jehan (2012), provided more revelation on the role of teachers' self- efficacy on pupils' achievement. The study was conducted to investigate the impact of English teachers' self–efficacy beliefs on students' achievement in English literacy in North West of Pakistan. The findings of the study revealed that female teachers had higher self-efficacy than their male counterparts and that female student therefore performed better than their counterparts. This means that teachers' self-efficacy significantly related to pupils' academic achievement outcomes. Therefore it can be concluded that teachers' self-efficacy has significant influence on pupils' overall academic achievement.

4.2.4 Type of School Attended and Pupils' Achievement in Literacy and Numeracy

Objective five of this study was to establish whether there was a difference in literacy and numeracy achievement between standard one pupils who attended public primary schools and those who attended private primary schools. The researcher wanted to establish whether there was a significant difference between public and private primary school pupils in literacy and numeracy. Table 4.12 presents pupils' numeracy and literacy mean scores.

Table 4. 12: Type of School and Pupils' Scores in Numeracy and Literacy

School attended	Mean scores	Mean scores	Overall Mean Score
	Literacy	Numeracy	
Public	64.6	70.1	67.4
Private	77.0	75.6	76.3
Total	70.8	72.8	71.9

Table 4.12 shows that the mean score in literacy for pupils who attended public pre-primary schools was 64.6 while that of their counterparts who had attended private pre-primary schools was 77.0. The pupils' mean scores in numeracy were 70.1 and 75.6 in public and private schools respectively with the 72.8 cumulative mean. The results imply that pupils in private primary schools performed better in both numeracy and literacy. This revelation would mean that private pre-primary schools may be offering better quality pre-primary school programmes. To determine whether the cumulative achievement was significant the following null hypothesis was formulated and tested.

H04: There is no difference in literacy and numeracy achievement between pupils in public and those in private primary schools.

To test this hypothesis Analysis of Variance (ANOVA) was run and the results are presented in Table 4.13.

Table 4. 13: ANOVA Test-results

	Sum of Squares	df	Mean Square	F	Sig.
Literacy by Type of School	4418.055	1	4418.055	13.059	.000
Numeracy by Type of School	868.132	1	868.132	2.434	.021

From Table 4.13 it can be deduced that the p-values were 0.000 for literacy and 0.021 for numeracy. The p-values for both literacy and numeracy were less than the acceptable 0.05 significance level hence the null hypothesis was rejected and it was concluded that there was a significant difference in literacy and numeracy achievement between pupils who attended public primary schools and those who attended private primary schools. The results agree with a long held view that pupils from private schools out-performed their counterparts in public schools. For example Lubienski and Lubienski (2006) compared pupils' academic achievement in the areas of reading literacy and mathematics in public, charter and private schools. The findings showed that private schools scored higher than non-chartered (public) schools. The findings reaffirm the

current study's findings whose p-value was 0.000 for literacy denoting a strong case for private schools' higher achievement.

Another study by Sabitu, Babatunde and Oluwole (2012) investigated type schools, nature of facilities and students' academic performance in Nigeria. The study compared students' academic achievement between public and private schools. Findings from the study revealed a significant difference in facilities in Ondo State. However no significant difference was recorded in academic achievement between public (state) schools and private schools.

A study by Odagboyi, Onche and Musa (2014), further reaffirms the findings of this study. They investigated literacy and numeracy performance between two public and two private primary schools using standard six pupils' primary literacy and numeracy test (PLNT). The results showed a significant difference between pupils in public and those from private primary schools in favour of pupils in private schools. Nevertheless, the study used standard six pupils (upper primary). The current study investigated literacy and numeracy achievement of standard one / lower primary pupils (Donahue, 2001).

Another study, by Amburo (2011) investigated the causes of differential academic performance of students between primary schools examinations and secondary schools examinations in Kenya. The results showed that type of primary school attended did have a significant difference on academic

performance. This study however investigated upper primary and secondary schools. The current study's investigation focused on lower primary standard one class.

Himmler (2007) also confirms the current study's findings on the influence type of school can have on pupils' overall academic achievement. His study revealed that there was a significant positive link between pupils' choice of school and their academic achievement. The findings are consistent with the current study's findings which reveal that there is a significant difference in literacy and numeracy between public and private primary school pupils.

4.2.5 Predictive value of Pre-Primary School Learning Experiences and Teachers' Self-efficacy.

The sixth objective of the study was to establish whether pre-primary school learning experiences and teachers' self-efficacy together predicts pupils' achievement in literacy and numeracy. Table 4.14 presents the results.

Table 4. 14: Self-efficacy and pupils’ achievement mean scores

Level of Teachers’ Self- efficacy		Literacy	Numeracy
Not at all (NA)	Mean	0.00	0.00
	Frequency	0.00	0.00
Very Little (VL)	Mean	0.00	0.00
	Frequency	0.00	0.00
Did Little (L)	Mean	32.35	35.30
	Frequency	1	1
Did Quite A Lot(QA)	Mean	57.73	59.03
	Frequency	6	6
Did A Lot (A)	Mean	67.10	74.90
	Frequency	1	1
Total	Mean	60.08	63.00
	N	8	8

Table 4.14 shows that pupils of teachers who indicated that they did a lot (high self-efficacy), across the self- efficacy items had higher scores in literacy and numeracy than those of teachers who did little (low self-efficacy).To achieve the objective the researcher formulated and tested the following null hypothesis.

H05: Pre-primary school learning experiences and teachers’ Self-efficacy together have no predictive value for determining pupils’ achievement in Literacy and Numeracy.

Analysis of Variance was used to test the null hypothesis and the results are presented in Table 4:15.

Table 4. 15: ANOVA^b on Predictive value of Pupils’ achievement means.

	Sum of squares	df	Mean square	Sig.
Regression	34.145	2	17.073	0.000 ^a
Residual	151.428	122	1.241	
Total	185.573	124		

a. Predictors: (Constant), Numeracy Score, Literacy score

b. Dependent Variable: pre-primary learning experience and teachers’ self-efficacy

Results in Table 4.15 indicate that the p-value was at 0.000 which is far below the level of confidence (0.05). Therefore the null hypothesis was rejected and it was concluded that pre-primary school learning experiences and teachers’ level of self-efficacy predicted pupils’ academic achievement. The results imply that the independent variables contributed significantly to pupils’ achievement in literacy and numeracy. The above findings were consistent with previous findings by Tella (2008). He examined the relationship between teacher self-efficacy, interest, attitude, qualification, experience and pupils’ academic achievement in primary school mathematics. The study sample comprised of 54 primary school teachers and 120 primary school pupils. Results revealed that

teacher self -efficacy and interest correlated significantly with the pupils' academic achievement scores. Teachers' self-efficacy was found to be the best predictor of pupils' academic achievement in mathematics followed by teachers' interest. The current study reveals that pre-primary school learning experiences and teachers' level of self-efficacy have a statistically significant predictive value on pupils' academic achievement.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

In this chapter the researcher presents the summary and conclusions of the research findings. Recommendations for various stakeholders and further research have also been presented based on the findings of the study.

5.1 Summary of Findings

Results of this study revealed that pupils performed better in numeracy compared to literacy. The mean score for pupils in literacy was 68.4 with a standard deviation of 19.2 while that for numeracy was 71.8 with a standard deviation of 18.9. This means that pupils were more prepared to handle numeracy tasks as opposed to literacy perhaps due to the fact numeracy deals more with numbers than literacy.

It was further revealed that Pupils who had attended pre-primary schools performed better in both numeracy and literacy compared with those who did not attend pre-primary schools. The difference in achievement in literacy and numeracy between pupils with pre- primary school learning experiences and those without was significant. These findings were consistent with previous studies which held the view that pre-primary school learning experiences had positive effects on pupils' academic achievement.

On the hand, girls performed better than boys in both literacy and numeracy with mean scores of 72.3 and 73.0 respectively as opposed to boys' 65 and 70.8 respectively. The difference in literacy scores between boys and girls was significant while the difference in numeracy was not significant. This implies that boys generally did not match the girls in both literacy and numeracy. Intervention measures need to be put in place to ameliorate boys' academic achievement since they seemed to match girls' achievement in both learning areas.

The findings further showed that the higher the teachers' level self-efficacy, the better the pupils' performance scores in literacy and numeracy. The difference in achievement in literacy and numeracy between pupils taught by teachers with high self-efficacy and those taught by teachers with low self-efficacy was significant. This means that teachers' level of self-efficacy positively influenced pupils' literacy and numeracy achievement. This underscores the role played by teachers' level of self-efficacy in promoting pupils' academic achievement. It implied that teachers with high self efficacy were better suited to handle standard one pupils particularly in literacy and numeracy for positive learning outcomes.

On type of school attended, it emerged that pupils from private primary schools outperformed their counterparts from public primary schools in both literacy

and numeracy. The difference in literacy and numeracy achievement between pupils who attended public primary schools and those who attended private primary schools was significant. The findings imply that literacy and numeracy achievement at primary schools favoured private primary schools. This scenario could be due to high teacher/pupil ratio characterized in public primary schools or due to the fact that public primary schools enroll children without strictly ensuring they had attended pre-primary school.

Pre-primary school learning experiences and teachers' level of self-efficacy predicted pupils' academic achievement and the contribution of the two variables to pupils' achievement in literacy and numeracy was significant. This means that children with adequate pre-primary school learning experiences and teachers with high self-efficacy perform better in literacy and numeracy than those without. The implication is that pupils with adequate pre-primary school learning experiences were more prepared and ready to cope with the academic challenges on entering standard one and that teachers with positive/high self-efficacy could help promote learning outcomes at this level.

5.2 Conclusions

Standard one pupils' achievement in literacy and numeracy in the District was just above average and pupils performed better in numeracy compared to literacy. Girls performed better than boys in both literacy and numeracy and the difference in literacy scores between boys and girls was significant while it was

not significant in numeracy. This implies that boys, besides being outperformed in numeracy by girls, they nevertheless were outdone most in literacy.

Pre-primary school learning experiences, teachers' self-efficacy, and type of school influenced pupils' achievement in literacy and numeracy. The difference in pupils' achievement in literacy and numeracy by pre-primary school learning experiences, teacher self-efficacy, and type of school attended were all significant.

Pre-primary school learning experiences and teachers' level of self-efficacy together predicted pupils' academic achievement in literacy and numeracy and the contribution of the two variables to pupils' achievement in literacy and numeracy was significant. This implies that the factors are critical determinants of pupils' achievement in literacy and numeracy.

5.3 Recommendations

This section presents various recommendations based on the findings of the study. Recommendations have been made for various stakeholders with the intention that if adopted, pupils joining standard one particularly in Gucha sub-county, would be helped to acquire necessary requisite literacy and numeracy experiences that promote effective adjustment to formal learning. Further the researcher has made recommendations for further research in this area in a bid to improve pre-primary school programmes and teaching / learning outcomes at

lower primary level which lays a firm foundation for academic achievement in subsequent grades. The recommendations include;

- (i) **Community/Parents:** Parents should ensure that children attend pre-primary school program before proceeding to primary on order to acquire adequate learning experiences.
- (ii) **Head teachers/ Managers:** Primary school head teachers and managers need to comply with the ECDE policy by ensuring that children attend pre-primary for at least two years in order to be ready to manage primary school education.
- (iii) Further, Head teachers and primary school managers should ensure that standard one teachers and lower primary school classes are allocated teachers with not only the required skills and attitudes but with positive self-efficacy to help children cope and manage academic challenges as they start primary school grade one.
- (iv) Ministry of Education, Science and Technology should sponsor in-service training for standard one teachers to improve their self-efficacy which is needed to help lay a firm literacy and numeracy foundations. There is need for the government also to organize workshops and refresher courses for teachers to boost their self-efficacy since high teacher-self efficacy have positive correlation with pupils' literacy and numeracy achievement. The ministry

should also allocate more funds and other resources to promote literacy and numeracy learning in primary schools.

(v) Kisii county government should embrace early childhood programmes to help give learners a head-start in order to improve academic achievement across primary and secondary schools examinations which have been dismal over the years. It should be noted that a good start often spells a good ending.

(vi) Ministry of Education Science and Technology: the MoEST should put in place policies and laws requiring mandatory pre-primary school learning experiences for children joining standard one. At least two compulsory years of pre-primary school attendance could give all children and equal head-start.

(vii) Non-governmental organizations, faith-based organization, community based organizations and other development agencies should initiate, support and sensitize the masses on the importance of pre-primary school programmes as a means of improving academic performance. This study revealed that pre-primary school learning experiences significantly influences and can predict pupils' academic achievement. They therefore may need to redirect and refocus the available resources towards promoting quality pre-primary school programmes for all the children.

(viii) Equally important is the need for standard one teachers to identify children who may be entering standard one without the necessary requisite learning experiences for ease intervention measures. This will help ameliorate children's literacy and numeracy difficulties early enough.

(ix) On type of school and literacy and numeracy achievement, it emerged that pupils from private primary schools outperformed their counterparts from public primary schools in both literacy and numeracy. Therefore, it is important that the Government puts in place programmes and facilities to ameliorate this discrepancy which could spill over to later grades.

5.4 Recommendations for Further Research

- This study was carried out in one district in Kenya. Future studies should cover the whole country to re-evaluate and determine the importance of pre-primary school experiences in determining learning outcomes particularly at primary school grades.
- This study further looked at gender differences in literacy and numeracy as children entered standard one. Future studies should investigate gender differences in all subjects of the curriculum.
- Further, on gender differences, the study results revealed that there were significant gender differences between the boys and girls in both literacy and numeracy. The researcher therefore recommends that future studies

should investigate factors influencing gender parity in academic achievement among lower primary school pupils.

- Teachers' self-efficacy was found to determine and predict pupils' academic achievement. There is need for future studies to investigate the factors that influence teachers' self-efficacy.

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APPENDICES

Appendix I: Letter of Consent

TO WHO IT MAY CONCERN

This is to inform you that one of the pertinent ethics in research is that participation by any individual should be by informed and voluntary consent.

Therefore you are expected to willingly participate without feeling coerced.

Consequently, your participation should be triggered by your own consent. I

thank you in advance for your willingness to participate in this research.

Yours faithfully

Ong'ang'a H.M. Ouko

Kenyatta University

**Appendix II: Checklist for Pre-Primary School Learning Experiences For
Standard one Teachers**

This checklist is for you as the class one teacher to rate your pupils on the basis of their entry behaviour to standard one. Children join standard one with varied experiences. You are requested to rate each pupil appropriately without any favour. This information is only geared to establish pupils' entry competencies or behaviour in standard one. The information will be used for the purpose of this study only and there will be no grade or marks awarded at the end. Thanks for your co-operation.

Part A: Background Information

i. Pupil's Number: _____

ii. School code _____

iii. Type of school

Public { }

Private { }

iv. Gender of the pupil:

Male { }

Female { }

v. Attended pre-primary school:

Yes { }

No { }

vi. What type of pre-primary school did s/he attend?

Public { }

Private { }

vii. If yes tick (√) the bracket that indicates the number of years the pupil attended pre- primary school

Less than one year { }

One year { }

Two years { }

Three years { }

More than three years { }

Part B: Pre-Primary School Learning Experiences (Literacy)

	Knowledge, skills, and Abilities of the child	Unable	Can Attempt	Able
1.	Can identify primary colors			
2.	Can tell his or her name			
3	Can recognize his/her name			
4	Can identify letters of the alphabet.			
5	Knows days of the week.			
6	Can follow simple directions			
7	Can actively listen to a story.			
8	Can re-tell a story.			
9	Can write letters of the alphabet.			
10	Can write his/her name.			
11	Names things/objects well			
12	Can identify missing letters of the alphabet			
13	Can read simple words clearly			
14	Can write simple words e.g. (boy, book, ink)			

Part C: Checklist on pupils' Pre-Primary School Learning Experiences

(Numeracy)

	Abilities in Knowledge and skills	Unable	Attempts	Able
1	Can count 1-20 very well			
2	Can write numbers 1-20			
3	Can identify missing numbers in 1-20			
4	Knows basic shapes (circle, square and triangle)			
5	Can sort and group basic shapes according to colour without a problem			
6	Can add single digit sums			
7	Can add simple double digit sums			
8	Can manage a two digit addition sum without carrying			
9	Can write number from memory 1-20			
10	Can identify basic geometrical shapes(circle, triangle, rectangle and square)			

Appendix III: Self- Efficacy Scale for standard one Teachers

Please tick (√) your appropriate response in the spaces provided. This information will be confidential and will be used for research purposes only. No marks or credit will be given to anybody whatsoever. Therefore just give your sincere response. Thanks a lot for your cooperation.

Part A: Background information

i) Name of School (Give Letter i.e.; a, b, c--) _____

ii) Type of school: Public { } Private { }

iii) Pupils' gender: Male { } Female { }

iv) Your highest professional qualification?

Certificate { } Diploma { }

Degree { } Other Specify { }

v) What is the number of years you have been teaching after training?

1-5 Years { } 6- 10 Years { }

11-15 Years { } 16-20 Years { }

20+ Years { }

Please read carefully the statements below and tick the option that best describes your response using the scale provided.

Where;

NA = Nothing at All; VL = Very Little

L = Little QA = Quite A Lot A= A Lot

Part B: Teacher Self Efficacy Scale

	How much can you do to	NA	VL	L	QA	A
1.	Assess pupils' previous knowledge when they join standard one?					
2.	Involve parents' participation?					
3.	Ensure all pupils are able to read and write?					
5.	Respond to questions from your pupils during the lesson?					
6.	Adjust your lesson to the level of individual pupil?					
7.	Evaluate pupils understanding of new concepts?					
8.	Make pupils to believe they can perform well?					
9.	Help your pupils to like your subject?					
10.	Motivate pupils?					
11.	Encourage children to participate in group activities?					
12.	Help pupils who perform poorly in class work?					

Appendix IV: Proforma for individual pupils' literacy and numeracy achievement scores at end of term

Section A: Background Information.

Name of school (i.e.; A, B, C...) _____

- i. Gender of pupil: Male { } Female { }
- ii. Attended pre-primary school: Yes { } No { }

Section B: Pupils' mean scores in literacy and numeracy

	Pupil's Number	Mean Scores		Cumulative
		Literacy	Numeracy	Mean
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

Filled from end of term's continuous assessment scores

**Appendix V: Research Authorization by Graduate School Kenyatta
University**



**KENYATTA UNIVERSITY
GRADUATE SCHOOL**

E-mail: kubps@yahoo.com
dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Our Ref: E83/10889/07

Date: 8th October 2013

The Permanent Secretary,
Ministry of Higher Education, Science & Technology,
P.O. Box 30040,
NAIROBI

Dear Sir/Madam,

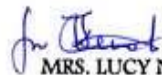
RE: RESEARCH AUTHORIZATION FOR MR. ONG'ANG'A H.M. OUKO - REG. NO. E83/10889/07

I write to introduce Mr. Ong'ang'a H.M. Ouko who is a Postgraduate Student of this University. He is registered for a Ph.D degree programme in the Department of Early Childhood Studies in the School of Education.

Mr. Ouko intends to conduct research for a thesis project entitled, "**Determinants of Standard One Pupils' Achievement in Literacy and Numeracy in Gucha District, Kisii County, Kenya.**"

Any assistance given will be highly appreciated.

Yours faithfully,


**MRS. LUCY N. MBAABU
FOR: DEAN, GRADUATE SCHOOL**

LNM/fwk

Appendix VI: Authority Letter to Conduct a Research by the MoEST

REPUBLIC OF KENYA MINISTRY OF EDUCATION



Telephone: 058-4131020

When replying please quote

REF: GU/ED/ADM/1/VOLIII/55

DISTRICT EDUCATION OFFICE
GUCHA DISTRICT
P.O. BOX 121
OGEMBO - 40204

Date: 15th March 2013

Mr Ong'ang'a H Ouko


RE: PERMISSION TO CARRY OUT RESEARCH IN SCHOOLS IN THE DISTRICT

This is to grant you permission to carry out research in the schools you intend to work with in this district.

By this letter, Head teachers and other institutions leaders are requested to give you the necessary assistance you request.

This office looks forward to receive a copy of your research findings for information and use as appropriate to help change the status QUO.

Wishing you success.


J M Maswi
For District Education Officer
Gucha District

District Education Officer
GUCHA DISTRICT

**Appendix VII: List of Public and Private Primary Schools
(Gucha Sub- County)**

MINISTRY OF EDUCATION

GUCHA DISTRICT

LIST OF PRIMARY SCHOOLS IN THE DISTRICT

A: PUBLIC SCHOOLS

1. Don Bosco
2. Matagaro
3. Egetuki ✓
4. Machongo
5. Tendere DEB
6. Kebere DEB ✓
7. Getare DEB ✓
8. Mangere DEB
9. Ntamocha DEB
10. Gitono
11. Maroba DOK
12. Getuki DEB
13. Nyaburumbasi DOK
14. Nyagenke DEB
15. Nyamonyo SDA ✓
16. Bombaba DOK
17. Buyonge DEB


DQASO GUCHA
DISTRICT
15/3/13

Schools Cont.

18. Rianyakwara
19. Tunta DEB
20. Nyansakia II
21. Kimai
22. Nyamboga
23. Nyagesa ELCK
24. Nyamboga
- 24 25. Nyamiobo SDA
- 26 26. Nyamasege
- 27 27. Nyamiobo DOK
- 27 28. Nyamaonde
- 28 29. Nyarenda Deb
- 29 30. Nyataro II
- 30 31. Itare PEFA
- 31 32. Rionchogu DEB
- 32 33. Nyantogo
- 32 34. Itabago DEB
- 34 35. Nyamoronga
- 35 36. Nyamasebe ELCK
- 36 37. Nyansara DOK
- 37 38. Riaongera DEB
- 38 39. Gakero
- 39 40. Kineni PEFA

AR
DQASO GUCHA
DISTRICT
15/3/13

40 Sengera Boarding

B: PRIVATE SCHOOLS

1. Elsa Preparatory
2. Keminini
3. Misesi Junieur
4. Mt. Sinai
5. Sengera Preparatory
6. Bahati Itibo
7. Royola
8. Charkens
9. Riajome
10. Riounde
11. Ribwago
12. Mango Tree
13. Golden
14. Kineni
15. Ikoba Joyland
16. Salvador
17. Eburi Township
18. Masfew
19. Neema Nuru


DQASO GUCHA
DISTRICT
15/3/13