PREDICTORS AND OUTCOMES OF ACADEMIC SELF-CONCEPT AMONG NON-FORMAL PRIMARY SCHOOL PUPILS IN RUAARAKA DIVISION, NAIROBI COUNTY, KENYA

BY

CHARITY C. NYAGA
E83/13225/2009

A RESEARCH THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY IN THE SCHOOL OF EDUCATION OF KENYATTA UNIVERSITY

OCTOBER, 2016
DECLARATION

I confirm that this research thesis is my original work and has not been presented for a degree in any other University or institution. The thesis has been complemented by referenced sources duly acknowledged. Where text, data, graphics or tables have been borrowed from other works- including internet, these sources are specifically accredited and references cited in accordance with anti-plagiarism regulations.

Signature…………………………………… Date……………………………………

Nyaga, Charity C.
E83/13225/2009

This thesis has been submitted for review with our approval as University Supervisors.

Signature…………………………………… Date……………………………………

Dr. Tabitha Wang’eri
Department of Educational Psychology
Kenyatta University

Signature…………………………………… Date……………………………………

The Late Dr. Sammy Tumuti
Department of Educational Psychology
Kenyatta University
DEDICATION

This thesis is dedicated to my parents, the late Japhet Njiru and Rebecca Muthayu for taking me to school, my husband, Nyaga Mutunga for his patience, financial and moral support, my children Nora, Dina, Janice, Antony, Dennis and my sons-in-law Kenneth, Martin and Collins for their encouragement. Last but not least are my grandchildren who kept on wondering how their grandmother is still in school and their constant question was “Cucu mwalimu wako anakaa je?”
ACKNOWLEDGEMENTS

The task of carrying out this research and writing this thesis took more than my individual effort to accomplish. It has been a special experience and I feel obliged to acknowledge those who made this achievement possible. First, I am most grateful to God for taking me this far. I wish to acknowledge the inputs of my able supervisors, Dr. Tabitha Wang’eri and the late Dr. Sammy Tumuti for their intellectual guidance and moral support during the trying phases of this research. I appreciate Dr. Peter Mwaura for his invaluable technical assistance in data analysis. My sincere thanks go to Mrs Mary Mugo and Mrs Violet Sakari who took their time to walk me through all the sampled non-formal primary schools in the slums of Ruaraka Division. I appreciate my workplace colleagues in the Ministry of Education Science and Technology, Jogoo B and in particular Mrs. Nellie Kamau and Mrs. Grace Wanjala for their support. I am grateful to Mr. Eustace Nkoroi and Mr. Timothy Mwangi of PCEA Nthambo Church for standing in for me when I was not available for my church elder’s duties.

Above all, my most sincere appreciation and gratitude goes to my entire family for bearing with my prolonged physical as well as psychological absence during the period I was working on this thesis. I appreciate my husband, Mr Nyaga Mutunga, without whose continuous moral and financial support, patience and tolerance, this thesis would not have been accomplished. I recognize the support of my two sons, Antony and Dennis, for their unfailing and tireless support in so many ways, but especially in computer technology and running errands pertaining to this work. I acknowledge my daughters, Nora, Dina and Janice, my sons-in-laws Kenneth, Martin and Collins for their support and encouragement.
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**ABBREVIATIONS AND ACRONYMS**

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<tr>
<td>ADHD</td>
<td>Attention-Deficit/ Hyperactivity Disorder</td>
</tr>
<tr>
<td>ASC</td>
<td>Academic Self-concept</td>
</tr>
<tr>
<td>ASDQ-II</td>
<td>Academic Self-Description Questionnaire-II</td>
</tr>
<tr>
<td>KCPE</td>
<td>Kenya Certificate of Primary Education</td>
</tr>
<tr>
<td>EFA</td>
<td>Education for All</td>
</tr>
<tr>
<td>GoK</td>
<td>Government of Kenya</td>
</tr>
<tr>
<td>KCPE</td>
<td>Kenya Certificate of Primary Education</td>
</tr>
<tr>
<td>MoEST</td>
<td>Ministry of Education, Science and Technology</td>
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<tr>
<td>NACOSTI</td>
<td>National Commission for Science, Technology and Innovation</td>
</tr>
<tr>
<td>NFE</td>
<td>Non-Formal Education</td>
</tr>
<tr>
<td>NFS</td>
<td>Non-Formal Schools</td>
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<td>UPE</td>
<td>Universal Primary Education</td>
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ABSTRACT
The primary school pupils’ performance in national public exams is skewed towards the poorer mean scores. The lowly performance has been mainly ascribed to school ecological aspects and minimum research has been carried out on psychological influences which may account for pupils’ academic achievement. The purpose of the present investigation was therefore to explore some predictors and outcomes of academic self-concept among pupils in non-formal primary schools. Specifically, the selected predictors of academic self-concept were pupils’ perception of teachers’ expectations, academic buoyancy and pupils’ internal/external frames of reference. Academic achievement and academic engagement were studied as outcomes of academic self-concept. Further, gender differences in both academic self-concept and academic achievement were studied. Carl Rogers’ theory of personality development formed the theoretical framework. The study adopted an ex post-facto research design. The target population was all the 2014 class 8 pupils comprising of 2,706 pupils (1,272 boys and 1,434 girls) in non-formal primary schools in Kasarani District, Nairobi County and the accessible population was 1,715 class 8 pupils in Ruaraka Division. The sample consisted of 367 pupils’ from 10 non-formal schools. Stratified, systematic and purposive procedures were used in the selection of schools and participants. Research instruments included pupils’ questionnaire, school records and academic self-concept ladders. Perception of Teachers Expectation Scale and Academic Buoyancy Scale were adapted to measure perception of teachers’ expectations and academic buoyancy respectively. Academic Self-Description Questionnaire II was adapted to measure pupils’ Internal/External frame of reference while School Engagement Scale and Students Engagement Instrument were adapted to measure pupils’ academic engagement. The questionnaire was piloted on 30 pupils from two schools. Pupils’ academic achievement was measured by use of examination records obtained from the schools. Both descriptive and inferential procedures were employed to analyze the data. The results provided indication that pupils’ perceptions of teachers’ expectations, academic buoyancy and internal/external frame of reference significantly predict academic self-concept. Further, academic achievement and academic engagement were significant outcomes of academic self-concept. However, the most critical predictor of academic self-concept was internal/external frame of reference and the most significant predictor of academic achievement was academic self-concept. Significant gender differences were found in academic self-concept and they were in favour of the male gender, but there were no significant gender differences in academic achievement. A key implication of the study was that teachers, parents and other stakeholders in education should collaborate in creating favourable school and home environments for nurturing the development of academic self-concept among pupils. The study recommends training of teachers in diversity of issues and sensitivity when handling pupils so that they remain optimistic, motivated and successful through development of positive academic self-concept.
CHAPTER ONE

INTRODUCTION AND CONTEXTUALIZATION OF THE STUDY

1.1. Introduction

This chapter reviews the background to the study, statement of the problem, the purpose and the objectives of the study. The chapter further states the research hypotheses, the significance of the study, the limitations, delimitations and the assumptions of the study. Moreover, the theoretical and conceptual frameworks are presented. Finally the chapter describes the operational definitions of terms.

1.2. Background to the Study

Academic self-concept refers to the personal beliefs someone develops about their academic abilities and skills (Bong & Skaalvick, 2003). Academic self-concept relates to how well one does at school or how well one learns. Understanding academic self-concept is essential, especially among the non-formal school pupils because it may be a predictor of academic achievement and academic behaviour (Mohan & Abebech, 2009). Non-formal education is aimed at meeting specific learning needs of children in the slums at a low cost in terms of time and resources. However, since these children study a formalized curriculum leading to formal examinations just like their counterparts in the formal primary schools, there was need to study and understand the predictors and outcomes of academic self-concept among the underprivileged pupils in the non-formal primary schools in Ruaraka Division, Nairobi County.
Variation in academic achievement can be linked to emotional factors of which academic self-concept is critical. Areepattamanni and Freeman, (2008) posit that academic self-concept has the greatest potential of being directly influenced by the regular class room teacher and should therefore be of main concern. A high academic self-concept influences academic behaviours and choices, educational ambitions and the consequent academic achievement (Marsh, 2002). Parents and teachers are therefore charged with the responsibility of building the learners self-concept irrespective of their academic abilities by acknowledging each learner’s positive aspects. Identification and development of talent in whichever area the child is strong builds a positive self-image for academically weak learners. The classroom teacher therefore, has a greater role to play in ensuring that each individual learner’s confidence is elevated by raising his/her academic self-concept.

Learners should be equipped with skills to enable them to feel good about themselves cognitively, socially, physically and emotionally (Kwena, 2007). Self-confidence and a positive self-image (self-concept) helps the learners make proper judgments when faced with social challenges. The difficulties which most people experience in their life are related to the ways they appraise themselves and their environments. Pupils’ poor school performance, low motivation and lack of persistence are typical of the underachiever and potential drop out and are a result of defective perception of the self and the world (Kwena, 2007).

In educational research, the academic components of self-concept are particularly important. Academic self-concept influences several other educational outcomes and it
plays a central role for many aspects of students’ academic and general functioning (Dickhauster, Reuter & Hilling, 2005; Marsh & Hau, 2004). The significance of academic self-concept in education as an influence variable has been shown by Woon and Chee (2008). Their research showed that high academic self-concept students have more confidence and are more open to criticism unlike students with low academic self-concepts. They openly express their opinions are more active and participate more in class activities and discussions.

Research on self-concept or the perceived competence shows that among the students of the same capability the ones with low-academic self-concepts are not persistence enough (Fredrick, Simon & Michel, 2012). Persistent students perceived themselves as more competent in school activities and attained high academic achievement and healthy functioning. In order to manage challenging situations, students need a resilient belief that they can achieve the desired results through their effort while remaining undaunted by setbacks or failure (Jessica, 2011). If a student is overcome by self-doubt, he or she will have difficulty performing even in well-established skills.

Teacher expectations are beliefs teachers hold about their pupils and when communicated to the pupils impact positively or negatively on their academic outcomes. Pupils’ perceptions of teachers’ expectations have been shown to cultivate positive self-beliefs of academic ability and enhance learning among students. A research by Lan (2012) in China focused on researcher-administered interventions in form of performance feedback in a natural classroom setting. The treatment successfully enhanced participants’ English
self-concept. A study by Berg and Coetzee (2014) in the Republic of South Africa explored the relationship between university students’ academic self-concept and perceptions of teachers’ expectations. The results of the empirical investigations revealed significant correlation between academic self-concept, perceptions of teachers’ expectations and academic achievement.

Similarly the findings of a Kenyan study by Mwema and Matee (2013) shows that the kind of feedback teachers give on students’ academic performance and ability influence their academic self-concept. The findings further indicate how labeling of students by teachers affect their self-concepts. It also implies that positive attitudes towards oneself indicate positive achievements while negative attitudes indicate failure. The findings of this study may help teachers to focus on positive feedback and communicate positive expectations about academic performance and ability of students in order to encourage them to work hard and develop a positive academic self-concept.

On the psycho-educational setting, academic buoyancy is another aspect that may assist learners who experience problems in schoolwork. Academic challenges, setbacks and adversities are all a reality of everyday school life. Recent research has suggested that students’ capacity to successfully negotiate these circumstances is an important element of their academic development (Martin & Marsh, 2009). The findings of a study by Martin (2012) revealed a significant and positive association between academic buoyancy and educational outcomes.
A study by Mampane (2014) in a South African township demonstrated that adolescents living in adverse developmental conditions benefit from protection or support to overcome obstacles and adversities. This way they enhance their own powers of resilience within the school environment. Literature on academic buoyancy in schools confirms that schools play an important role in the academic self-concept formation (Ebersohn & Ferreira, 2011; Equivel, Doll & Oades-Sese, 2011). Osher, Kendziora, Spier and Garibaldi (2014) argue that by providing protection to learners, the school creates a “safe harbour”. Providing support, contributes to educational resilience, academic buoyancy and the establishment of an optimal learning environment in schools. These factors should therefore be prioritized in schools (Mampane & Bouwer, 2011). In Kenya Kabiru, Beguy, Ndegwa, Zulu and Jesson (2012) studied adolescence resilience in informal settlements in Nairobi. The study established that majority of the adolescents living in hardship environments attain positive educational outcomes and positive academic self-concept.

Internal/External frame of reference has been shown to predict academic self-concept. External frame of reference is the pupils’ tendency to compare their academic ability with the ability of other pupils in their immediate school environment. Internal frame of reference is the pupils’ tendency to compare their academic ability in one subject with the ability in another subject. Despite the importance of concrete information such as school subject scores in providing students with benchmarks upon which to judge their own academic ability, formation of their academic self-concept seems to require an additional comparison of their ability with some standard frame of reference (Marsh, 1993a). The
relationship between Internal/External frame of reference and academic self-concept has two perspectives; pupils tend to use significant others in their school environment as frames of reference as well as their own performance in specific subjects in forming self-assessment as a basis of academic self-concept (Xu, Hau, Movin, Marsh, Ho & Adel, 2013). Therefore academic self-concept may be viewed as a positive outcome of Internal/External frame of reference.

Academic engagement is the extent to which pupils are interested in, committed and curious about what they are learning (Simon-Morton & Chen, 2009). The relationship between academic self-concept and achievement may be mediated by academic engagement (Skinner, Furrer, Marchard & Kinderman, 2008; Skinner, Kinderman, Connel & Wellborn, 2009). Academically engaged students tend to score higher grades and perform better in tests, Disengagement students portray negative outcomes such as truancy, troublesome classroom behaviour and eventually dropping out of school (Klem & Connel, 2004). Afuwape (2011) in a study conducted in Nigeria further reaffirms that academic self-concept enables students to build self-confidence in themselves at school. This confidence stirs them to pursue academic excellence. A study by Kwena (2007) in Bondo District, Nyanza Province revealed that educational outcomes may be pegged to the pupil’s academic self-concept. She also found out that self-concept influences behaviour and achievement in school and that pupils behave in ways that are consistent with their beliefs about themselves.
The main concern of the current investigation was to explore the predictors and outcomes of academic self-concept among non-formal primary school pupils in Ruaraka Division, Nairobi County. Specifically it looked at the extent to which pupils’ perceptions of teachers’ expectations, academic buoyancy and pupils’ internal/external frame of reference predict academic self-concept. The study also examined academic achievement and academic engagement as outcomes of academic self-concept. The study further investigated gender differences in academic achievement and academic self-concept. In addition, the investigation also determined the most significant predictor of academic self-concept and academic achievement.

1.3. Statement of the Problem

Poor performance in Kenya Certificate Primary Examination (KCPE) in Non-formal primary schools in Ruaraka Division of Kasarani District in Naironi County may be linked to poor academic self-concept. The consequence of low academic self-concept in school is child wastage resulting in academic disengagement which perpetuates repetitions, low retentions, poor transition, dropouts and low completion rates. If academic self-concept is not addressed, such pupils may miss school (absenteeism) and identify with a more interesting or gainful activities to engage in and dropping out of school which to them may be perceived as a more permanent solution (Reid, 2005). This may result in loss of many worthwhile life prospects either for the individual pupil or for the society in general. The learner may miss the opportunity to further learning while the society may not have enough skilled human capital needed for wealth creation.
From the foregoing background to the study, it is evident that perceptions of teachers’ expectations, internal/external frame of reference and academic buoyancy have been found to predict academic self-concept. Subsequently, academic achievement and academic engagement have been illustrated as outcomes of academic self-concept. Even though empirical evidence has reported the relationship of the study variables to academic self-concept, so far no study has been found to have studied the current research variables in non-formal schools.

Investigations by Muasya (1989) on academic self-concept have focused on secondary school pupils. She found out that low academic self-concept resulted in poor academic performance. This study was conducted more than twenty years ago. There was need to conduct a research in primary schools in order to upgrade these findings. Ngesa (1998) investigated academic self-concept in primary schools in Mathare Division, Nairobi by adopting directional hypotheses and two way variance methods. The current research was conducted in Ruaraka Division, Nairobi County and used null hypothesis, Simple Regression Analysis and t-test for Independent Samples. Kwena (2007) did a study in Nyanza Province of Kenya using sample from a rural set up comprising both lower and upper primary pupils in a formal school. The current research used an urban slum set up using a sample from class eight in Non-formal primary schools. Thus academic self-concept in a slum set up has received little attention, if any, yet academic self-concept has been reported to influence academic achievement and academic engagement in developed countries. Therefore, the central problem of this study was to explore the predictors and outcomes of academic self-concept among Non-formal primary school pupils in Ruaraka
Division, Nairobi County who have mediocre performance in national exams. Specifically it looked at perceptions of teachers’ expectations, academic buoyancy and pupils’ internal/external frame of reference as predictors of academic self-concept and academic achievement as well as academic engagement as outcomes of academic self-concept. Stakeholders understanding of the relationships among the current study variables may help rescue pupils who may be victims of their own negative perceptions as learners and how they interact with the learning environment. This is because predictors and outcomes of academic self-concept are constructs influencing many educational outcomes. Parents and teachers should encourage children by focusing on their particular skills and capabilities so as to enhance their academic self-concept.

1.4. Purpose of the Study

Based on the problem stated, the purpose of the study was to explore the predictors and outcomes of academic self-concept among the children in the non-formal primary schools in Ruaraka Division. These children live in difficult circumstances in the overcrowded urban settlements. The researcher therefore intended to determine whether pupils’ perceptions of teachers’ expectations, academic buoyancy and internal/external frame of reference predict non-formal primary pupils’ academic self-concept. In addition, the study aimed to establish whether academic achievement and academic engagement are outcomes of academic self-concept among the pupils enrolled in non-formal primary schools in Ruaraka Division. When the stakeholders in education understand the interaction among the current study variables, that knowledge may help them create
favourable environments for proper academic self-concept formation hence improved pupils’ academic performance in Non-formal primary schools in Ruaraka Division.

1.5. Objectives of the Study

The study was guided by the following objectives:

(i) Describe the extent to which perceptions of teachers’ expectations predict academic self-concept among pupils in non-formal primary schools.

(ii) Establish whether academic buoyancy predicts academic self-concept of pupils in non-formal primary schools.

(iii) Determine how pupils’ internal/external frame of reference predicts academic self-concept.

(iv) To test if there are any gender differences in academic self-concept and academic achievement among pupils in non-formal primary schools.

(v) Investigate whether academic self-concept predicts academic achievement among pupils in non-formal primary schools.

(vi) To find out whether academic self-concept is a predictor academic engagement among pupils in non-formal primary schools.

(vii) To develop a predictive model linking perceptions of teachers’ expectations, academic buoyancy, internal/external frame of reference, academic achievement and academic engagement to academic self-concept.

(viii) To develop a predictive model linking perceptions of teachers’ expectations, academic buoyancy, internal/external frame of reference, academic self-concept and academic engagement to academic achievement.
1.6. **Research Hypotheses**

The research was guided by the following research hypotheses:

H$_{a1}$: Perceptions of teachers’ expectations significantly predict academic self-concept of pupils in non-formal primary schools.

H$_{a2}$: Academic buoyancy significantly predicts academic self-concept of the pupils in non-formal primary schools.

H$_{a3}$: Pupils’ internal/external frame of reference significantly predict academic self-concept.

H$_{a4}$: There are gender differences in academic self-concept and academic achievement among the pupils in non-formal primary schools.

H$_{a5}$: Academic self-concept is a significant predictor of academic achievement among pupils in non-formal primary schools.

H$_{a6}$: Academic self-concept is a significant predictor of academic engagement among pupils in non-formal primary schools.

H$_{a7}$: Perceptions of teachers’ expectations, academic buoyancy, Internal/external frame of reference, academic achievement and academic engagement are significant predictors of academic self-concept.

H$_{a8}$: Perceptions of teachers’ expectations, academic buoyancy, Internal/external frame of reference, academic self-concept and academic engagement are significant predictors of academic achievement.
1.7. **Significance of the Study**

The findings of this study may be significant in a number of ways. First, the information gathered may inform government policy issues on non-formal education offered in non-formal primary schools as far as predictors and outcomes of academic self-concept. The education policy interventions may facilitate academic self-concept formation as well as promotion and enhancement of the same. Since academic excellence is a priority of any education system, the non-formal primary school pupils’ enhanced academic self-concept would facilitate improved performance in KCPE.

Secondly, the research may benefit teachers and parents and other stakeholders in education by revealing how pupils’ perceptions of teachers’ expectations, academic buoyancy and internal/external frame of reference are predictors of academic self-concept. The research may also benefit them by revealing how academic achievement and academic engagement are outcomes of academic self-concept. This way stakeholders in education may create a conducive atmosphere that may enhance academic self-concept and probably resulting in better academic performance and improved school completion and transition rates.

Thirdly, the study may contribute to the existing knowledge on perceptions of teachers’ expectation, academic buoyancy and pupils’ internal/external frame of reference as predictors of academic self-concept. Equally the current research generates psychological literature on academic achievement and academic engagement as outcomes of academic self-concept for pupils living in contexts characterized by adversity and
enrolled in institutions that resemble formal schools but whose operating environments make delivery of learning services difficult. The findings may also add on cross-cultural research on academic self-concept.

1.8. **Limitation and Delimitations of the Study**

1.8.1. **Limitations of the Study**

The study was limited to the inability of the researcher to manipulate the independent variables because they were retrospective in nature. The researcher took the effects as they were. These were perceptions of teachers’ expectations, academic buoyancy and internal/external frame of reference which had already influenced the pupils’ academic self-concept by the time of the study. Consequently, academic self-concept had also influenced pupils’ academic achievement and academic engagement at the time of the investigation.

Another major imitation to the study was the researcher’s inability to generate the sample through random assignment because the design lends itself to a self-selection form of sampling. Respondents were studied because they possessed the characteristic of interest. Therefore the results of the investigation may not be generalizable beyond the target population from which the sample was drawn.

There may be a high possibility of lack proper interpretation of results because of lack of a control group. The researcher may not have been able to give a reasonable explanation of the relationship between the independent and dependent variable. This is because no
single factor is the cause of the outcome but some combination and interaction of factors go together under certain conditions to yield a given outcome. Even when a relationship between variables is discovered, determining which the cause is and which the effect is may be difficult.

Since all items of the questionnaire were based on self-reports, it was unavoidable that there may have been a certain degree of subjectivity. It was not possible to control attitudes of the respondents which may have affected the research findings. This is because respondents sometimes, give socially acceptable answers to avoid offending the researcher (Nyaga, 2003), which result in responses being of low validity and reliability.

1.8.2. Delimitations of the Study

The study was delimited only to the 2014 class eight (8) pupils in selected non-formal schools in Ruaraka Division. This was because majority of the non-formal education schools in Kenya are located in Nairobi County and clustered in particular areas of the city. It did not attempt to discuss every possible predictor and outcome of academic self-concept. It only focused on perceptions of teachers’ expectations, academic buoyancy and pupils’ external/internal frame of reference as predictors of academic self-concept. It also explored academic achievement and pupils’ academic engagement as outcomes of pupil’s academic self-concept. Thus the delimitations included the stated objectives and research hypotheses. A further delimitation was the close-ended Likert scale responses. The selected methodology also set boundaries on what the study could ascertain.
1.9. Assumptions of the Study

This study was carried out under the following assumptions:

(i) Perceptions of teachers’ expectations, academic buoyancy and internal/external frame of reference predict pupils’ academic self-concept and academic achievement and academic engagement are outcomes of academic achievement self-concept.

(ii) The most prevalent methods included \textit{ex post facto} design and hypotheses testing technique. It is assumed that the predictor variables will have exerted their influence on the outcome variables.

(iii) The sample was representative of the non-formal school population, the instruments and the data collection procedures were effective enough to capture the anticipated phenomena.

(iv) That the respondents cooperated by giving correct, accurate information, responded honestly and were be able to interpret the questions correctly.

1.10. Theoretical and Conceptual Framework

1.10.1. Theoretical Framework

(a) Carl Rogers’ Theory of Personality Development (1959)

Carl Rogers Theory of Personality Development (1959) accentuates the significance of self-actualizing tendency in influencing human personality. He believed that humans are constantly reacting to stimuli in their subjective reality (phenomenological field) which fluctuations all the time. Eventually a person develops a self-concept based on feedback from this field of reality. Rogers believed that through positive regard and positive self-
regard, a person could become their “real self”, a person functioning at their true and full potential.

Self-concept is central in Rogers’ theory (1959). In development of self-concept positive regard is the key factor. Unconditional positive regard is an environment that is free of preconceived notions of value. Conditional positive regard is full of conditions of worth that must be achieved for one to be accepted. Human beings develop an ideal self and a real self based on conditional status of positive regard. How closely one’s real self matches up with their ideal self is called congruity. This ideal self is a self that is at a standard an individual cannot meet or is simply unattainable. The space between this real and ideal self is known as incongruity. The bigger this space is, the less likely an individual will attain their potential. Due to incongruity, people often feel anxious or uncomfortable. In these situations people use defense mechanisms.

The theory is based on life experiences, social evaluations, values and attitudes of the individuals’ significant others. If self-concept is based on the values of significant others, this can give rise to incongruence between the self and experience. This affects decision making. Conditions of worth reduce peoples’ self-confidence and this can affect their potential towards self-actualization (Rogers, 1959). Rogers believed that if an individual attained self-actualization they could be a full functioning person living a “good life”. That individual would have a positive psychological outlook, trust their own feelings and have congruence between self and experience.
There is some empirical support for the hypothesis that congruence between the self and experience leads to better adjustment and less defensiveness (Chodorkoff, 1954, cited in Rogers in 1959). Research does support the notion of self-actualizing tendency, the final psychological development allowing individuals to reach their full potential (Sheldon & Kasser, 2001). Empirical evidence posits that self-actualization helps one recognize self-destructive behaviours (Sheldon, Arndt & Houser-Marko, 2003). People become destructive only when a poor self-concept or external constraints override the valuing process. As a result, such pupils cannot interact fully and openly with their environment and will end up underachieving (Hjelle & Ziegler, 1992; Cloninger, 2000).

There is a link between Rogers’ (1959) theory and the current study as he emphasized the role of the individual in shaping their internal and external world. Rogers (1959) stressed that the human person is active, creative, experiencing being who subjectively responds to current perceptions, relationships and encounters. A classroom tone of support through positive teacher expectations helps alleviate fears and anxiety. Through creating a positive relationship with the pupils’ teachers have the opportunity to instill conditions of worth in their pupils. Teachers’ acceptance helps the pupil to have courage and confidence to face new experiences, performs well on academic tasks and this elevates the pupils’ academic self-concept.

According to Rogers (1959) people feel, experience and behave in ways consistent with their self-image which reflect what they would like to be on ideal-self. Pupils’ internal/external frame of reference boosts their academic self-concept in that a child
views his/her perceived academic ability not according to the subject scores but comparative to his/her classmates as well as by comparing his/her own ability in school subjects. The closer the pupils’ self-image and ideal image are to each other, the more consistent and congruent they are and the higher the sense of academic self-concept. The development of congruence depends on unconditional positive regard. Rogers (1959) believed that for a person to achieve self-actualization or positive academic self-concept they must be in a state of congruency.

Academically buoyant pupils have high self-worth, are confident and have positive feelings about themselves. This results in congruence between the self and experience, with full psychological adjustment as a result (Rogers, 1959). They face academic challenges and accept setbacks, accept failure and unhappiness at times and are open with people. They are also well adjusted and are high achievers. Fully functioning pupils are open to new experiences, act independently and are creative. A pupil with low academic buoyancy has low self-worth is an incongruent individual who avoids challenges in life, fails to accept that life can be painful or unhappy at times and thus ends up with low academic self-concept. Ideally this pupil may be malfunctioning. On the other hand, distortions in awareness lead to maladjustments and a multitude of destructive behaviour to oneself and others (Rogers, 1965). They are defensive and not open to peers and teachers. A pupil whose self-concept is incongruent with experiences will use defense mechanisms.
An academically engaged pupil loves what goes on in school and has high academic self-concept. This pupil has most likely experienced unconditional positive regard as well positive self-regard. Significant others accept, respect, love and offer sympathy for what he is regardless of performance. Positive regard is not withdrawn if the child does something wrong. This child feels free to try out new things and even make mistakes and eventually self-actualize. Pupils who receive conditional positive regard get praise or approval only when their performance is consistent with what the teachers believes in. This pupil loses sight of his true worth and abandons the path of self-actualization. He does not achieve full potential in academic life hindering him from becoming a full functioning person. He is plagued with poor academic achievements due to poor academic self-concept, low academic engagement and may eventually dropout of school.

1.10.2. Conceptual Framework

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Outcome/Predictor</th>
<th>Outcomes</th>
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<tbody>
<tr>
<td>Teacher Expectations</td>
<td>Academic Achievement</td>
<td>Academic Engagement</td>
</tr>
<tr>
<td>Academic Buoyancy</td>
<td>Academic Self-concept</td>
<td>Academic Engagement</td>
</tr>
<tr>
<td>I/E frame of reference</td>
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![Diagram: Relationship anticipated](Diagram.png)

*Figure 1.1: Predictors and Outcomes of Academic Self-concept Among Pupils*

Source: Researcher conceptualization 2015.
Figure 1.1 presents the main study variables and the anticipated interrelationship is also shown. Perceptions of teachers’ expectations, academic buoyancy and pupils’ external/internal frame of reference are identified as possible predictors of pupils’ academic self-concept (the outcome variable). Being an *ex post facto* research design it is assumed that by the time the researcher carried out this investigation the predictors had already influenced academic self-concept, the outcome variable.

In turn, academic self-concept is illustrated as a predictor of other possible outcomes namely pupils’ academic achievements and academic engagement. The research design used being an exploratory tool, the researcher intended to determine whether the displayed levels of academic achievement and academic engagement were outcomes of the already existing pupils’ academic self-concept. All these factors constitute the learners external influences and internal cognitive processes that may relate in order for him/her to develop attitudes, feelings and perceptions that determine the pupil’s academic self-concept.

1.11. Operational Definitions of Terms

This section comprises operational definitions of terms. They have been operationalized and applicable to the context of the current study only;

**Academic Achievement**: This was determined by the standardized Z-score obtained at the end of class 7, 2013 and term I and II of the class 8 in 2014 in the 10 sampled schools.
**Academic Buoyancy:** This is the pupils’ capacity to successfully overcome setbacks/challenges of academic life as indicated by a score on Academic Buoyancy Scale.

**Academic Engagement:** Refers to the degree to which pupils are connected to what is going on in their classes encompassing cognitive, behavioural and emotional dimensions determined by academic engagement score on School Engagement Scale and Student Engagement Instrument.

**Academic Self-concept:** Academic self-concepts are mental representations of one’s ability in academic subjects determined by the pupils’ score on a 5-step Academic Self-concept Ladder.

**External Frame of Reference:** This is the pupils’ inclination to compare their academic abilities with the abilities of other students in the immediate school environment measured on Academic Self-Description Questionnaire-II Scale.

**Internal Frame of Reference:** This is the pupils’ tendency to compare their academic ability in one subject with their ability in another subject as indicated by a score on Academic Self-Description Questionnaire-II Scale.

**Non-Formal Schools:** Refers to institutions that resemble formal schools in that they aim at transmitting a formalized curriculum leading to formal school examinations. They however differ in school practices,
management, financing, staffing conditions, registration, operating environment and school structures.

**Outcomes:** These are data collected and analyzed on academic engagement and academic achievement to determine the effect of academic self-concept.

**Perceptions of Teachers’ Expectations:** These are beliefs teachers hold about their pupils and when communicated to the pupils, impact positively or negatively on their behaviour and performance as indicated by a score Perceptions of Teacher Expectation Scale.

**Predictors:** These are data collected on perceptions of teachers’ expectations, academic buoyancy and internal/external frame of reference and utilized to approximate the cause of academic self-concept.
CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1. Introduction
This chapter reviews related literature on perceptions of teachers’ expectations, academic buoyancy and internal/external frame of reference as predictors of academic self-concept. It also reviews pertinent literature that relates academic self-concept to two outcomes namely; academic achievement and pupils’ academic engagement. The chapter finally gives summary of literature review. A detached description of each of these aspects is given in the section.

2.2. Perceptions of Teachers’ Expectations as Predictors of Academic Self-concept
The expectations that teachers hold for their students in terms of capability to learn suggests that these expectations often play a role in students’ achievements (Cooper, 2004). Empirical evidence has explored the teacher expectation phenomenon and its predictive power on students’ self-evaluations. A study by Rubie-Duvies (2007) tracked self-evaluation outcomes of 256 students from 12 different classrooms attending 8 elementary schools in Auckland area of New Zealand. Their teachers held different expectations for them. Early in the academic year the learners filled adapted subscales of the Self-Description Questionnaire-1 (SDQ-1; Marsh, 1990) in perceptions of teacher expectations, Reading, Mathematics, Physical Abilities and Peer Relations. No statistically significant differences between the expectation groups in any of the academic or teacher opinion scales were noted. However, at the end of the academic year
statistically significant differences were found in the academic and teacher opinion areas. This variance was due to the degeneration in the self-concepts of the students with the low-expectation teachers. Although the findings of this study revealed that teachers’ expectations predicted pupils’ academic self-concept, the sample was drawn from a developed country and the study was longitudinal. Given that Kenya is a developing country there was a need to conduct a similar study in order to report on the cross-cultural differences or similarities, if any. The current research was a one day survey where participants took only one hour to respond to the questionnaire.

Another study is by Kuklinski and Weistein (2001) whose sample was drawn from fifth grade. Using Teacher Treatment Inventory they investigated how high and low-performers perceived teacher expectations. The results of their study indicated that low performers felt that teachers were more confident with high performing students, portrayed high expectations and allowed them more choice in their classroom experiences. The study further found out that teachers were more negative towards the low performing learners and tended to direct them more in their learning. In this study the sample was drawn from the lower section in elementary school. There was need to conduct a similar study with more mature primary school pupils, hence the class 8 sample in the current study in order to determine the differences if any.

In a further study, Weinstein (2002) interviewed 133 4th year students to investigate how their teachers perceived their academic ability. The findings reported that students gauged their teachers’ perceptions from the scores attained, from pedagogical procedures and
generally from the warm classroom climate. The learners were able to interpret teachers’ expectations and gave several occasions when teachers communicated supportive or negative criticism. The researcher in the current investigation decided to use self-reports instead of interview and the questionnaire was group-administered to pupils in a single sitting in selected non-formal primary schools in order to report on any similarities.

A study by McKown and Weinstein (2008) yielded two data-sets with 1,872 elementary aged children in 83 classrooms in United States. Studies at Time 1 and Time 2 examined the role of classroom context in moderating the relationship between child ethnicity and teacher expectations and the resultant academic self-concept. Pupils completed the Teacher Treatment Inventory (TTI; Weinstein & Middlestadt, 1979) to measure the level of perceived differential treatment (PDT). In the TTI the children were asked to rate the frequency of their teachers towards a hypothetical high- or low-achieving students. The children were randomly assigned to complete the TTI and the questionnaire was administered in small groups. For Study 1 overall and Study 2 mixed-grade classrooms in ethnically diverse classrooms, students reported high levels of differentiated teacher treatment (PDT) towards high and low achieving students. Teacher expectations of European American and Asian American students were .75 and 1.00 standard deviations higher than teacher expectations of African American and Latino students with similar records of achievement. Regression analysis evaluated the predictive relationship between child ethnicity, the main independent variable and teacher expectations, the dependent variable with prior achievement as a covariate. The results of the findings indicated that child ethnicity was predictive of teacher expectations which in turn resulted
in either low or high academic self-concept. The teachers ranked European American and Asian American a little higher in achievement compared to African American and Latino students with identical records of achievement. There was a need to conduct a similar study in schools in an informal settlement in Kenya to report on how teachers’ differential treatment due to their disadvantaged background affected their academic self-concept. The social inequality may help the government design social and educational policies to promote greater equality and by extension optimal youth development and a healthy society. The sample in the present study was purposively selected and from only one ethnic background and the study was a one day survey where participants completed self-reports questionnaire in approximately one hour.

A study in Ethiopia by Mekonnen (2014), investigated the relationships that exist among teachers’ expectations and other student variables. It also intended to inspect whether there were significant gender differences in the way boys and girls perceived their teacher expectations, motivation, academic self-concept and academic achievement. The sample comprised of 300 students (146 males and 154 females). Perceptions of teachers’ expectations scale with a reliability of 0.79, motivation scale with a reliability of 0.89 and academic self-concept scale with a reliability of 0.83 were administered. Pearson Product Moment correlation coefficient and independent samples t-test were employed to analyse data. The correlation results showed statistically significant relationships among the variables at the 0.05 alpha levels with the exception of the relationship of gender with academic self-concept and motivation and the relationship of motivation and perception of teachers’ expectations with academic achievement of students. The results of
independent t-test also showed that there were significant mean differences in academic achievement and perceptions of teachers’ expectations between the male and female students. Boys achieved higher mean achievement scores, while girls claimed higher levels of teachers’ expectations (i.e. favourable expectations) than boys. But no mean differences in motivation and academic self-concept were observed between male and female students. The sample in this study comprised of secondary school students in grade 9 and 10 in Ethiopia. There was need to conduct a study using pupils in upper primary to find out the whether there was a relationship between perceptions of teachers’ expectation and academic self-concepts in another African country to find out if there are any similarities.

In Kenya, although researchers have not directly investigated the relationship between perceptions of teachers’ expectations and academic self-concept, this relationship can be inferred from a study by Mwema and Matee (2013). Their study sought to find out whether the way the teacher labels students and communicates these labels affects students’ self-concept. The study employed an ex post facto research design. The target population included all the 360 Form 4 students in six public secondary schools in Mwala District, Machakos County. A proportionate random sample of 186 students was selected from the six schools. The teacher labeling in the study was done on a 5-point range likert to assess students’ self-concept using six statements relating to the way teachers responded or commented to the academic performance of the students. The Likert Scale was adopted from Coopersmith (1967). The scale sought to measure students’ level of agreement or disagreement with each statements related to their self-concept. Data was
processed and analyzed using both descriptive and inferential statistics with aid of Statistical Package for Social Sciences (SPSS) version 16.0 for windows. Results indicated that teachers appreciated and encouraged students in their academic work. They recognized their academic abilities and were always available for the students. Pearson correlation was used to test the variables. The results indicated that there was a positive and significant relationship between teacher labeling and self-concept ($r=.493$, $p<0.01$).

The findings show that the kind of teachers’ feedback about academic performance and ability of the students influence their self-concept. The findings of the current study could help teachers to boost the level of self-concept of the students and this may lead to the improvement in academic performance. It could also help the Ministry of Education Science and Technology to see the necessity of training more teacher counsellors to enhance positive self-concept in students. Lastly it may help teachers to focus on positive feedback about academic performance and ability of students in order to encourage them to work hard. Some teachers may be influenced by various student characteristic, for example label students as ‘less able’, use differential practices and behaviour. This kind of teacher bias can have a negative effect on their academic self-concept perceptions, that is, their personal judgment about their capabilities to organize and execute courses of action required to produce desirable educational outcomes (Schunk, Pintrich & Meece, 2008). It is therefore expected that students will live up to their teachers’ ‘expectations, predictions or preconceived notions’ regarding their behaviour and academic performance (Boehlert, 2005).
2.3. Academic Buoyancy as a Predictor of Academic Self-concept

Academic buoyancy is an enabling psychological construct or students’ capacity to successfully overcome setbacks and challenges typical of the ordinary course of everyday academic life (Diperna & Elliott, 2002; Diperna, 2006). Pupils with low academic self-concept are less confident and negative to constructive criticisms. They are not able to express their opinions and have less persistence in accomplishing academic tasks because they view themselves as less competent. These students are daunted by academic setbacks and failure (Martin & Marsh, 2009). If a student is overcome by self-doubt he will have difficulty in performing even the simple academic tasks. Pupils with low academic self-concept are likely to miss class, study less or not at all, misbehave in class, neglect to hand in assignments, perform poorly and eventually disengage from school.

A study by Martin (2012) investigated the role of academic buoyancy and academic outcomes. Specifically the research determined the role of academic buoyancy in academic self-concept, academic achievement and academic engagement of students with attention deficit/hyperactivity disorder (ADHD) and ‘regular’ students residing in the same classrooms and schools. The sample comprised of 87 high school students with ADHD, 3,374 non-ADHD counterparts and 87 randomly drawn non-ADHD. The study employed a survey design which reported a significant and positive correlation between academic buoyancy and academic outcomes. The investigation found out that it was important to support and nurture academic buoyancy among ADHD, non-ADHD students equally. Academic buoyancy was found to explain variance in academic self-
concept, academic achievement and academic engagement. It was necessary to compare these findings with a similar study designed from non-formal primary schools in Kenya.

A follow-up study by Malmberg, Hall and Martin (2013) investigated academic buoyancy in secondary schools in order to explore patterns of convergent in English, Science, Mathematics and Physical Education. They conceptualized past research findings in which students demonstrated their ability to ‘bounce back’ from every day academic setback. They reported results of an exploratory investigation that featured repeated measurement of student self-reported buoyancy across English, Mathematics, Science and Physical Education measures of students’ psychological appraisal. In total, 200 English secondary school students aged between 11-16 years completed self-reported questionnaires. The students were found to hold relatively consistent views about their ability to bounce back from every day academic setbacks, for example, negative feedback, poor results, study stress or pressures compared to the relatively less consistent views they held regarding the difficulty of the four school subjects as well as corresponding personal competences and effort. The current study addressed gaps in buoyancy research to expand understanding in a number of ways. First, it considered academic buoyancy as subject-specific unlike the earlier one which had demarcated buoyancy as a function of both academic (English, Mathematics and Science) and non-academic subjects (Physical Education). Secondly, buoyancy was considered across a broader range of school subjects than previously by including all the subjects covered in the primary school curriculum in Kenya. The present research included such subjects as
Kiswahili, Social Studies and Religious Education. Finally, the study was conducted in a new national context, Kenya, to extend earlier research from England.

Moreover, Martin and Marsh (2008a) conducted a study in five Australian High Schools using 598 students in grades 8th and 10th grades. Data was obtained midway through the year and again at the end of the school year. In the investigation students rated their academic buoyancy and academic self-concept, control academic engagement, anxiety and teacher-student relationship in mathematics as predictors. Findings of multilevel modeling indicated that the bulk of variance in academic buoyancy was elucidated at the student level. Confirmatory factor analysis and structural equation modeling indicated that (a) Time 1 anxiety (negatively), academic self-concept and academic engagement significantly predicted Time 2 academic buoyancy, (b) Time 2 anxiety (negatively) academic self-concept, academic engagement and teacher-student relationship explained variance in Time 2 academic buoyancy over and above that explained by academic buoyancy at Time 1 and (c) of the significant predictors, anxiety explained the bulk of variance in academic buoyancy. Although the findings in this longitudinal study revealed that academic buoyancy predicted, among others, academic self-concept positively, the study sample was based on high school students in Australia. There was need to compare the findings when a self-report survey was done using primary school pupils in Kenya.

Further, another reference is Martin, Ginns, Brackett, Malmmberg and Hall (2013) who based their investigation on hypothesized mutual relations between psychological risk and academic buoyancy. Their research was on how students handle ordinary academic
setback in school life. Academic buoyancy and psychological risk measures were administered to 2,971 students aged between 11 and 19 years from 21 Australian high schools twice in one year. The results established reciprocal effects in which psychological risk impacts academic buoyancy and academic buoyancy impacts psychological risk. The findings implied that teachers are better placed to assist learners deal more efficiently and successfully with adverse school life. There was need to conduct a research to investigate the hypothesized relations between academic buoyancy and academic self-concept in non-formal schools in Ruaraka Division.

In Kenya, no study has been found to have directly investigated the relationship between academic buoyancy and academic self-concept. However this relationship can be inferred from a study by Kabiru, Beguy, Ndegwa, Zulu and Jesoan (2012) on “Making it:” Understanding adolescents’ resilience in two informal settlements (slums) in Nairobi, the study established that teen-agers living in hardship circumstances realize positive educational outcomes. They adopted a protection-risk conceptual framework to examine resilience in form of academic achievement, civic participation and avoidance risk behaviour. The sample composed of 1,722 never-married 12 to 19 year olds in two Kenyan urban slums. They found stronger associations between explanatory factors and resilience among older, the 15 to 19 years old than the younger ones, the 12 to 14 year olds. The study established that pro-social behaviour and antisocial behaviour were the major predictors of resilience. Further more information on risk and protective dynamics is needed to inform intervention and to promote outcomes among youth situated in difficult environments. Given the potential importance and relevance of the construct, the
present study intended to clarify the educational outcomes that academic buoyancy might predict among children who live in abject poverty in the Ruarka slums of Nairobi County and enrolled in non-formal schools.

2.4. Influence of Internal/External Frame of Reference on Academic Self-concept

Pupils tend to use significant others in their school environment as frames of reference as well as their own performance in specific school subjects in forming self-assessment as a basis of academic self-concept formation. Unfavourable self-concepts tend to be correlated to high anxiety levels and promote defensiveness in a child’s reaction to himself and others (Xu, Hau, Monn, Marsh, Ho & Adel, 2013). A school child faced with a negative self-concept, personal happiness and effective functioning is impaired. The child is unable to identify with significant others. A negative self-concept is uncomfortable to live with and so people tend to escape from them. A meta-analysis of 69 data sets (N=125,308) was carried out by Moller, Pohmann, Koller and Marsh (2009) that simultaneously evaluated how mathematics and verbal achievements influenced mathematics and verbal self-concepts. Results revealed that just as predicted by the internal/external frame of reference model, the two school subjects’ achievements were highly correlated overall yielding .67, but the correlation between the self-concepts was .10 which was almost nonexistence. The same research did a path analysis revealing concurrence for internal/external model with positive paths from achievement to the corresponding self-concepts giving .61 for one subject and .49 for the other subject. It is important to note that paths from other school subjects other than verbal and mathematics were not investigated and this was a major objective of the current study.
A study by Xu, Hau, Movin, Marsh, Ho and Adel (2013) sought to extend the internal/external frame of reference model of academic self-concept (Marsh, 1986; Marsh & Hau, 2004; Marsh, Martin & Hau, 2006) in relation to Marsh /Shavelson, (1985). They extended the classic internal/external model by contrasting the mathematics domain with two verbal domains (Chinese, the native language; English, the foreign language) in combination with language of instruction (English or Chinese) for a sample of 1,950 Hong Kong Year 7 students. They investigated the juxtaposition of achievement and academic self-concept in math and native and non-native language for students learning in a native language (Chinese) and a non-native language (English) instruction environment. They psychometrically assessed the measurement invariance of the academic self-concept in Mathematics, English and Chinese. They then evaluated the internal/external model in relation to the use of native and non-native language of instruction. Consistent with the prediction anchored on the Marsh and Shavelson (1985) academic self-concept model and their extension of the internal/external model, they established that the native and foreign languages were not contrasted with each other in the academic self-concept development. However, achievement in both verbal domains negatively predicted mathematics academic self-concept, while math achievement was also negatively predicted by academic self-concept in both verbal domains. Support for the prediction was similar for the students taught in English and Chinese languages of instruction. This finding inspired the current study where the research included the national language used in Kenya, Kiswahili and the other subjects in the primary school curriculum. The researcher intended to compare the findings in a cross-cultural setup.
Brunner, Ludtke and Trautwein (2008) conducted an investigation to revisit the internal/external frame of reference and incorporated general cognitive ability and general academic self-concept. Data was collected from 25,301 9th graders on cognitive abilities and academic self-concept measures. The participants were an expanded, nationally representative sample from 16 German states. A multistage sampling procedure was implemented to ensure highly representative data. Participation rates of 85% and above were achieved in all the states. They investigated alternative measurement models for domain-specific and domain-general cognitive abilities and academic self-concept within an extended internal/external model frame work. Results indicated support for the external validity of a new measurement model for academic self-concepts and the basic predictions of internal/external model were confirmed. The extended global internal/external model allowed significant correlations to be inferred among domain-general ability, domain-general academic self-concept and domain specific elements of the model. The objective of the current investigation was to revisit the internal/external model but on expanded school subject coverage to include all the subjects taught in the Kenyan primary school curriculum.

In a recent study in Taiwan, Chiu (2012) conducted a study with the aim of integrating the internal/external frame of reference model and the big-fish-little pond effect (BFLPE) into a joint model. The justification for the combined model is that the internal/external model actually focuses on internal/dimensional comparison while the BFLPE focuses on the external/social comparison. Multilevel analysis was used on a sample of of 139,174 students in 4,231 schools in 27 countries. The internal/external frame of reference, the
BFLPE and the combined models for mathematics and science were examined. The findings indicated that the internal/external model and the BFLPE fitted data well but there was better fit for data for the combined model from most countries. The current study proposed to use regression analysis model in order to determine whether internal/external frame of reference predicted academic self-concept of pupils in non-formal primary schools.

In Kenya, although researchers have not directly investigated the relationship between internal/external frame of reference and academic self-concept, this relationship can be inferred from a few related studies. Andabwa and Poipoi (2012) explored mathematics attitudes of above average learners in Mukumu Girls High School. Fennema-Sherman Mathematics Attitude (MAS) scale was used to survey mathematics attitude of 200 girls. KCPE and current student marks were contrasted with MAS. The theoretical framework was based on Bandura’s social learning theory which underscores observation and imitation as the means by which the gifted and talented students learn. Results showed that the means of each class varied from the other in each domain: Form two had the highest mean in attitude towards success, form three reflected a high mean in father’s attitude and motivation while form one scored highest in usefulness of the subject. Pearson correlation revealed a high correlation of all the domains with KCPE scores. Teacher classroom scores were used to predict how attitude affects performance in mathematics. The positive correlations showed that there was a significant relationship between the attitude of the student, parent, teachers and mathematics performance. The intellectual ability implies a positive academic self-concept, hence the applicability of the
internal/external frame of reference model. The findings of the study were used as a catalyst for the implication of assisting children to enhance learning.

Muchera, Dixon Hartly and Hardin (2010), examined the relationship between self-concept and students’ academic performance in mathematics and English for high school students in Kenya. The participants were from two same sex boarding schools composing of 1,990 students (983 boys and 1,007 girls). Their ages ranged from 14 to 18 years. Students completed Self-Description Questionnaire III (SDQ-III) developed by Marsh (2000) to measure self-concepts for late adolescents and young adults. The SDQ III assesses domains of academic self-concept, non-academic self-concept and general-self domains. To assess students’ performance they used the report card for second term. This report card had students’ scores across the 12 academic subjects. However Muchera’s et al. (2010) study used only mathematics and English scores. Univariate analysis of variance indicated that boys and girls differed significantly on self-concept scales with an exception of physical appearance with boys rating themselves significantly higher than girls on most self-concept scales. As students graduated to each grade level, their self-perceptions increased. Significant gender differences were found in performance. Girls performed better than boys in mathematics. Performance in English was not significantly different. Grade level differences showed a downward trend in both mathematics and English performance with lower grade levels performing better. The 9th and 10th graders performed better than the 11th and 12th graders both in English and mathematics.
Muchera et al. (2010) in the same study investigated the relationship between students’ actual academic achievement and perceived self-concept. Results showed that the learners’ actual performance in mathematics and English were significantly associated with their self-concepts perception in mathematics and verbal ability but negatively correlated with their perceived verbal ability. Marsh and Hau (2004) investigations across 26 countries found comparable results. The researchers used internal/external frame of reference model to explain this design of relation between mathematics and verbal self-concepts and equivalent measures of achievement. Generally students’ actual performance in mathematics and English was significantly related to their perceived ability in most aspects of the self-concepts. The seemingly paradoxical prediction that high achievement in one subject will have a negative effect in on academic self-concept in a contradicting domain has been limited to the Math domain and verbal domain (the native language) in the Marsh and Shavelson (1985) Model. Therefore, the intention of the present investigation was to extend this empirical and theoretical basis of the established internal/external model based on math and verbal constructs and include subjects taught at primary level namely English, Mathematics, Kiswahili, Science and Social Science/Religious Education.

2.5. Gender Differences in Academic Self-concept and Academic Achievement

A study by Pinxtein, Frain, Damme and D’Haenens (2013) investigated the causal ordering between general academic self-concept and academic achievement from 7th Grade to 12th Grade of secondary school for 2,834 (1,641 girls and 1,193 boys) Flemish adolescents. They used a single cohort of secondary students in Flanders, the Dutch-
speaking part of German. Students rated academic self-concept on a Likert scale from 1 (totally disagree) to 5 (totally agree). The academic self-concept questionnaires were administered on four occasions: at the end of Grade 7 (T1) Grade 8 (T2), Grade 10 (T3) and Grade 12 (T4). Achievement in Dutch and Mathematics were measured by means of curriculum-relevant multiple choice tests. The tests were administered on five occasions: at the start of Grade 7 (T0), end of Grade 7 (T1), end of Grade 8 (T2), Grade 10 (T3) and Grade 12 (T4). Age and gender differences were tested using structural equation modeling. The results supported a moderate reciprocal effects model, indicating that previous achievement had positive effects on subsequent academic achievement. For girls prior academic self-concept had no effect on later academic achievement. Additionally, at the end of secondary school, the study found out that later effect of prior academic achievement led to increased academic self-concept at the end of secondary school. Hence, the results provided limited evidence for hypothesized relationship between academic self-concept and academic achievement. Contrary to the pattern for girls, a small effect of academic self-concept on academic achievement was observed for male students at the beginning of secondary education; a positive academic self-concept was associated with enhanced academic achievement later on. Further, at middle and end of secondary school, they found positive effects of enhancement of male students’ academic self-concept; better academic achievement had positive effects on their academic self-concept. Furthermore, an interesting developmental pattern was observed as students moved through secondary school. Between Grades 7 and 8 the results showed no relation between academic self-concept and academic achievement. Subsequently, between Grades 8 and 10, a self-enhancement model was supported whereas in the final years of
secondary school, a full reciprocal model was found. Finally, small but significant gender differences were observed in the causal relation between academic self-concept and academic achievement. Boys showed a higher level of academic self-concept than girls at the end of Grade 8, 10 and 12. Following a gender stereotypical pattern, boys performed better in mathematics than girls, whereas girls achieved higher scores in Dutch language than boys. It was interesting to investigate gender differences in academic self-concept and academic achievement among primary school pupils in a developing country which was the objective of the current study.

A study by Erten (2009) sought to explain the gender differences in academic achievement among Turkish students. A sample of 84 3rd year students enrolled in a pre-service English Language Teaching (ELT) teacher training department was used. The study collected both qualitative and quantitative data through semi-structured interviews and was content-analyzed for recurring themes. An inter-rater reliability check by two independent raters on a random 15% of the emergent data revealed 91% consistency between the two raters. Group differences were statistically analyzed by utilizing t-test and chi-square. Data showed that male and female trainee teachers had differentiated perceptions of social roles and they are an artifact of these roles, they varied in the quality and quantity of time and effort assigned for their academic studies. The female exhibited a superior performance during the first four semesters of their undergraduate to that of the male students. Girls reported both longer periods of time and efficient metacognitive personality than their male peers. Another significant factor for their observed differences seemed to be the perception of teaching as a career. Female trainee teachers reported
more inherent orientation which seemed to directly influence the participant’s commitment in their academic engagement. These results were based on undergraduate students and used interviews to collect data unlike the present study where participants were primary school pupils and data was collected through a questionnaire.

Lippa (2005) posited that gender differences do not take place in a vacuum but they happen in a social context. Different social and educational contexts may presuppose different gender relations and roles. Considering that most studies on gender differences have been conducted in industrialized countries, one cannot assume the validity of their findings in culturally diverse communities. This warrants the merit of investigating gender differences in different cultural contexts for a deeper understanding of the phenomena and that was the reason why the researcher carried out the current investigation.

Students’ academic behaviour and achievement are known to be associated with their motivation and self-concept (Craven, Marsh & Burnett, 2003; Marsh & Craven 2006; McInerney & Ali, 2006). A study by Yeung (2011) posited that students’ self-concept and effort in school work had a significant influence on essential academic outcomes, though self-concept and effort may decline as students grow up. His research examined the potential differences between boys and girls in primary and secondary schools using a multi-cultural Australian sample of 3rd to 11th graders in Sydney. Participants from 16 schools (N=2,200) rated themselves on academic self-concept and effort in school work. Confirmatory factor analysis and repeated-measures of ANOVA found that: a) for all
variables, scores were lower for higher grader; b) boys were lower in effort; c) for effort, gender differences favouring girls in primary became negligible in higher secondary education and d) differences between primary and secondary tended to be greater for girls. This being a longitudinal study involving comparison between primary and secondary school students in a developed country, there was need to conduct a one day study using only class 8 pupils in non-formal primary schools.

Jesse (2010) carried out an international research between mean country mathematics and science self-concept using data from different countries: respective country achievement and gender as well as age. The results indicated that there was a significant gender difference and it was in favour of males. Further, the findings showed that academic self-concept in those subjects decline as students grow older and academic self-concept decline as they progress through school (Wilkins & Ma, 2003). Males have been found to consistently have higher academic self-concepts than females all through school. The researcher intended to find out whether similar results would be found using only one country and that was the reason for the current study.

A longitudinal study by Defraine, Van and Ongehena (2007) investigated the development of language achievement from grade 7 to grade 12. Latent growth modeling curve showed that boys and girls experience declining academic self-concepts during the period of secondary education, but girls decline at a faster rate. Furthermore, girls showed an increase in Dutch language achievement overtime whereas boys showed a decrease in middle years followed by increase from grade 9 onwards. The researcher therefore,
intended to find out if there was any gender differences in academic self-concept and academic achievement of the children enrolled in non-formal primary schools. It was interesting to investigate these differences in a developing country which was the objective of the current study.

A study by Jansen, Schroeders and Ludtke (2014) demonstrated that academic self-concept is a predictor of academic achievement and other appropriate educational outcomes. They investigated how academic self-concept was linked to achievement and gender differences. Data was analyzed from self-concept measures, grades and standardized achievement tests using structural equation modeling. The sample comprised of 6,036 German 10th graders offering three science subjects- biology, chemistry and physics. Among others the results indicated that; (a) the associations between the self-concept and achievement are substantial and subject specific and (b) female students possess an inferior academic self-concept in chemistry and physics. The aim of the current study was to investigate if there are any gender differences in academic self-concept and academic achievement for pupils enrolled in non-formal primary schools.

Grygiel, Modzelewski, Pisarek and Ur (2016) in a study in Poland investigated relationships between general academic self-concept and achievement for 3rd and 5th graders. Using a longitudinal, two-cycle, 3-year autoregressive cross-lagged design, gender differences were also investigated. The sample comprised of Polish primary school pupils (N=4226). The findings demonstrated; (a) reciprocal relations between
general academic self-concept and achievement; (b) both constructs declined overtime; (c) gender differences were not observed in longitudinal relationships (i.e. cross-lagged, autoregressive and intra-wave correlations); (d) girls demonstrated higher mean levels of academic achievement at both grades; and (e) general academic self-concept was not gender differentiated in grade 3 but decreased more for girls. There was need to find out if there were any gender differences in pupils enrolled in upper primary in Kenya which was the purpose of the current study.

In Kenya, a study by Busolo (2010) investigated gender differences in students’ achievement in secondary school in the Chemistry subject. The research was cross-sectional descriptive survey using correlational methods comprising of 12 stratified selected public secondary schools in Kakamega District. A sample of 386 students responded to a five-item Chemistry Achievement Test (CHAT) comprising of descriptive, mathematical and spatial ability item. The students also responded to the Attitude Scale (AS). The teachers completed the Chemistry Teachers’ Questionnaire (CTQ) on the reasons for poor performance of the students and the possible solutions. The validity and reliability of the instruments were ensured by a pilot study as well as the adoption of some already validated items. A reliability coefficient of at least 0.8 was acceptable for the study. Statistical Package for Social Sciences (SPSS) was used to analyze the Quantitative data obtained from CHAT. The statistics derived included percentages, means, Pearson r, standard deviation, students’ t-test scores and Analysis of Variance (ANOVA) values. To determine the relationship between the students’ attitude and Chemistry achievement, quantitative data obtained from CHAT Pearson Product
Moment for correlation coefficient was used. The findings of the study showed that gender was strongly associated with chemistry achievement \((r=0.98, \alpha > 0.001)\). Boy schools were superior in performance to girl schools. Boys had a stronger affinity and interest towards Chemistry. Teacher and school effects were of little effect on Chemistry achievement with respect to gender. The major recommendation was that measures needed to be taken early in primary education, in order to suppress the socialization factors that lead to gender differences in Chemistry achievement. Strategies should be implemented in the curriculum as well as in the pre and in-service teacher training to help reduce gender differences in students’ achievement in Chemistry. A higher score reported for boys could be because girls are motivated to fail since to them higher performance is equated to loss of femininity by the socializing agents (Wawire, 2010).

In a related study in Kenya, Were, Indoshi and Yalo (2010) investigated gender differences in self-concept and academic achievement among the visually impaired pupils. Stratified random sampling technique was used to draw a sample of 262 respondents (152 males and 110 females). It included 152 in special schools, 82 in integrated programmes and 28 in inclusive programmes. Analysis of Variance (ANOVA) was used to analyze data at \(\leq 0.05\) level of significance. The t-test was used to establish gender differences. The study found out that that there were gender differences in self-concept and academic achievement among visually impaired pupils in Kenya. Females performed better in self-concept as compared to males with a mean of 56.40 (SD=4.64) while the males score was 54.43 (SD=4.51). In academic achievement the females still performed better than the males. The mean achievement for the females was 60.86%
while the male was 57.85%. Since boys exhibited lower self-concepts, the study therefore recommends an early intervention through counseling with the view of helping them to accept their disability.

2.6. Academic Self-concept as a Predictor of Academic Achievement

In a study carried out in Belgium by Pinxten, De’Frein, Van Damme and D’Haenens (2010), academic self-concept, language and mathematics achievement of a sample of 1,753 high school students in 31 schools were examined. The sample consisted of only students in academic track that stayed in the same school from grade 7 to 12 without repeating a grade. They were rated on a Likert scale ranging from 1 (totally disagree) to 5 (totally agree). The academic self-concept was measured at four occasions: at the end of Grade 7 (Time 1), Grade 8 (Time 2), Grade 10 (Time 3) and Grade 12 (Time 4). The language and mathematics achievement was measured by multiple choice tests administered at five occasions at the beginning of Grade 7 (Time 0), end of Grade 7 (Time 1), Grade 8 (Time 2), Grade 10 (Time 3) and Grade 12 (Time 4). The research used structural equation modeling (SEM) method to show the relationship between academic self-concept and academic achievement. Results supported full reciprocal effect model indicating that prior academic self-concept has a significant effect on academic achievement beyond the effects of prior achievement. Further, the findings indicated that prior academic achievement has a significant influence on academic self-concept beyond the effects of prior academic self-concept. All structural cross paths from prior achievement to later academic self-concept and vice versa were statistically significant.
This finding inspired the design of the current study in order to compare the findings with a similar study drawn from Kenya.

In a related study by Guay, Ratelle, Roy and Litalien (2010), the relationship among academic self-concept, autonomous motivation and academic achievement were examined by testing three conceptual models. A total of 925 high school students (404 boys and 521 girls) in the province of Quebec were tested by completing the Perceived Competence Scale to measure academic self-concept on a 7-point scale on two occasions separated by a year. The Academic Motivation Scale (AMS) was used to assess students’ motivation towards school activities. The AMS contained 7 subscales containing four items each. Academic achievement measure was obtained from the official school transcripts for each of the two years. Results from structural equation modeling (SEM) supported the hypothesized model positing that autonomous academic motivation mediates academic self-concept and academic achievement relationship. Correlations indicated that academic self-concept and autonomous academic motivation were moderately related and that academic self-concept appeared to be more strongly correlated with achievement than was autonomous academic motivation. They found that autonomous academic motivation mediated the relationship between academic self-concept and academic achievement such that students who viewed themselves as academically capable scored higher marks. This was due to the fact that their academic self-concept led them to be more autonomously motivated at school. It was interesting to investigate the relationship between academic self-concept and academic achievement among pupils studying in non-formal schools.
A study by Moller and Pohlmann (2010) investigated achievement and self-concept differences to determine the associations for above and below average students in Germany. Two field studies and one experimental study were conducted. The participants in the Study 1 were 1,382 7th to 10th graders (62.2% female) from several academic track German schools aged between 12 and 16 years. In Study 2, the study sample was made up of 1,349 students (49% girls) with a mean age of M=10.07 (SD=0.56) from 60 primary schools. The participants in experimental Study 3 were N= 81 German teacher education students (76.5%) female aged between 18 and 40 years. The findings from the three studies indicated achievement differences between above average and average students were matching to those between average and below average students. However, self-concept variances between above average and average achieving students were greater than those identified between average and below average students. The findings suggested that the good grades teachers assign to above average students are associated with quite positive self-concepts, whereas the poorer grades assigned to below average students are associated with only mildly negative self-concepts. The findings of the study on the relative weights of positive and negative academic achievement feedback are in line with Marsh (2004) who found that the impacts of achievement on academic self-concept was stronger for higher performing students and weaker for lower performers. A combination of self-enhancement motives (for above average students) and self-protection motives (for below average students) may be responsible for these results. The study therefore, concluded that relative to average students, high achieving students tend to enhance their self-concepts whereas low-achieving students tend to protect their self-concepts. The explanation to the positive influence of achievement on self-concept may
be that high achieving students have more accurate perception of their own abilities than low-achieving students. It is important to investigate these reciprocal relationships between academic self-concept and academic achievement of pupils enrolled in non-formal schools.

Bacon (2011) investigated the relationship between academic self-concept and academic achievement in African American students who had experienced geographical mobility. The participants were 6th to 8th grade students in two Iowa County districts comprising of 101 (52.5%) females and 48 (47.5%) males. The age range was 11 to 14 years. The emphasis of the research was to have an insight on how transition from urban to rural school environment influenced their academic self-concept and academic achievement. These middle school/junior high school students had enrolled in Iowa schools for less than 24 months or more than 24 months. Results of the findings showed a significant relationship between academic self-concept and academic achievement. Gender and duration since relocation were not correlated to students’ academic ability or school performance. The findings of the study may assist stakeholders in education with understanding academic self-concept and academic achievement. The current study intended to investigate the relationships between academic self-concept and academic achievement when data is collected from only one class and in a developing country.

In a related study in Ghana, Emmanuel, Adom, Josephine and Solomon (2014) investigated the relationship between achievement motivation, academic self-concept and academic achievement of high school students. The research design was a descriptive
survey. The population was all Senior High school forms one, two and three in Western Region of Ghana. Using stratified random sampling a total of 120 students, 30 from every school, were selected from 4 high schools. Two schools were from an urban area and two were from a rural area. The Inventory of School Motivation (ISM) developed by McInernney and Sinclair (1991) and the Self-Concept Scale by Cambra and Silvester (2003) were administered on the sample to measure their motivation and academic self-concept respectively. Data was analyzed by use of Percentages and Pearson Product Moment Correlation Coefficient. The findings revealed that the bulk of the high school students performed well in Mathematics Achievement Test because they were highly motivated and had high self-concepts. The research established a significant correlation between academic self-concept and academic achievement. Further there was a positive relationship between achievement motivation and academic achievement but the correlation was not significant. The investigation established the importance of achievement motivation and academic self-concept to academic achievement. The study concluded by making intuitive ideas and recommendation to stakeholders in education in assisting students to improve their motivation and self-concept to advance their academic performance. The objective of the current study was to find out if there was a relationship between academic self-concept and academic achievement of class 8 pupils enrolled in non-formal primary schools.

Azibika (2010) investigated the relationship between academic self-concept and academic achievement of delinquent and non-delinquent students in Imo State of Nigeria. A total of 120 subjects comprising of 60 non-delinquent students randomly selected from
two secondary schools and 60 delinquent inmates from Boys Approved Remand Home
for Delinquents in Imo State were used for the study. The 120 students responded to two
research instruments, namely Adolescent Personal Data Inventory (APDI) for self-
concept and Achievement Test Battery (ATB) for academic achievement. Three
hypotheses were formulated and statistically tested. Results of Analysis of Variance
(ANOVA) and Sheffe’s multiple comparison testing indicated that there was a significant
difference in academic achievement and self-concepts between delinquent and non-
delinquent students. The study recommended provision of counsellors to learning
institutions for enhancement of self-concepts of their students which is the basis of
improved academic achievements. Since these results were based on a comparison
between delinquents and non-delinquent students, it was important to determine the
relationship between academic self-concept and academic achievement of “normal
pupils” but living in informal slum environments.

2.7. Pupils’ Academic Self-concept as a Predictor of Academic Engagement
Pupils’ academic engagement is the degree to which pupils are connected to what is
going on in their classes and contribute to academic performance (Fredricks, Blumenfield
& Paris, 2004). It is the extent to which pupils are interested in, committed and curious
about what they are learning (Simon-Morton & Chen, 2009). Academic engagement is a
multidimensional construct encompassing behavioural, psychological/cognitive and
affective components (Christen, Reschley & Wylie, 2012). Pupils’ academic engagement
is the centripetal experience of bonding the student to the school. Academically engaged
pupils exhibit a set of behaviours that support achievement including persistence, regular
attendance and sustained attention (James, Sandra & Michael, 2008). Academic engagement behaviours result in students who are psychologically connected with the school and it predicts and prevents dropouts as well as facilitating positive educational outcomes. Academic engagement is seen as an antidote of low achievement, high levels of student boredom, disaffection and high dropout rates.

A study by Green, Liem, Martin, Colmer, Marsh and McLnerney (2012) tested three theoretically/conceptually hypothesized longitudinal models of academic process linking academic self-concept and motivation leading to such outcomes as performance and engagement. Based on a longitudinal sample of 1,866 (728 girls and 1,138 boys) high school students from six Australian schools completed instrumentation at T1 (3rd term of school year) and T2 (one year later) from grade 7 to 12. Their mean age was 13.86 years (SD=1.28) at T1 and 14.79years (SD=1.28) at T2. The class teachers administered the questionnaire in a normally scheduled class. The investigation adopted a self-system model (Skinner, 2009) positing relations between contexts, self, engagement/disaffection and performance. The study conceptualized “self” through academic self-concept, engagement through affective dimension, that is, positive attitudes towards school and outcome through test performance. The behavioural component was assessed through class participation, homework completion and absenteeism. Data analysis involved confirmatory factor analysis (CFA) and structural equation modelling (SEM). The results indicated that all the factors predicted were significantly correlated. All the hypothesized paths were significant in the predicted directions (positively and negatively). The results also indicated congruence of predictive paths across the two time waves, demonstrating
the stability of the hypothesized model over time. However these results were based on high school students and therefore there was need to investigate whether academic engagement self-concept predicted academic among primary school pupils.

Areepattamanni (2011) carried out a sequential explanatory mixed methods research investigation on Indian adolescents in Canada and India on academic self-concept, academic motivation, academic engagement and academic achievement and academic achievement. Surveys were administered to 355 high school students in Canada and 363 in India. Four focus group interviews in Canada and four in India were conducted to garner the perceptions and opinions of the participants. Descriptive discriminant analysis (DDA) showed that the Indian immigrants’ adolescent in Canada did not differ significantly from their peers in India. English, overall GPA and verbal self-concept were correlated with group separation in DDA when non-standardized GPA scores were used. However, when standardized GPA scores were used, verbal self-concepts alone were associated with group separation in DDA. Focus group discussions determined that the Indian immigrants and Indian adolescents were extrinsically motivated towards school and academics. The current study was conducted in a developing country and the researcher used a group administered questionnaire to collect data.

In a related study Stoebber, Childs, Hayward and Feast (2011) investigated harmonious relationship and students’ obsessive passion for studying as well as academic engagement (vigour, dedication and absorption) and burnout (exhaustion, cynicism and inefficacy). The sample comprised of 105 university students (12 males and 93 females) controlling
for the effects of autonomous and controlled motivation. Mean age of the participants was 20.0 years (SD=2.4, range, 18-37). All students were 2nd year undergraduates registered in psychology programme in the University of Kent, Canterbury, United Kingdom. Both harmonious and obsessive passion elucidated variance in academic engagement and burnout. Harmonious passion predicted higher dedication and lower cynicism, obsessive passion predicted higher absorption and both harmonious and obsessive passion predicted higher vigour and lower inefficacy. The results of the findings advocate that passion for studying explains individual differences in students’ academic engagement and burnout beyond autonomous and controlled motivation and thus merits more attention from educational psychologists. However, there was need to carry out a study using a primary school sample to find out the similarities or differences with the results of the university sample.

Starnard, Belgrave, Corneilie, Wilson and Owens (2010) argued that whereas marks are frequently used as indicators of academic achievement, they provide little information about the process that inspires academic success. Academic engagement, on the other hand, gauges judgments, motivation and behaviours that predict achievement and helps elucidate achievement mechanisms. Understanding academic engagement can facilitate an examination of the factors impelling and hampering achievement and can guide investigators and educators in developing and appraising effective mediations for promoting academic success. The participants were 311 (184 females and 127 males) Black/ Africa American students from Virginia, United States of America. Grounded in Bronfenbrenners (1979; Wachs, 2000) ecological theory, the study attempted to
investigate the impact of family cohesion and risky peer behaviour on academic engagement. The results of the findings from the hierarchical linear regression indicated that socializing with peers who engaged in risky behaviours had a significant impact on academic engagement. Family cohesion was also significantly correlated with academic engagement over and beyond the effects of risky peers. It was thought-provoking to design the current study in order to investigate and report the predictive weight of academic self-concept on academic engagement among the disadvantaged pupils from a slum background.

In Kenya, no study has been found to have directly investigated the relationship between academic self-concept and academic engagement. However, this relationship can be inferred from a few related studies. A study by Kwena (2007) investigated the influence of truancy and class retention on academic self-concept of primary school pupils. Academic self-concept of pupils as influenced by absenteeism, class retention, academic achievement and teacher ratings was studied. It was a survey study that employed an ex post facto design and was conducted in Bondo District of Nyanza Province, Kenya. Stratified sampling was used to come up with five schools. All the pupils in classes 2-4 and 6-8 participated in the study. The sample included 5 head teachers, 29 teachers, 972 pupils (497 male and 475 female). The pupils mean age was 11-19 years with a range of 6-20 years. SPSS was used to analyse quantitative data. All hypotheses were tested at p<0.05 level of significance. The findings revealed that pupils had a high academic self-concept in the subjects tested. Significantly higher academic self-concept were found for pupils in lower classes. Class by class analysis indicated that girls had higher academic
self-concept than boys in lower classes. However, this changed as they progressed to the upper classes. The stereotypical pattern was displayed with girls still maintaining higher academic self-concept in languages and boys leading in maths and science. Academic self-concept was found to be positively related to teacher ratings and negatively correlated to absenteeism and class retention. A significant positive relationship academic self-concept and academic achievement was observed only in class 8. In a multiple correlation analysis to find out which of the variables would be fitted into a model to predict academic self-concept, academic engagement emerged as the best positive predictor of academic self-concept at class 7. Absenteeism was negatively correlated to academic self-concept (P<0.05). The intention of the current study was to establish whether pupils’ academic engagement was an outcome of academic self-concept of pupils enrolled in non-formal schools.

2.8. Summary of Reviewed Literature

Evidence from the studies reviewed have shown that majority of the studies done on perceptions of teachers’ expectations, academic buoyancy, internal/external frame of reference, academic self-concept, academic achievement and academic engagement were done in developed countries. More so many of these studies were done among high school, college and university students and some combined elementary and junior high school. All these learning institutions offered formal and structured education. Furthermore, the findings reported on the relationship between predictor variables (perceptions of teachers’ expectations, academic buoyancy and internal/external frame of reference) and outcome variables (academic self-concept, academic achievement and
academic engagement) have been contradicting and inconclusive. Therefore, there was need for a study to be conducted in non-formal primary schools in Kenya which offer learning services outside the framework of the formal school system in the slums. The current study was aimed at contributing to the understanding the importance of these three independent variables in predicting academic self-concept. So then, the study aimed at extending the knowledge on how academic achievement and academic engagement are outcomes of academic self-concept.
CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

This chapter presents a description of research methodology. Specifically it deals with the research design, research variables, location of the study, population, sampling techniques and sample size determination. The chapter also describes research instruments, their validity and reliability determination, actual data collection, data analysis and finally logistical and ethical considerations.

3.2. Research Design

The study employed an *ex-post facto* research design. An *ex-post facto* design observes an existing condition and searches back for causal factors. The factors are studied after they have exerted their effect on another variable. According to Ary, Jacobs, Razavieh and Sovensen (2009), *ex-post facto* research is conducted after variation in the variable of interest has already been determined in the natural course of events. *Ex-post facto* design is useful when investigating cause-effect relationship between predictor and outcome variable in instances which do not permit randomization and manipulation of variables. In the current investigation, perceptions of teachers’ expectations, academic buoyancy and internal/external frame of reference (the predictors) exerted their influence on the pupils’ academic self-concept (the outcome). Consequently, academic self-concept (the predictor) influenced academic achievement and pupils’ academic engagement (the
outcomes). Therefore the, *ex post facto* design was considered suitable for this study because it was not possible for the researcher to manipulate the independent variables.

There are two kinds of designs in *ex post facto* research according to Cohen, Lawrence and Keith (2003). They comprise; the correlational research which was adopted in this research and the criterion group study. The correlation study encompasses collection of two sets of data one which will be retrospective with a view of determining the relationship between them. If there is a relationship then predictions can be made about one from the other as well as the strength and direction of that relationship. The researcher makes no effort to control extraneous variables. The basic design of such a correlation may be represented as;

\[
\begin{array}{c|c}
X & O \\
\hline
\text{Independent Variable} & \text{Dependent Variable} \\
\end{array}
\]

Mutewleli (2014) noted that when a relationship is found between the two variables, there is are three possibilities;

(i) That variable X has caused O

(ii) That variable O has caused X; or

(iii) Some third unidentified and therefore unmeasured variable has caused X and O.

This is normally referred to as the third variable problem.

According to Mutweleli (2014) the third variable problem presents a major weakness in *ex post facto* research design. Kerlinger (1964) posits that it is impossible to isolate and
control every possible variable or know with outright conviction which is the most critical variable. However, this design has a key advantage in that it meets an important need of the researcher where the experimental approach is impossible. Cohen et al., (2003) posit that *ex post facto* research design is an indispensable exploratory tool when possible cause-effect associations are being explored as it was the case in the present study.

### 3.2.1. Research Variables

In this study the predictor variables are perceptions of teachers’ expectations, academic buoyancy and pupils’ internal/external frame of reference. These antecedent constructs were proposed to predict the pupils’ academic self-concept as an outcome variable. As illustrated in the conceptual framework, in turn academic self-concept was proposed to predict academic outcomes in the form of academic achievement and pupils’ academic engagement. Apart from academic achievement, these variables were measured at interval scale level of measurement.

The main outcome variable was pupils’ academic self-concept and was measured at interval level using academic ability ladders. The other outcome variable was academic achievement which was measured at ordinal scale in terms of total scores obtained from school records for examinations done at the end of school term in class 7 Term I, II and III and in class 8 Terms I and II. To make the scores comparable among schools, they were transformed to standard Z-scores. Gender of the participants was treated as a categorical variable measured at nominal level.
3.3. Locale of the Study

The location of the study was Ruaraka slums in Ruaraka Division of Kasarani District in Nairobi County. Statistics from the District Education Officer (DEO), Kasarani District revealed that there were 155 primary schools in the District that had pupils up to class 8. Of these primary schools, 25 were public, 55 were private and 75 are non-formal schools. The fact that the bulk of the schools were in the non-formal category was one of the reasons that prompted this study. The choice of the location was also informed by the performance of the schools at the national examination. According to the 2014 KCPE analysis, out of the maximum 500 marks, Kasarani District mean score was 280.30 which may be considered as an average performance by the stakeholders in education. When the districts mean score is broken down into school categories, the mean score for the private schools was 311.64, non-formal schools was 266.70 and public schools was 234.89 as shown in Table 3.1. With such an average district mean score it means not many pupils join the national or prestigious county secondary schools due to the poor performance in the KCPE.

Table 3.1

*Ruaraka Division, Kasarani District KCPE Analysis, 2014*

<table>
<thead>
<tr>
<th>Marks</th>
<th>350-500</th>
<th>300-349</th>
<th>250-299</th>
<th>200-249</th>
<th>150-199</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schs</td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>Private</td>
<td>365</td>
<td>29.53</td>
<td>392</td>
<td>31.72</td>
<td>452</td>
<td>36.57</td>
</tr>
<tr>
<td>NFSs</td>
<td>103</td>
<td>3.80</td>
<td>426</td>
<td>15.74</td>
<td>797</td>
<td>29.45</td>
</tr>
<tr>
<td>Public</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1212</td>
<td>30.66</td>
</tr>
</tbody>
</table>

Note: Schs- Schools, NFSs- Non-formal schools, % - Percentage

KCPE Analysis, 2014. Source, District Education Officer, Kasarani District
The KCPE analysis revealed that the Non-Formal Schools presented about one third, that is 2,706 (34.28%) of the total pupils in the district for the national examination (see Appendix I). The performance of these schools was 266.70 which was below the district mean score of 280.30 but slightly above the national mean score of 241.00. About half of the pupils, that is 1,427 (52.73%) scored below 250 marks which is the KCPE pass mark. The high percentage of pupils obtaining low marks necessitated the choice of the location of this study considering the fact that some of the Non-Formal Schools are partially funded by the government in an effort to achieve Universal Primary Education (UPE) by 2015. This study helped gain some insight and understanding of some of the possible psychological factors related to academic self-concept and hence academic achievement that have not been put into focus yet very crucial for children learning in non-formal schools.

3.4. Target Population

The target population to which the researcher wanted to generalize the study findings was composed of all the class eight pupils of year 2014 enrolled in the non-formal primary schools in Nairobi County. The choice of the non-formal primary schools was based on the fact that they had presented class 8 candidates for KCPE in the past two years, 2013 and 2014. This was a major criterion for inclusion in the study. These non-formal primary schools had many pupils enrolled in class 8 which helped in meeting the required sample size. Class 8 was preferred because by the time of the study they had been in the school for eight years. Since they were to sit for KCPE at the end of the year they were expected to be more serious about their performance and this must have influenced their academic
self-concept positively. Green et al. (2012) states that academic self-concept is a psychological construct considered to be a key outcome in education.

Since it was impractical to select a sample from the target population, the researcher settled for the manageable accessible population which in itself was representative of the target population. The accessible population was class 8 pupils from 69 non-formal schools in Ruaraka Division of which 35 were government funded and 34 were non-funded. The estimated class eight population was 1,715 pupils of which 886 were boys and 829 were girls (Ministry of Education, Science and Technology, Non-Formal Education Unit, 2012). The accessible population is represented in Table 3.2

Table 3.2

*Accessible Population; Sampling Frame*

<table>
<thead>
<tr>
<th>Type of school</th>
<th>Population</th>
<th>Total pupils</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Schools</td>
<td>Students</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Boys</td>
</tr>
<tr>
<td>Non-Funded</td>
<td>35</td>
<td>646</td>
</tr>
<tr>
<td>Funded</td>
<td>34</td>
<td>240</td>
</tr>
<tr>
<td>Total</td>
<td>69</td>
<td>886</td>
</tr>
</tbody>
</table>

Source: County Director of Education Office, Nairobi, 2014
3.5. **Sampling Technique and Sample Size Determination**

3.5.1. **Sampling Techniques**

Three types of sampling procedures were used; purposive sampling, stratified random sampling and systematic random sampling. Purposive sampling was used to select the schools and class 8 pupils. The purposively selected schools were further subjected to stratified random sampling. The non-formal primary schools in Kasarani District can only be stratified into two subgroups; Government of Kenya (GoK) funded and non-funded schools. There were 35 funded schools and 34 were non-funded.

Using systematic sampling, every \( k^{th} \) school was selected for the sample after determining a random start. The researcher intended to use 5 schools in each stratum. Using a list of 35 funded schools in the sampling frame the researcher divided 35 by 5 and therefore selected every 7\(^{th}\) school. With a list of 34 non-funded schools, the researcher divided 34 by 5 thus selecting every 6\(^{th}\) school yielding a total of 10 schools for the school sample. All the class 8 pupils in the 10 schools were included in the sample. The class 8 pupils were given code numbers guided by their school registration numbers. This was necessary because the respondents were to remain anonymous; hence they wrote the code numbers on the questionnaire. The code number was also used to get the participants academic achievement from the school records.

3.5.2. **Sample Size Determination Criteria**

In order to determine the study sample population size, three criteria were considered: first, the level of precision, sometimes called the sampling error, the margin of error or
the confidence interval, secondly, the level of confidence or risk and thirdly, the degree of variability. These criteria needed to be specified in the attributes being measured (Miaoulis & Michener, 1976).

The level of precision, expressed as +/- 5, was the range in which the true value of the population was estimated to be. It was the amount of error the researcher could tolerate. It determined how higher (+5%) or how lower (-5%) than the population mean the researcher was willing to let the sample fall. The second criterion was the confidence level which was the risk level of 95%. It was the amount of uncertainty the researcher could tolerate, how sure the researcher was or how confident the investigator wanted the actual population mean to fall. The third criterion in determining the sample size was the degree of variability in the attributes being measured in the current study. It was the distribution of the attributes in the target population. The researcher expected a variance of 50% or .5% which is the maximum variability in a population

3.5.3. Actual Sample Size

The actual sample size was based on the accessible population which was representative of the target population. There were 1,715 class eight pupils in Ruaraka Division. The researcher obtained a representative sample from the 10 schools totaling to 367 (21%) respondents of which 176 (48%) were boys and 191 (52%) were girls as respondents. The actual sample size of the schools and pupils is presented in Table 3.3
Table 3.3

Sample Size

<table>
<thead>
<tr>
<th>Category of NFSs</th>
<th>NFSs</th>
<th>Pupils</th>
<th>Total pupils</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td>Funded</td>
<td>5</td>
<td>79</td>
<td>79</td>
</tr>
<tr>
<td>Non-Funded</td>
<td>5</td>
<td>97</td>
<td>112</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>176</td>
<td>191</td>
</tr>
<tr>
<td>Percentage</td>
<td>14%</td>
<td>48%</td>
<td>52%</td>
</tr>
</tbody>
</table>

Note: NFSs- Non-formal schools

Source; County Director of Education Office, Nairobi, 2014

Data in Table 3.3 shows that the sample size was approximately 14% for the schools and 21% for the pupils. According to Gorard (2001), a sample size of between 10 and 20 percent is considered appropriate.

3.6. Research instruments

Two types of research instruments were employed in this study, namely pupils’ questionnaire and mark sheets.

3.6.1. Pupils’ Questionnaire

The pupils’ questionnaire (Appendix C) was the main data collection instrument for this study. The questionnaire was chosen because a large amount of information can be collected from a large number of participants in a short period and in a cost-effective
way. It can also be analyzed more scientifically and more objectively. A questionnaire can be administered with limited affect to validity and reliability.

The pupils’ questionnaire was divided into five parts. Part I consisted of the participants’ bio data (gender and age), school characteristics (government funded or non-funded) and the school name. Part II sought information on participants’ perception of teachers’ expectations. Part III sought academic buoyancy behaviour, part IV was internal/external frame of reference and part V was pupils’ academic engagement items. Each variable comprised of 10 items. The researcher expected the questionnaire to take approximately one hour to fill.

**Scoring Responses**

The lowest score for each variable was 10 (1.00) and the highest possible score was 50 (5.00). Therefore the average score for each variable was calculated for each pupil and the mean scores ranged from one (1.00) to five (5.00). These single measures were correlated with the pupils’ academic self-concept during the analysis. The participants’ scores were used to categorize the respondents having low, average and high levels of the study variables. The cut-off scores of the category of low was 10 to 30 (1.0 to 3.0), average was 31 to 40 (3.1 to 4.0) and high was 41 to 50 (4.1 to 5.0). A high score indicated pupils in the behavior being measured. The data collected is summarized in Table 3.4
Table 3.4

**Summary of Pupils’ Questionnaire**

<table>
<thead>
<tr>
<th>Item</th>
<th>Variable measured</th>
<th>Min</th>
<th>Max</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part I</td>
<td>Demographic data</td>
<td>0</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part II</td>
<td>Perceptions of Teachers’ Expectations</td>
<td>10</td>
<td>50</td>
<td>1.0-3.0</td>
<td>3.1-4.0</td>
<td>4.1-5.0</td>
</tr>
<tr>
<td>Part III</td>
<td>Academic buoyancy</td>
<td>10</td>
<td>50</td>
<td>1.0-3.0</td>
<td>3.1-4.0</td>
<td>4.1-5.0</td>
</tr>
<tr>
<td>Part IV</td>
<td>I/E frame of reference</td>
<td>10</td>
<td>50</td>
<td>1.0-3.0</td>
<td>3.1-4.0</td>
<td>4.1-5.0</td>
</tr>
<tr>
<td>Part V</td>
<td>Academic engagement</td>
<td>10</td>
<td>50</td>
<td>1.0-3.9</td>
<td>3.1-4.0</td>
<td>4.1-5.0</td>
</tr>
</tbody>
</table>

Source; Researcher conceptualization, 2015

A more detailed description of the questionnaire is given next.

**a. Perceptions of Teachers’ Expectations**

Perceptions of teachers’ expectations score of the participants was measured using Perceptions of Teachers’ Expectations Scale developed by Good (1981) and Oaks (1985) and modified by Kususanto, Ismail & Jamil (2010). The instrument has two parts; *the teacher controlling and the teacher supportive behavior* which is a 4-point scale with 20 items. The students response scale ranges from 1= *strongly disagree* to 4= *strongly agree.* Reliability of the items assessing teachers’ acceptance was found equal to .67. The scale had excellent reliability and concurrent validity when administered by Metherny, McWhirter and O’Nei (2008). Three grade levels were used in a cross-sectional study.
representing grades 7 through 9 in Athens, Greece. The researcher adapted the teacher supportive subscale construct which has 10 items but rated it on a 5-point Likert scale ranging from 1=never to 5=always (see Appendix C). The scale was considered suitable for the present study owing to its high validity and reliability measures when used with students in Athens, Greece with comparable characteristics in Kenyan non-formal primary school pupils in terms of age and level of schooling.

b. Academic Buoyancy

The academic buoyancy questionnaire was adapted from the Academic Buoyancy Scale (ABS: Martin & Marsh, 2008) which has responses anchored on a 7-point scale and the responses range from 1= strongly disagree to 7= strongly agree. The ABS (Martin & Marsh, 2008) comprises of 4 items stating “I am good at dealing with school stresses”, “I don’t let study get on top of me”, “I think am good at dealing with school pressures” and “I don’t let a bad mark affect my confidence”. The ABS has a Cronbach’s alpha reliability of .79 and was found to have convergent validity. The scale was considered suitable for the present study owing to its reported high validity and reliability measures as reported by Reisy, Dehghani, Alui, Moslem and Parisa (2014). For the purpose of the current study, the researcher modified scale had 10 items describing how pupils dealt with academic life setbacks and challenges (see Appendix C). The items were rated on a 5-point likert scale ranging from 1= strongly disagree to 5= strongly agree. At the pretesting stage of the ABS the data obtained yielded measures of internal consistency (reliability coefficient) given in Table 3.5
c. Internal/External Frame of Reference

To measure pupils’ internal/external frame of reference the researcher adapted Academic Self-Description Questionnaire II (ASDQ-II; Marsh, 1992) which has items scored on 6-point response categories of false=1, mostly false=2, more false than true=3, more true than false=4, mostly true=5 to true=6. The short version of ASDQ-II had a reliability of .89 and supported good content and construct validity as proposed by Smith, McCally and Anderson (2000). The psychometric properties of SDQ-II were assessed with middle school sample comprising 291 students in U.S.A. who are comparable in age to the sample in the current study. Results revealed acceptable internal and four-week stability coefficients for all domains and that was the reason why the scale was considered suitable for the present study.

The item from the ASDQ-II stating “Compared to others my age I am good in English” was modified to read “Compared with my friends and classmates I am good in English.” Using this format, 5 items were generated to measure ability in the 5 academic subjects taught in Kenyan primary schools operationalized in this study as external frame of reference. To measure pupils’ internal frame of reference the researcher borrowed three items from the ASDQ-II. These were; “I am satisfied with how well I learn Mathematics,” “Work in Mathematic is easy for me” and “I learn things quickly in Mathematics.” These three items were collapsed to come up with one item “My ability to learn Mathematics is better than the other academic subjects.” Using this format, 5 items were generated to measure ability in the 5 academic subjects taught in primary schools.
The items were rated on a modified 5 point scale ranging from $1=\text{false}$ to $5=\text{true}$ (see Appendix C). The $\textit{more false than true}$ point on the ASDQ-II scale was omitted.

d. Academic Engagement

To measure academic engagement the researcher adapted School Engagement Scale (SES-MacArthur) by Friedricks, Blumenfield, Friedel and Parish, (2005) as well as Students Engagement Instrument (SEI) by Appleton, Christenson, Kim and Reschly, (2006). The construct validity and reliability of the engagement scales was determined using middle school adolescent students in Turkey who are comparable in age to the participants in the present study. The tool was clustered into three factors of engagement; emotional, behavioural and cognitive. The School Engagement Scale has 5-step response measure of $1=\text{never}$, $2=\text{on occasion}$, $3=\text{sometimes}$, $4=\text{most of the time}$ to $5=\text{all the time}$. Validity yielded correlations of $0.51(p<0.001)$. Cronbach’s alpha reliability was $0.85$. These two scales had several subscales so the researcher picked only those describing a set of behaviours indicating the degree to which pupils were connected to what was going on in the classrooms predicting enjoyment in school and preventing absenteeism and dropout. The 10 items were rated on a 5 point Likert scale ranging from $1=\text{not true at all}$ to $5=\text{very true}$ (see appendix C).

e. Rating Scales

Academic ability ladders (Appendix D) were used to measure the pupils’ academic self-concept in each of the main academic subjects, that is, Mathematics, English, Kiswahili, Social Studies/Religious Education and Science. The ten-step academic ability ladders
developed and validated by Kilpatrick and Kantril (1960) were modified by the researcher to a 5-step ability ladder. The ten-step ladders have been successfully used in Kenya before by Maritim (1979) and Muasya (1989). However, Ngesa (2002) and Kwena (2007) used a seven-step self-concept measure. The pilot study indicated that the five step academic ability ladder was quite stable during the split-half reliability process.

![5-Step Ability Ladder](image)

**Figure 3.1 – The 5-step Ability Ladder**

Source; Modified from 10-step ability ladder by Kilpatrick and Kantril (1960).

When analyzing the results on the ladders the following codes were used;

Step 5: High academic self-concept

Steps 2, 3 and 4: Average academic self-concept

Step 1: Low academic self-concept.

The average academic self-concept rating was calculated for each pupil from the self-ratings in the five school subject areas. This gave an overall single measure of academic self-concept (ASC) for each pupil that was used in the analysis.
School Mark Sheets

Academic achievement of the participants was obtained from school achievement records and recorded in the pro-forma table designed specifically for this purpose (see appendix E). This involved reviewing and analyzing school performance records retrospectively for two years to establish academic achievement. The aggregate score in the five subjects for all the participants in class 7 year 2013 for Terms I, II and III and class 8 year 2014 Terms I and II was obtained. To render the scores comparable among schools, they were transformed to standard Z-scores. The Z-score values of 1.50 to 3.00 were considered as high levels of academic achievement, whereas Z-score values of between 1.00 and -5.0 were considered average and Z-score values of -1.00 and -2.50 were considered low levels of academic achievement.

3.6.2. Plot Study

Using information and suggestions from the pilot study, the items that were found to confuse the participants, ambiguous, offensive or not eliciting the data the study expected were modified. The pilot study was also to help estimate the time duration needed for testing. The exercise also helped to improve the data collection procedures. The questionnaire was pre-tested to a sample of 30 students in two non-formal schools. The selected sample was similar to the actual sample that was used in the study. The schools were also comparable to the sample schools. Similar procedures to those for the study were used. The purpose of the pilot study was to test and enhance validity and reliability of the questionnaire and the academic self-concept instruments. The schools used for piloting were excluded from the actual study.
3.6.3. **Validity of Research Instruments**

To establish content validity, the researcher sought expert judgment from the two supervisors. In addition, experts in psychology reviewed the items of the instruments to establish their accuracy in capturing the concepts under study. This was done by holding discussions, obtaining relevant comments and suggestions that were synchronized. Comments during the departmental seminar and defense were also incorporated. Content validity was also ensured through peer review whereby only relevant items were included. The researcher then revised the items and worded them appropriately so that they provided the required response.

3.6.4. **Reliability of Research Instruments**

The researcher used the internal consistency technique to access reliability. Internal consistency is the stability of instruments on measuring over time. This involved administering the instruments in a single sitting to the 30 pupils during piloting. Given that the reliability coefficients in the pupils’ questionnaire were obtained using samples in developed countries, the pilot study was used to determine the internal consistency of the current sample and location in a developing country. Then the researcher used Cronbach Coefficient Alpha to assess how the items correlated among themselves. The use of Cronbach Alpha formula (K-R20) in assessing internal consistency of an instrument was based on split-half reliability of data from all possible halves of an instrument. The researcher used the items with odd numbers from one half and the even numbers to form the other half. The Alpha coefficient of one half highly correlated with the coefficient of
the second half making the questionnaire to have a good split-half reliability and so was considered reliable. The following formula was used:

\[ K-R20 = \frac{(K)(S2 - \sum s.2)}{S2(K-1)} \]

Where

- \( K-R20 \) = Reliability Coefficient of internal consistency
- \( K \) = Number of items used to measure the concept
- \( \sum \) = Summation
- \( S2 \) = Variance of all the scores
- \( s.2 \) = Variance of individual items

The data obtained at the pre-testing stage yielded measures of internal consistency (reliability coefficient), more specifically Cronbach Alpha, are given in Table 3.5

### Table 3.5

*Cronbach Alpha reliabilities of the Study Variables*

<table>
<thead>
<tr>
<th>Serial Number</th>
<th>Variable measured</th>
<th>Number of items</th>
<th>Cronbach Alpha (from pilot study)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perception of Teachers’ expectations</td>
<td>10</td>
<td>0.76</td>
</tr>
<tr>
<td>2</td>
<td>Academic buoyancy</td>
<td>10</td>
<td>0.74</td>
</tr>
<tr>
<td>3</td>
<td>I/E frame of reference</td>
<td>10</td>
<td>0.80</td>
</tr>
<tr>
<td>4</td>
<td>Academic engagement</td>
<td>10</td>
<td>0.83</td>
</tr>
<tr>
<td></td>
<td>Pupils’ questionnaire (Overall)</td>
<td>40</td>
<td>0.78</td>
</tr>
</tbody>
</table>
The four study variables illustrated in Table 3.5 show good reliabilities. These reliability coefficients were considered to be high enough to warrant use of the pupils’ questionnaire in a local setting. In application of K-R20 formula, a high coefficient (above 0.75) implied that the items correlate highly among themselves.

3.7 Actual Data Collection

On the agreed time and date the pupils’ questionnaires were administered to the children using a read-aloud group administration method by the researcher assisted by the class teachers and the researcher assistants during normal class hours. The participants were given instructions on the completion of the questionnaire and the academic self-concept ability ladders and encouraged not to leave any blank. The researcher read one item at a time and gave the participants time to respond before moving to the next item. If one got stuck they were to leave that response blank and move along with the rest of the group. Such participants were allowed time to go back at the end of the session and respond to those items they left blank. This method ensured a high return rate of the filled questionnaire. It took the participants approximately one hour to complete responding to the instruments. The class 8 teachers were requested to provide academic achievement records for the period the participants were in class 7 for Term I, II and III in year 2013 and class 8 Term I and II in year 2014.

3.8. Data Analysis

Quantitative data was collected from the research instruments. Items of the questionnaire were scored based on each objective and coded. Data was then entered into the Statistical Package for Social Sciences (SPSS) computer programme. Data cleaning was done in
order to ensure that there were no outliers or improper entries which may contaminate the results. Summary scores were computed for every sub-section of the questionnaire as per objective. Descriptive statistics such as means, percentages, standard deviation, skewness and kurtosis were used to describe the sample characteristics, to present the results in tables, percentages and figures. This is because descriptive statistics have a considerable advantage over more complex statistics (Fink, 2005). Relevant inferential statistical procedures were used to test each of the null hypotheses. Simple Regression analysis measured the strength of the relationship between predictor and outcome variables. Additionally t-test for independent samples was used to test mean differences of two independent groups (boys and girls). In addition, the researcher did a multiple regression analysis to determine the significant predictors of academic self-concept and academic achievement. The level of significance used the null hypotheses in this study was 0.05, which is the level deemed acceptable for social science research (Best, 1991). More specifically the following null hypotheses were tested with the statistical tests used;

$H_{01}$: Perceptions of teachers’ expectations do not significantly predict pupils’ academic self-concept: Simple Regression analysis was used.

$H_{02}$: Academic buoyancy does not significantly predict pupils’ academic self-concept: Simple Regression analysis was used.

$H_{03}$: Internal/External frame of reference does not significantly predict pupils’ academic self-concept: Simple Regression analysis was used.

$H_{04,1}$: There is no significant gender difference in academic self-concept: t-test for Independent samples was used.
There is no significant gender difference in academic achievement: t-test for Independent samples was used.

H₀₅: Academic self-concept is not a significant predictor of pupils’ academic achievement: Simple Regression analysis was used.

H₀₆: Academic self-concept is not a significant predictor of pupils’ academic engagement: Simple Regression analysis was used.

H₀₇: Perceptions of teachers’ expectations, academic buoyancy, Internal/external frame of reference, academic achievement and academic engagement are not significant predictors of academic self-concept: Multiple Regression was used.

H₀₈: Perceptions of teachers’ expectations, academic buoyancy, Internal/external frame of reference, academic self-concept and academic engagement are not significant predictors of academic achievement: Multiple Regression was used.

3.9 Logistical and Ethical Considerations

3.9.1 Logistical Considerations

The logistics involved getting a clearance letter from Kenyatta University Graduate School through the Department of Educational Psychology. This was followed by research authorization letter and research permit from the National Commission for Science, Technology and Innovation (NACOSTI). The researcher also sought official permission from the County Director of Education, Nairobi County. Finally, the researcher wrote a self-introduction letter to the specific schools where the study was to be conducted to request for permission and co-operation during the research process. The researcher organized for a familiarization meeting with the head teachers of the sampled
schools. The purpose of the study was explained to the head teachers and the legality of
the research was proved by the production of the research permit. In each school the
researcher was introduced to the class teachers who were to help in the data collection
procedures and the appropriate date for collecting data was booked.

3.9.2. Ethical Considerations

The ethical issues addressed in this study included a written consent from the participants
of the selected schools (see Appendix B). At the time of study, the researcher thoroughly
explained to the respondents the purpose of the study, the procedures to be followed and
the importance of their participation. The researcher also gave them the assurance that
their responses would be treated with confidentiality and would be used for no other
purpose but for this research under question. The researcher assured the participants that
there would be no risks involved. To ensure confidentiality, the respondents remained
anonymous. Lastly, when the research was finalized, the findings were made available to
the respondents and other interested stakeholders as a way of giving feedback.
CHAPTER FOUR

FINDINGS, INTERPRETATIONS AND DISCUSSION

4.1. Introduction

This chapter focuses on the study findings, interpretations and discussion of the results in line with the stated objectives and hypotheses. Specifically, the chapter is organized into three parts. The first section is introduction while the second section gives general and demographic information. The third section presents results, interpretations covering testing of the stated hypotheses and discussion.

4.2. General and Demographic Information

This section gives the general information on the return rate of the questionnaire and the demographic data which shows the distribution of respondents by gender, sampling units (schools) and age.

4.2.1. Return Rate

The actual sample size is shown by the return rate presented of the questionnaires in Table 4.1
Table 4.1

Response Rate

<table>
<thead>
<tr>
<th>School type</th>
<th>Gender</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td>Funded</td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>Subtotal</td>
<td>79</td>
<td>21.5</td>
</tr>
<tr>
<td>Non-Funded</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub-total</td>
<td>97</td>
<td>26.4</td>
</tr>
<tr>
<td>Grand Total</td>
<td>176</td>
<td>47.97</td>
</tr>
</tbody>
</table>

Note: F- Frequency, %- Percentage

The study was carried out in 10 schools five of which were government funded and five were not. The sample comprised of 367 pupils. The researcher visited all the sampled schools, administered the questionnaire and ensured all the questionnaires were properly filled and collected. Thus the return rate was 100% (367) representing 176 boys and 191 girls though the response rate per item differed. The response rate was satisfactory to give reliable findings for this study. According to White and McBurney (2012), a low response rate could have a possibly biasing conclusion on the study results. However, above 70% response rate is acceptable for the research.

4.2.2. Demographic Analysis

To capture the general characteristics of the study sample, concerns such as gender, age and school type in relation to government funding were investigated.
4.2.3. Distribution of Pupils by Gender and School Type

The distribution of the respondents in the funded and non-funded schools by gender is presented in Table 4.2.

Table 4.2

Distribution of Pupils by Gender and School Type

<table>
<thead>
<tr>
<th>School type</th>
<th>Gender</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>Funded</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Precious Star School</td>
<td>12</td>
<td>6.8</td>
</tr>
<tr>
<td>Sacred Heart</td>
<td>33</td>
<td>18.8</td>
</tr>
<tr>
<td>Faith Star School</td>
<td>4</td>
<td>2.2</td>
</tr>
<tr>
<td>Savyo Bells Academy</td>
<td>7</td>
<td>4.0</td>
</tr>
<tr>
<td>Sun Rays School</td>
<td>23</td>
<td>13.1</td>
</tr>
<tr>
<td>Sub-total</td>
<td>79</td>
<td>21.5</td>
</tr>
<tr>
<td>Non-Funded</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Genesis Shilphen School</td>
<td>47</td>
<td>32.3</td>
</tr>
<tr>
<td>Tiba Junior Academy</td>
<td>12</td>
<td>6.8</td>
</tr>
<tr>
<td>Acts Preparatory School</td>
<td>10</td>
<td>5.7</td>
</tr>
<tr>
<td>Lucky Shamir Academy</td>
<td>12</td>
<td>6.8</td>
</tr>
<tr>
<td>Sky View Education Centre</td>
<td>16</td>
<td>9.0</td>
</tr>
<tr>
<td>Sub-total</td>
<td>97</td>
<td>26.43</td>
</tr>
<tr>
<td>Grand Total</td>
<td>176</td>
<td>47.96</td>
</tr>
</tbody>
</table>

Note: F- Frequency, % -Percentage

Results in Table 4.2 shows that majority of the pupils in the study sample were female, which was 191 (52.04%), while the males constituted 176 (47.96%) respondents. The
gender ratio in the sample was almost balanced. Girls ratio to boys as seen in the Table 4.2 was 191:176 =1.08:1. There are however individual school variations, for instance in Genesis Shilphen there was gender disparity in favour of girls and in Faith Star and Sacred Heart the discrepancy was in favour of the boys.

The findings presented in Table 4.2 are contrary to the national ratio which gives the enrolment of boys as being higher than that of girls. The national enrolment stands at 4.4 million (50.8%) for boys and 4.3 million (49.2%) for girls. The class 8 national enrolments as at 2014 were 397,780 (50.06%) for boys and 396,471 (49.91%) for girls (MOEST statistics, 2014). The lower enrolment for boys in the slum schools could be attributed to the fact that boys may be more engaged in economic activities than girls.

Results in Table 4.2 further shows that 158 pupils, of which 79 (21.5%) were boys and 79 (21.5%) girls were enrolled in the funded schools and 209, 97 (47.95%) boys and 112 (30.51%) girls were enrolled in the non-funded schools. According to Table 4.2 many pupils are still enrolled in non-funded non-formal schools where the parent shoulders the cost of the education for their children. This burden may hinder provision of quality education through provision of inadequate teaching and learning materials and this may impact negatively on the pupils’ academic achievement.

4.2.4. Distribution of Respondents by Age and Gender

The distribution of respondents by age and gender are summarized in Table 4.3
Table 4.3

**Distribution of Pupils by Age in Years and Gender**

<table>
<thead>
<tr>
<th>Age</th>
<th>12-14</th>
<th>15-17</th>
<th>18-20</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>Male</td>
<td>126</td>
<td>34.3</td>
<td>48</td>
<td>13.07</td>
</tr>
<tr>
<td>Female</td>
<td>165</td>
<td>45.0</td>
<td>26</td>
<td>7.08</td>
</tr>
<tr>
<td>Total</td>
<td>291</td>
<td>79.3</td>
<td>74</td>
<td>20.2</td>
</tr>
</tbody>
</table>

Note: F- Frequency, % - Percentage

Results in Table 4.3 show that 291 (79.3%) of the respondents were 12 to 14 years old, 74 (20.2%) were between 15 and 17 years of age and only 2 (0.5%) were between 18 and 20 years old. As seen in Table 4.3, most of the pupils in the non-formal schools are between ages 12 and 14.

Results in Table 4.3 further show that the females in the age bracket of 12 to 14 years were 165 (45.0%) whereas the males were 126 (34.3%). Between ages 15 and 17 the females were 26 (7.08%) and the males were 48 (13.07%). In the category of 18 to 20 years of age there were only 2 (0.5%) males and no females were represented in this group. The participants in this study were class 8 in non-formal primary schools in Kenya. The recommended age for enrollment in class one is seven years for the formal education system in Kenya. Therefore, for a pupil who has gone through the system the child is expected to be around 13 to 14 years of age by the time they reach class 8. Thus any pupil who is above this age and is in class 8, has definitely experienced some form of
delay in their schooling. Class retention, truancy, sickness, juvenile delinquency, poverty or other factors may have occasioned this delay which may limit the child’s capacity to effectively participate in school.

In addition Table 4.3 shows that the females in the age bracket of 12 to 14 years were 165 (45.0%) whereas the males were 126 (34.3%). Between ages 15 and 17 the females were 26 (7.0%) and the males were 48 (15.07%). In the category of 18 to 20 years of age there were only 2 (0.5%) males and no females were represented in this group. The results indicate that boys enrolled in school when they were older than girls or they lost more time along the way.

4.3. Results of the Study

The results of the study were presented in line with the objectives of the study. This section gives the relevant descriptive statistics for each of the objectives, followed by the specific inferential statistics used to test the stated null hypothesis in order to achieve the study objectives. Finally a discussion of the findings was given.

4.3.1. Perceptions of Teachers’ Expectations as a Predictor of Academic Self-concept

(a) Description of Perceptions of Teachers’ Expectations as a Predictor of Academic Self-concept
The researcher was interested in determining the contribution of perceptions of teachers’ expectations to the establishment of academic self-concept among pupils in non-formal primary schools. The perceptions of teachers’ expectations questionnaire had 10 items describing how pupils viewed teachers’ supportive behaviour. Pupils were instructed to rate the occurrence of teachers supportive behaviour on a five-point likert scale as always (5), often (4), sometimes (3), not sure (2), and never (1). The highest score per item was 5 indicating that behaviour was always communicated to the pupils to mean the teacher viewed the students’ academic ability positively. The lowest score per item was 1 indicating that the teacher never communicated that expectation meaning they viewed the pupils’ academic ability negatively.

The participants’ perceptions of teachers’ expectations score was used to categorize the respondents having low, average or high level of teachers’ expectations. The cut-off scores of category of low was 1.0 to 3.0, average was 3.1 to 4.0 and high was 4.1 to 5.0. The results are shown in Table 4.4
Table 4.4

*Levels of Participants’ Perceptions of Teachers’ Expectations*

<table>
<thead>
<tr>
<th>Levels of perceptions of teachers’ expectations</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>7</td>
<td>2.0</td>
</tr>
<tr>
<td>Average</td>
<td>192</td>
<td>52.5</td>
</tr>
<tr>
<td>High</td>
<td>166</td>
<td>45.5</td>
</tr>
<tr>
<td>Total</td>
<td>365</td>
<td>100</td>
</tr>
</tbody>
</table>

It is observed from Table 4.4 that the students who felt that teachers communicated their academic ability as high were 166 (45.5%) and the majority 192 (52.5%) thought that teachers rated them as average. Only 7 (2.0%) felt that teachers viewed their academic ability as low. Therefore, majority of the respondents felt that teachers communicated positive views on their academic ability.

The participants’ perceptions of teachers’ expectations were further analyzed by gender to get the range, maximum, minimum, mean, standard deviation, skewness and kurtosis. The results are represented in Table 4.5

**Perceptions of Teachers’ Expectations by Gender**

Results in Table 4.5 show the distribution of the respondents’ perceptions of teachers’ expectations by gender.
Table 4.5

*Description of Perceptions of Teachers’ Expectations Scores by Gender*

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Range</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>176</td>
<td>1.9</td>
<td>2.9</td>
<td>4.8</td>
<td>3.94</td>
<td>.39</td>
<td>.03</td>
<td>-.38</td>
<td>-.25</td>
</tr>
<tr>
<td>Female</td>
<td>191</td>
<td>2.4</td>
<td>2.6</td>
<td>5.0</td>
<td>3.95</td>
<td>.44</td>
<td>.03</td>
<td>-.47</td>
<td>-.13</td>
</tr>
</tbody>
</table>

Note: Min- Minimum, Max-Maximum, SD-Standard deviation, SE-Standard error

As shown in Table 4.5 the mean of perceptions of teachers’ expectations was 3.94 (SD=.39) and 3.95 (SD=.44) for boys and girls respectively. This means that teachers quite often viewed their pupils’ academic ability positively. The range of 2.4 for the girls’ scores was wider while for the boys the range of 1.9 was narrower. The standard deviation for boys was smaller hence their views were more homogeneous. The negative skewness indicated that a big number of values were above the mean. This implied that the respondents rated themselves highly in the way they perceived teachers to view their ability. The negative kurtosis meant that the distribution of perception teachers’ expectation scores was platykurtic, a highly dispersed, lower and flatter peak than the normal distribution.

**(b) Hypothesis Testing**

The first objective was meant to describe the extent to which perceptions of teachers’ expectations predict pupils’ academic self-concept in non-formal primary schools. In relation to this objective it was hypothesized that;
H₀₁: Perceptions of teachers’ expectations do not significantly predict pupils’ academic self-concept.

Simple regression analysis was conducted to establish the significant amount of variation in the values of pupils’ academic self-concept. The results included Model Summary, ANOVA and coefficients.

The Model Summary provided the correlation coefficient (R) and coefficient of determination (R²) for the regression model. The results are presented in Table 4.6

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std Error of The Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.32²</td>
<td>.10</td>
<td>.10</td>
<td>.51</td>
</tr>
</tbody>
</table>

Predictors: (constant). Perceptions of teachers’ expectations

From Table 4.6 it is observed that the correlation (R) between perceptions of teachers’ expectations and academic self-concept is .32. Further perceptions of teachers’ expectations accounted for R² of .106 of the total variation in academic self-concept. Therefore perceptions of teachers’ expectations accounted for 10.6% variance in pupils’ academic self-concept.

The ANOVA tells whether the regression model explains a statistically significant proportion of the variance. Specifically it was to determine the significance of
perceptions of teachers’ expectations on pupils’ academic self-concept at 0.05 alpha levels. Table 4.7 shows the ANOVA result in the regression.

Table 4.7

ANOVA on Significance of Perceptions of Teachers’ Expectations on Pupils’ Academic self-Concept

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squared</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>10.91</td>
<td>1</td>
<td>10.97</td>
<td>41.71</td>
<td>.00b</td>
</tr>
<tr>
<td>1 Residual</td>
<td>92.34</td>
<td>353</td>
<td>.26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>103.26</td>
<td>354</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Outcome Variable: Academic self-concept

b. Predictors: (Constant), perceptions of teachers’ expectations.

The ANOVA in Table 4.7 indicates that the model of academic self-concept as a dependent (outcome) variable and perceptions of teachers’ expectations as the predictor variable is significant \( (F_{1,353} = 41.71, \ P<0.05) \).

The coefficients Table 4.8 gives the values of the regression line. According to Table 4.8 the constant of 1.90 is the y-intercept where the perceptions of teachers’ expectations score is zero. The gradient of the regression line or the slope is .42, which is the regression coefficient. This means that for every one standard mark increase in perceptions of teachers’ expectations, the model predicts an increase of .42 in academic self-concept.
Table 4.8

**Regression Coefficients**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1.90</td>
<td>.26</td>
<td>7.31</td>
<td>.00</td>
</tr>
<tr>
<td>Perceptions of teachers’ Expectations</td>
<td>.42</td>
<td>.06</td>
<td>.32</td>
<td>6.45</td>
</tr>
</tbody>
</table>

a. Outcome Variable: Academic self-concept

Results in Table 4.8 indicate that perceptions of teachers’ expectations are a significant predictor of academic self-concept ($\beta=.32$, $t=6.45$, $P <0.05$) with a constant of 1.905. The regression equation is: predicted academic self-concept =1.90+ .32 (perceptions of teachers’ expectations). Therefore perceptions of teachers’ expectations are a significant predictor of academic self-concept.

The simple regression analysis to ascertain the extent to which perceptions of teachers’ predict academic self-concept established that perceptions of teachers’ expectations explain a significant amount of variance in the values of academic self-concept. A strong positive correlation was found between perceptions of teachers’ expectations and academic self-concept ($R=.32$) and the regression model predicted 10.6% of the variance.
The model was a good fit for the data (F, 1,353=41.71, P <0.05). From the results the research findings rejected the first null hypothesis stated that perceptions of teachers’ expectations do no significantly predict pupils’ academic self-concept. This means that perceptions of teachers’ expectations are critical predictors of pupils’ academic self-concept accounting for 10.6% variance. This is an indication that pupils’ perception of teachers’ expectations is an important factor in academic self-concept formation.

(c) Discussion of the Results Teachers’ Expectation as Predictors of Academic Self-concept

The findings of the current study supported those of earlier studies by Mekonnen (2014) in Ethiopia which reported positive and significant correlations between perceptions of teachers’ expectations. Similarly results of a study in Turkey by Erkman, Caner, Sart, Borton and Sahan (2010) showed that perceived teachers’ acceptance was significantly correlated with boys’ self-concept, academic self-concept and achievement. Blote (2005) as well reported similar findings for Dutch students whereby teachers gave feedback effectively according to teacher expectances. Similarly, Burnett findings (2005) established the significance of teachers’ verbal proclamations and demonstrated that teachers, positive comments were more favorable than negative criticism to academic self-concept. The samples used by Hattie and Timperley (2007) were similar to the one used in the current study in terms of the level of schooling. The findings are supported by those of the current study that reported a positive relationship between perceptions of teachers’ expectations and academic self-concept. Thus notwithstanding the cross-cultural differences and different study locations, pupils perception teachers’ expectations
were found to be positively correlated to academic self-concept. The findings of these studies suggested that whatever expectations teachers communicate to their pupils, the learners live up to them affecting them negatively or positively.

However, the results of the current study did not agree with Lee and Smith (2001) whose findings indicated that race and social class influenced teachers’ perceptions about learners. They found out that teachers held low academic expectations for low income African American students, but higher expectations for white or Chinese students or when they came from an upper social class. Similarly, contrary to the findings of the current research, data on a study by Diamond, Randolph and Spillane (2004) demonstrated positive teacher expectations when students had higher academic abilities. However, where students’ were not academically endowed, some teachers tended to believe that students lacked of enthusiasm. This undermined teachers’ ability to teach effectively impacting negatively on the students’ performance and consequently their academic self-concept. Therefore teachers should frame criticisms in a positive tone as feedback perceived as negative can be detrimental to effects of students’ academic self-concept.

4.3.2. Academic Buoyancy as a Predictor of Academic Self-concept

(a) Description of Participants’ Academic Buoyancy as a Predictor of Academic Self-concept

The researcher was interested in determining the contribution of academic buoyancy to the establishment of academic self-concept among pupils in non-formal primary schools.
The way pupils deal with academic life challenges was established by using descriptive statistics provided by the responses of the pupils. The academic buoyancy questionnaire had 10 items describing pupils’ behaviour. They were instructed to indicate the degree of agreement to the stated behaviour as *strongly agree* (5), *agree* (4), *not sure* (3), *disagree* (2) and *strongly disagree* (1).

The participants’ academic buoyancy score was further used to categorize the respondents having low, average or high level of academic buoyancy. The cut-off scores of category of *low* was 1.0 to 2.9, the range for the *average* category was 3.0 to 4.0 and *high* was 4.1 to 5.0. The results are shown in Table 4.9

The levels of respondents’ academic buoyancy are presented in Table 4.9

<table>
<thead>
<tr>
<th>Levels of academic buoyancy</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>25</td>
<td>6.7</td>
</tr>
<tr>
<td>Average</td>
<td>181</td>
<td>49.4</td>
</tr>
<tr>
<td>High</td>
<td>161</td>
<td>43.9</td>
</tr>
<tr>
<td>Total</td>
<td>367</td>
<td>100</td>
</tr>
</tbody>
</table>

It is observed from Table 4.9 that 25 (6.7%) of the participants had low levels of academic buoyancy. Almost half of the respondents, 181(49.4%) were categorized as being average. More than one third of the participants, 161 (43.9%) had high level of academic buoyancy. The meaning of the frequencies in Table 4.9 is that majority of the respondents reported that they were able to deal with academic challenges.
**Academic Buoyancy by Gender**

The participants’ academic buoyancy was analyzed by gender to get the range, maximum, minimum, mean, standard deviation, skewness and kurtosis. The results are represented in Table 4.10

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Range</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>176</td>
<td>2.64</td>
<td>2.27</td>
<td>4.91</td>
<td>3.91</td>
<td>.52</td>
<td>.03</td>
<td>-.80</td>
<td>.44</td>
</tr>
<tr>
<td>Female</td>
<td>191</td>
<td>2.58</td>
<td>2.33</td>
<td>4.91</td>
<td>3.96</td>
<td>.48</td>
<td>.03</td>
<td>-.60</td>
<td>.25</td>
</tr>
</tbody>
</table>

Note: SD-Standard deviation, Min-Minimum, Max-Maximum, SE-Standard error

As shown in Table 4.10 the mean academic buoyancy for males is 3.91 (SD=.52) and 3.96 (SD= .48) for females. The negative skewness indicated that the scores were above the mean. This meant that many pupils rated themselves highly in academic buoyancy. The positive values in kurtosis indicated more extreme values in the academic buoyancy distribution. The results further indicated that there is a slight gender difference in academic buoyancy. The sample mean showed that all the respondents agreed that they were able to negotiate the challenges posed by the rough academic landscape. However, the standard deviation score for the girls was smaller hence their views were more homogeneous.
(c) **Hypothesis Testing**

In line with the second objective which was meant to establish whether academic buoyancy predicts academic self-concept for primary school pupils in non-formal primary schools the following null hypotheses was advanced;

\[ H_{02}: \text{Academic buoyancy does not significantly predict pupils’ academic self-concept.} \]

Simple regression analysis was conducted to determine the significant variation in the values of academic self-concept. The results included Model Summary, ANOVA and regression coefficients.

The Model Summary provided the correlation coefficient and coefficient of determination \(R^2\) for the regression model. The results are presented in Table 4.11

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.38</td>
<td>.14</td>
<td>.14</td>
<td>.49</td>
</tr>
</tbody>
</table>

Predictors: (constant), Academic buoyancy

From Table 4.11 it is observed that the correlation \(R\) between academic buoyancy and academic self-concept is .38. Further academic buoyancy accounted for \(R^2\) of .147 of the total variation in academic self-concept. Therefore academic buoyancy accounted for 14.7% variance in pupils’ academic self-concept.
Further, the ANOVA tells whether the regression model explains a statistically significant proportion of the variance. Specifically, it was to determine the significance of academic buoyancy in predicting pupils’ academic self-concept at 0.05 alpha levels. Table 4.12 shows the ANOVA result in the regression.

Table 4.12

*ANOVA on Significance of Academic Buoyancy on Pupils’ Academic self-Concept*

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Regression</td>
<td>15.16</td>
<td>1</td>
<td>15.16</td>
<td>60.77</td>
<td>.00</td>
</tr>
<tr>
<td>Residual</td>
<td>88.09</td>
<td>353</td>
<td>.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>103.26</td>
<td>354</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- a. Outcome Variable: Academic self-concept
- b. Predictors: (Constant), academic buoyancy.

The ANOVA in Table 4.12 indicates that the model of academic self-concept as a dependent (outcome) variable and academic buoyancy as the predictor variable is significant ($F_{1,353} = 60.77$, $P<0.05$).

The coefficients Table 4.13 gives the values of the regression line. According to Table 4.13 the constant or the y-intercept is 1.96. The slope or the regression coefficient is .41, $t=7.79$. The implication is that for every one point increase in academic buoyancy, the model predicts an increase of .41 in academic self-concept.
Table 4.13

Regression coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>1.96</td>
<td>.20</td>
<td></td>
<td>9.40</td>
</tr>
<tr>
<td>Academic Buoyancy</td>
<td>.41</td>
<td>.05</td>
<td>.38</td>
<td>7.79</td>
</tr>
</tbody>
</table>

a. Outcome Variable: academic self-concept

Results in Table 4.13 indicate that academic buoyancy is a significant predictor of academic self-concept ($\beta=.38$, $t=7.79$, $P <0.05$) with a constant of 1.963. The regression equation that was generated to predict academic self-concept was: Predicted academic self-concept $= 1.96 + .38(\text{academic buoyancy})$. As illustrated therefore, the regression analysis established that academic buoyancy explains a significant amount of variance in the values of academic self-concept.

The simple regression analysis to ascertain the extent to which academic buoyancy predicts academic self-concept established that academic buoyancy explains a significant amount of variance in the values of academic self-concept. A strong positive correlation was found between academic buoyancy and academic self-concept ($R=.38$) and the regression model predicted 14.7% of the variance. The model was a good fit for the data ($F_{1,353}=60.77$, $P <0.05$). From the results the research findings rejected the second null
hypothesis stated that academic buoyancy does no significantly predict pupils’ academic self-concept. This means that academic buoyancy is a critical predictor of pupils’ academic self-concept accounting for 14.7% variance. This is an indication that pupils’ academic buoyancy is an important factor in academic self-concept formation.

(c) Discussion of the Results Academic Buoyancy as a Predictor of Academic Self-concept

The findings of the current study concur with those of Martin and Marsh (2006, 2008) and Martin et al. (2010) who proposed that academic buoyancy helps students bounce back from academic setbacks by affecting or reducing the negative effects of the risk. Just as in the present study, Rutter (2007) and Morales (2010) proposed a cycle in which a student realistically and effectively identifies a major risk and the student then activates an attitude to reduce the effects of that risk. Academic buoyancy leads to improved educational outcomes. The results of the current study are further supported by earlier findings by Tabassam and Grainge (2002) and those of Douglas (1985) and Martin (2012a) who in their study found that low academic and maladaptive attributions found among students with ADHD pose significant barriers to adaptive buoyancy construct. Academic buoyancy addresses the low level “everyday” academic risk for the students who face substantial academic challenges.

Taking these findings together it may be that the fundamental elements of academic buoyancy such as persistence counteract psych-educational impediments. It may also be that low levels of perceived competence and a sense of helplessness pose barriers to
potentially positive effects of academic buoyancy. Since academic buoyancy comprises elements that directly diminish psycho-educational problems, then this may be an important means by which it is particularly beneficial to students. Research has found that academic buoyancy is an academic enabler (Diperna, 2006; Diperna & Elliot, 2002) that mediate between the relation between academic outcomes and academic buoyancy.

Unlike in the present study, in a research by Martin and Marsh (2008), data was collected from 598 students in years 8 to 10 at five Australian high schools. Halfway through the school year and then again at the end of the year, they were asked to rate their academic buoyancy in mathematics as well as their academic self-concept. Multilevel modeling found a bulk of variance in academic buoyancy was explained at student level and anxiety both at Time 1 and Time 2 accounted for a bulk of academic buoyancy which predicted various levels of academic self-concept. Thus regardless of age level, whether measures relate to one or more subjects or if the study was longitudinal, the two studies do confirm that anxiety is a powerful predictor of academic buoyancy which in turn influences academic self-concept. Anxiety reflects fear of failure and that students responses to it reflect low academic buoyancy.

Passer (2003) found that individuals high in anxiety expected poor performance in an impending competition than their counterparts who were low in anxiety. This may be the way academic buoyancy is manifested. Martin (2001) found out that anxiety predicts quite counterproductive approaches learners employ to deal with fear of failure including defensive pessimism and self-handicapping (Martin, Marsh & Debus, 2001a, b. 2003).
These could be ways in which low academic buoyancy is manifested in students’ academic life and in extension, predicting low academic buoyancy.

Academic buoyancy as presented in the current study brings together key features of the stress management research. It demonstrates students’ handling academic problems in response to their everyday difficulties, stressors and pressures. The data seemed to support this integration in that some key findings are echoed in academic hassle and coping research (Kohn et al., 2001; Lazarus, 2001; Zeidner, 2002, 2004). Therefore pupils low in academic buoyancy should be assisted to prevent underachievement and development of low academic self-concept.

4.3.3. Internal/External Frame of Reference as a Predictor of Academic Self-concept

(a) Description of the Participants’ Internal/External Frame of Reference as a Predictor of Academic Self-concept

The researcher was interested in determining the contribution of internal/external frame to the establishment of academic self-concept among pupils in non-formal primary schools. Apart from school grades, pupils need to judge their academic ability by comparing their performance with a reference group as well as internally comparing their ability in one subject with another. This was established by the responses provided by the pupils.
The participants’ internal/external frame of reference score was used to categorize the respondents having low, average or high level of frame of reference. The categories were as follows: low 1.0 to 2.9, average 3.0 to 3.9 and high 4.0 to 5.0. The results of the analysis are given in Table 4.14

Table 4.14

<table>
<thead>
<tr>
<th>Levels of Frame of Reference</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>42</td>
<td>11.5</td>
</tr>
<tr>
<td>Average</td>
<td>246</td>
<td>67.0</td>
</tr>
<tr>
<td>High</td>
<td>79</td>
<td>21.4</td>
</tr>
<tr>
<td>Total</td>
<td>367</td>
<td>100</td>
</tr>
</tbody>
</table>

It is observed from Table 4.14 that a minority of the pupils had low and high levels of internal/external frame of reference scoring at 42 (11.5%) and 79 (21.4%) respectively. Majority of the participants 246 (67.0%) rated themselves as average. These results imply that most of the pupils felt that their ability to learn school subjects was good. However, a few learners felt that their ability was poor and another small group felt that they were very good.

Internal/External Frame of Reference by Gender

The internal/external frame of reference questionnaire had ten items composed of description of pupils’ ability in school subjects. Pupils were to rate themselves depending on the degree of agreement as true (5), mostly true (4), mostly true than false (3), mostly
false (2) and false (1). The participants’ internal/external frame of reference was analyzed by gender to get the range, maximum, minimum, mean, standard deviation, skewness and kurtosis. The results are represented in Table 4.15

Table 4.15

*Description of Internal/External Frame of Reference Scores by Gender*

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Range</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>176</td>
<td>2.2</td>
<td>2.6</td>
<td>4.8</td>
<td>3.74</td>
<td>.47</td>
<td>.04</td>
<td>-.16</td>
<td>-.49</td>
</tr>
<tr>
<td>Female</td>
<td>191</td>
<td>2.3</td>
<td>2.2</td>
<td>4.7</td>
<td>3.54</td>
<td>.45</td>
<td>.03</td>
<td>.09</td>
<td>-.46</td>
</tr>
</tbody>
</table>

Note: Min-Minimum, Max-Maximum, SD-Standard Deviation, SE-Standard error

As shown in Table 4.15 the mean internal/external frame of reference was 3.74 (SD=.47) and 3.54 (SD=.09) for boys and girls respectively. The range of 2.2 for boys was smaller than for girls which stood at 2.3. The negative skewness noted in the scores for boys indicated that they rated themselves highly while the positive skewness for the girls indicated that their scores were normally distributed. These results indicate that boys’ comparison of their ability in school subjects was better than for the girls, though the latters’ views were more homogeneous. Nevertheless, the negative kurtosis for both boys and girls meant that the distribution of the scores was highly dispersed around the mean resulting in a lower and flatter platykurtic peak than the normal distribution. These results indicate that boys’ comparison of their ability in school subjects was better than for the girls, though the latters’ views were more homogeneous.
(b) Hypothesis Testing

The third objective which was meant to determine the extent to which internal/external frame of reference predicts academic self-concept of the pupils in non-formal primary schools stated that. In relation to this objective, it was hypothesized;

H_{03}: Internal/External frame of reference does not significantly predict pupils’ academic self-concept.

Simple regression analysis was conducted to determine the significant amount of variation in values of academic self-concept. The results included Model Summary, ANOVA and regression coefficient.

The Model Summary of regression equation was presented to illustrate the correlation coefficient and coefficient of determination ($R^2$) for the regression model. The results are presented in Table 4.16

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.73$^a$</td>
<td>.536</td>
<td>.53</td>
<td>.36</td>
</tr>
</tbody>
</table>

- Predictors: (Constant, Internal/external frame of Reference)

From Table 4.16 it is observed that a coefficient (R) of .73 suggests there is a strong positive relationship between internal/external frame of reference and academic self-
concept while R2 of .53 indicated approximately 53.6% of the variance of pupils’ academic self-concept could be accounted for by internal/external frame of reference.

Further, the ANOVA tells whether the regression model explains a statistically significant proportion of the variance. Specifically it was to determine the significance of internal/external frame of reference in predicting pupils’ academic self-concept at 0.05 alpha levels. Table 4.17 shows the ANOVA result in the regression.

Table 4.17

_The ANOVA Showing the significance of Internal/External Frame of Reference as a Predictor of Academic Self-concept_

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>55.28</td>
<td>1</td>
<td>55.28</td>
<td>406.12</td>
<td>.00^b</td>
</tr>
<tr>
<td>1 Residual</td>
<td>47.92</td>
<td>352</td>
<td>.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>103.21</td>
<td>353</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   a. Outcome Variable: Academic self-concept

   b. Predictors: (Constant), internal/external frame of reference

The results in Table 4.17 indicates the ANOVA linear regression model of academic self-concept as a dependent variable and internal/external frame of reference as the predictor variable is significant (F_{1,352} = 406.12, P<0.05).
The coefficients Table 4.18 gives the values of the regression line. According to Table 4.18 the constant of .51 is the y-intercept where internal/external frame of reference score is zero. The gradient of the regression line, the slope is .84, t=20.15 which is the regression coefficient. This implies that for every one standard increase in internal/external frame of reference, the model predicts an increase of .84 in academic self-concept.

Table 4.18

*Regression Coefficient*

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>.51</td>
<td>.15</td>
<td>3.34</td>
<td>.00</td>
</tr>
<tr>
<td>Frame of reference</td>
<td>.84</td>
<td>.04</td>
<td>.73</td>
<td>20.15</td>
</tr>
</tbody>
</table>

a. Outcome Variable: academic self-concept

Results in Table 4.18 indicate internal/external frame of reference is a significant predictor of academic self-concept (β=.73, t=20.15, P<0.05) with a constant of .512. The regression equation that was generated to predict academic self-concept was;

Predicted academic self-concept = .51 + .73(internal/external frame of reference).

Internal/external frame of reference had a positive and predictive value on pupils’ academic self-concept. The regression analysis established that internal/external frame of reference explains a significant amount of variance in the values of academic self-concept.
(β = .73, t (352) =20. 15, p <0.05, R²=.53, F, 1,353=406.12, P <0.05). Therefore internal/external frame of reference is a significant predictor of academic self-concept.

The simple regression analysis to determine the extent to which internal/external frame of reference predicts academic self-concept established that internal/external frame of reference explains a significant amount of variance in the values of academic self-concept. A strong positive correlation was found between internal/external frame of reference and academic self-concept (R=.73) and the regression model predicted 53.6% of the variance. The model was a good fit for the data (F, 1,352=406.12, P <0.05). From the results the research findings rejected the null hypothesis stated that internal/external frame of reference does not significantly predict pupils’ academic self-concept. This means that internal/external frame of reference is a critical predictor of pupils’ academic self-concept accounting for 53.6% variance. This is an indication that internal/external frame of reference is an important factor in academic self-concept formation.

(c) Discussion of the Results Internal/External Frame of Reference as a Predictor of Academic Self-concept

The findings of the current research indicate that the relations described in the classical internal/external model are not restricted to a particular achievement or self-concept measures or to a specific age group, gender or country. The correlation between general subject achievement and general academic self-concepts was strong and positive. These results are in agreement with those of a study by Moller, Pohmann, Koller and Marsh.
They found that horizontal paths relating mathematics achievement to verbal achievements were positive. However, unlike in the current study, they found that paths leading from verbal achievements to mathematics self-concept and mathematics achievement to verbal self-concepts to be negative.

The results of the current study proved academic self-concept to be subject-specific. Thus, it is reasonable to conceptualize academic self-concept on domain specific level. In terms of internal/external model, social (external) comparisons lead to positive effects of achievement on academic self-concept in corresponding domain whereas internal/dimensional comparisons lead to negative effects of achievements on academic self-concept in the non-corresponding domain. The study also revealed that teacher assigned grades had a stronger impact on the corresponding self-concept. This result is consistent with Marsh (2007) who emphasized that school grades are a more direct form of feedback to students.

Besides, the findings of the current study established that apart from intra-individual comparisons there also existed social comparisons which influence pupils’ academic self-concept. Marsh’s (1986) internal/external frame of reference model assumes that dimensional comparisons lead to negative paths from achievement in one subject to self-concept in another subject. In the present study internal/external model was extended to Science, Social Studies/Religious Education (SS/RE) and Kiswahili. Domain specific academic self-concept of 367 students from 10 non-formal schools was assessed. In support of internal/external model, school subject achievements were positively
correlated as were with academic self-concept. Positive paths were received from overall score of academic self-concept.

Equally, the present study research analyzed the impact of internal/external frame of reference on students’ academic self-concept in five subjects unlike the study for Moller, Strewblow, Pohmann and Koller (2009) which analyzed four subjects namely two verbal areas and two numerical subjects. The self-concept measures were subject- specific. Confirmatory factor analysis resulted in a four factor model each factor representing one of four subjects. This represented a better fit than with only one verbal and one math factor in the original internal/external model by Marsh (1986, 1990a). Therefore, it is reasonable to conceptualize academic self-concept on a more subject specific level.

Just as in the current research, in line with the findings of Marsh and Yeung (2010) and Yeung, Lee and Wong (2001), these results indicate that the relations described in the classical internal/external model are not restricted to one verbal and one mathematical subject but also apply to additional school subjects. Achievement correlations between all subjects were positive and significant. Each subject achievement had a positive effect on the corresponding academic self-concept as predicted by model frame of reference.

In a cross-cultural generalizability of the internal/external model by Marsh, Kong and Hau (2010), Chinese, English and mathematics achievement were related to Chinese, English and mathematics self-concepts in a large representative sample of Hong Kong high school students. These results are generalizable to a similar cross-cultural sample in
the current study. Marsh and Yeung (2011) included Spanish as a separate domain. The extended internal/external model with two domains fitted data well. The effects of mathematics and verbal achievement on Spanish self-concept were negative as were the effects of Spanish achievement on Global Math and Global Verbal self-concepts, whereas the effects of Spanish achievement on Spanish self-concept was strongly positive. These findings confirm that schooling levels and cultures notwithstanding, the internal/external model is global. It does not matter whether the participants are from a developed or developing country as in the current study. Internal/external frame of reference phenomenon applies equally.

4.3.4. Academic Self-concept

(a) Description of the Participants’ Academic Self-concept

The researcher intended to investigate the pupils’ personal evaluations in regard to academic school subjects. To measure this variable the questionnaire contained academic self-concept ability ladders containing ladder positions indicating the highest ability (5) to the lowest ability (1). The middle position of 2, 3 and 4 indicated increasing moderate ability. Pupils were asked to locate themselves on the ladder positions that indicated ability in each of the following school subjects; Mathematics, English, Kiswahili, Social Studies/Christian Education and Science.

The participants’ academic self-concept score was used to categorize the respondents having low, average or high level of academic self-concept. The cut-off scores of category of low was 1.0 to 3.0, average was 3.1 to 4.0 and high was 4.1 to 5.0. The results are shown in Table 4.19
Table 4.19

*Levels of Academic Self-concept*

<table>
<thead>
<tr>
<th>Levels of academic self-concept</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>70</td>
<td>19.1</td>
</tr>
<tr>
<td>Average</td>
<td>239</td>
<td>65.1</td>
</tr>
<tr>
<td>High</td>
<td>58</td>
<td>15.8</td>
</tr>
<tr>
<td>Total</td>
<td>367</td>
<td>100</td>
</tr>
</tbody>
</table>

As observed in Table 4.19 the pupils who evaluated themselves as having high academic self-concept were 58 (15.8%) while those that felt that they had low academic self-concept were 70 (19.1%). The majority of the respondents, 239 (65.1%), rated themselves as average in academic self-concept. Considering that academic self-concept was self-reported, it may be concluded that majority of the pupils self-evaluated themselves as average so as to protect their ego.

In the analysis that follows, the researcher focused on the descriptive analysis of academic self-concept. The participants’ scores on academic self-concept were analyzed by gender to get the range, mean, standard deviation, skewness and kurtosis.

**Description of Respondents’ Academic Self-concept by Gender**

The results of the respondents’ academic self-concept by gender are summarized in Table 4.20.
Table 4.20

*Description of Respondents’ Academic Self-concept by Gender*

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Range</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>176</td>
<td>2.8</td>
<td>2.0</td>
<td>4.8</td>
<td>3.7</td>
<td>.56</td>
<td>.04</td>
<td>-.51</td>
<td>.51</td>
</tr>
<tr>
<td>Female</td>
<td>191</td>
<td>2.6</td>
<td>2.2</td>
<td>4.8</td>
<td>3.5</td>
<td>.51</td>
<td>.04</td>
<td>-.15</td>
<td>.14</td>
</tr>
</tbody>
</table>

Note: Min-Minimum, Max-Maximum, SD- Standard deviation, SE-Standard error

Information given in Table 4.20 reveals that males had a mean academic self-concept of 3.7 (SD=.56) which was higher than the 3.5 (SD=.51) for the females. The range of 2.8 for the boys was bigger than the one for the girls which was 2.6. Therefore, the academic self-concept score for the girls was more homogenous. The negative skewness indicated that a big number of the academic self-concept score was above the mean. This meant that all the respondents rated themselves highly though the boys’ scores were much higher than girls. Nationally, the boys have always done better than girls and this may be due to the fact that boys self-evaluate themselves higher than girls motivating the boys to perform better. The positive kurtosis implied that the leptokurtic distribution of the scores was more peaked around the mean because of the extreme values.

**Academic Self-concept per Subject**

The researcher compiled the scores obtained from the responses as presented in Table 4.21 to indicate pupils’ academic self-concept per subject. These were used in the analysis to find out the relationships academic self-concept had with the study variables.
Table 4.21

*Academic Self-concept per Subject*

<table>
<thead>
<tr>
<th>Subject</th>
<th>Range</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>3.14</td>
<td>1.13</td>
<td>.59</td>
<td>-.18</td>
<td>-.60</td>
</tr>
<tr>
<td>English</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>3.57</td>
<td>.85</td>
<td>.0</td>
<td>-.30</td>
<td>-.04</td>
</tr>
<tr>
<td>Kiswahili</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>3.82</td>
<td>.94</td>
<td>.04</td>
<td>-.74</td>
<td>-.46</td>
</tr>
<tr>
<td>Science</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>3.88</td>
<td>.95</td>
<td>.04</td>
<td>-.74</td>
<td>-.23</td>
</tr>
<tr>
<td>SS/RE</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>3.48</td>
<td>.98</td>
<td>.05</td>
<td>-.27</td>
<td>-.05</td>
</tr>
</tbody>
</table>

N=367

Note: Min-Minimum, Max-Maximum, SD- Standard deviation, SE-Standard error, SS/RE-Social Studies and Religious Education.

The findings summarized in Table 4.21 shows that pupils had the highest academic self-concept in Science where they evaluated themselves at 3.88 (SD=.95) and the lowest in Mathematics where they felt they had moderate ability and rated themselves at 3.14 (SD=1.13). The negative skewness in the scores indicated that greater number of values were above the mean. This meant that the respondents rated themselves highly on all the subjects. The negative kurtosis meant that the distribution of the scores was more peaked around the mean than the normal distribution.

Academic self-concept of the pupils was also analyzed per subject by gender and the findings are given in Table 4.22.
Table 4.22

*Academic Self-concept per school Subject by Gender.*

<table>
<thead>
<tr>
<th>Subject</th>
<th>Gender</th>
<th>Range</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>M</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>3.3</td>
<td>1.1</td>
<td>.01</td>
<td>-.38</td>
<td>.44</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>3.0</td>
<td>1.1</td>
<td>.08</td>
<td>.00</td>
<td>-.58</td>
</tr>
<tr>
<td>English</td>
<td>M</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>3.3</td>
<td>.87</td>
<td>.07</td>
<td>.08</td>
<td>-.48</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>3.7</td>
<td>.81</td>
<td>.06</td>
<td>-.81</td>
<td>-.62</td>
</tr>
<tr>
<td>Kiswahili</td>
<td>M</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>3.7</td>
<td>.93</td>
<td>.05</td>
<td>.64</td>
<td>.22</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>3.8</td>
<td>.95</td>
<td>.05</td>
<td>-.81</td>
<td>.72</td>
</tr>
<tr>
<td>Science</td>
<td>M</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>4.1</td>
<td>.92</td>
<td>.07</td>
<td>-.76</td>
<td>.15</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>3.7</td>
<td>.96</td>
<td>.07</td>
<td>.33</td>
<td>-.31</td>
</tr>
<tr>
<td>SS/RE</td>
<td>M</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>3.7</td>
<td>.93</td>
<td>.07</td>
<td>.42</td>
<td>-.26</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>3.3</td>
<td>.98</td>
<td>.07</td>
<td>-.14</td>
<td>.20</td>
</tr>
</tbody>
</table>

N=367

Note; SS/RE- Social Studies and Religious Education, Min- Minimum, Max-Maximum, SD-Standard Deviation, SE- Standard error, F-Female, M-Male

As revealed in Table 4.22 girls’ self-evaluation is higher in languages, both in English and Kiswahili. Academic self-concept in Mathematics and Science was found to be consistently higher for boys than for girls. Contrary to expectation, boys were higher in Social Studies and Religious Education. This affirms the stereotypes beliefs that girls are good in languages as boys are good in mathematics and sciences (Kwena, 2007). Negative skewness was noted in mathematics and Science for boys meaning they rated themselves highly in these subjects. Negative skewness was observed in English, Kiswahili and Social Studies/Religious Education for girls indicating that they evaluated themselves highly in these subjects. Positive skewness was noted for boys in English,
Kiswahili and Social Science/Religious Education meaning the evaluated themselves as average in these subjects. The same observation was noted for girls in Mathematics and Science. Negative kurtosis for males in English and Social Studies/Religious Education as well as negative kurtosis in Mathematics, English and Science for females indicated that the distribution of scores was platykurtic hence lower than the normal distribution. However, positive kurtosis for males in Mathematics, Kiswahili and Science reveals a normal distribution of scores. The same was observed for girls in Kiswahili and Social Studies/Religious Education. However, positive kurtosis for males in Mathematics, Kiswahili and Science reveals a leptokurtic distribution of scores, implying higher values than normal distribution. The same was observed for girls in Kiswahili and Social Studies/Religious Education.

4.3.5. **Gender Differences in Academic Self-concept and Academic Achievement**

(a) **Hypothesis Testing**

In reference to the fourth objective of the study which was to test if there are gender differences in academic self-concept and academic achievement the fourth hypothesis was stated as follows;

$H_{04}$; There is no significant gender difference in pupils’ academic self-concept and academic achievement.

To test these hypotheses two supplementary hypotheses were advanced. These were;

$H_{04.1}$; There is no significant gender difference in pupils’ academic self-concept.

$H_{04.2}$; There is no significant gender difference in pupils’ academic achievement.
Table 4.23

*Gender Differences in Academic Self-concept and Academic Achievement*

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Std Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Concept</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>176</td>
<td>3.65</td>
<td>.55</td>
<td>.04</td>
</tr>
<tr>
<td>Female</td>
<td>191</td>
<td>3.50</td>
<td>.51</td>
<td>.03</td>
</tr>
<tr>
<td>Academic Achievement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>176</td>
<td>285.84</td>
<td>57.27</td>
<td>4.38</td>
</tr>
<tr>
<td>Female</td>
<td>191</td>
<td>279.96</td>
<td>55.40</td>
<td>4.14</td>
</tr>
</tbody>
</table>

Note: SD-Standard deviation.
### Table 4.24

*Independent Samples Test*

<table>
<thead>
<tr>
<th></th>
<th>Leven’s Test for equality of variances</th>
<th>t-test for equality of means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig</td>
</tr>
<tr>
<td>Academic self-concept</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td>.25</td>
<td>.61</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic achievement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td>.02</td>
<td>.87</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(i) Testing the first supplementary hypothesis.

\[ H_{04.1}; \ \text{There is no significant gender difference in academic self-concept.} \]

To test this hypothesis data obtained from the respondents was subjected to independent t-test. The results are presented in Table 4.25

Table 4.25

*Independent t-test for Academic Self-concept*

<table>
<thead>
<tr>
<th>Variable</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic self-concept</td>
<td>2.75</td>
<td>353</td>
<td>.006</td>
</tr>
</tbody>
</table>

The results in Table 4.23 show that the mean academic self-concept was 3.50 (SD=.512) and 3.65 (.558) for girls and boys respectively. It is observed from Table 4.25 that there is a significant gender difference in academic self-concept between boys and girls: \( t=2.75, \ df=353, \ \text{sig.(2-tail=.006), } p <0.05 \). From the results the research findings rejected the first supplementary null hypothesis stated there is no significant gender difference in academic self-concept. The findings indicated that the difference in academic self-concept was in favour of boys whose mean was 3.65 (SD=.55) as compared to the girls mean which was 3.50 (SD=.51).

(ii) Testing the second supplementary hypothesis

The second supplementary hypothesis, in line with the fourth objective was stated in order to help in determining whether there existed any gender differences in regard to pupils’ academic achievement. The hypothesis was stated as follows;

\[ H_{04.2}; \ \text{There is no significant gender differences in academic achievement.} \]
To test this hypothesis, academic achievement score were analyzed by use of independent t-test and the results are presented in Table 4. 26

Table 4.26

*Independent t-test for Academic Achievement*

<table>
<thead>
<tr>
<th>Variable</th>
<th>t</th>
<th>df</th>
<th>Sig.(2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic achievement</td>
<td>.97</td>
<td>348</td>
<td>.33</td>
</tr>
</tbody>
</table>

Results in Table 4.23 show that the mean academic achievement was 285.85 (SD=57.27) for boys and 279.96 (55.40) for girls. It is observed from Table 4.26 that there is no significant gender difference in academic achievement between boys and girls: t=.97, df=348, sig.(2-tail=.33), p>0.05. The second supplementary null hypothesis was therefore adopted. These results indicate that the mean academic achievement for boys being 285.84 (SD=57.27) was similar to that of girls which stood at 279.96 (SD=55.40).

(b) Discussion of the Results

The findings of the current study contrast those of Jansen, Schroeders and Ludtke (2014) showing the male gender to be superior in academic self-concept to females. Their study indicated that female students possess a lower self-concept in Chemistry and Physics even after controlling for achievement. The results of their findings further demonstrated that the relations between the self-concept and achievement were substantial and subject specific when grades are used as achievement indicators.
The results of the current study are in contrast to those of Grygiel, Modzelewski, Pisarek and Ur (2016) that demonstrates relationships between academic self-concept and achievement in grade 3 and 5. Analysis revealed reciprocal correlations between academic self-concept and achievement overtime but the influence of prior achievement on self-concept was stronger. However, both constructs declined over time. Gender differences were not observed in longitudinal relationships but girls demonstrated higher mean levels of academic achievement at both grades and finally academic self-concept was not gender differentiated in grade 3 but decreased more for girls.

The results of the current research further contrast those of Wawire (2004) that showed that there was significant difference between males and females in academic achievement. The study asserts that girls tend to move towards conformity with societal expectation that, relative to males, they should be non-achievement oriented and dependent. It can be inferred from Wawire’s (2004) findings that girls who are motivated to fail feel ambivalent about success because intellectual achievement is equated to loss of femininity by socializing agents and eventually by the female herself. At adolescence most girls are very aware of and are concerned about social disapproval for so called ‘masculine pursuits’. Most girls do not express fear of failure because society has other important criteria of valuing the performance of girls other than academic (Wawire, 2004).

The findings of the current study demonstrated that age seemed to be a significant factor in the development of academic self-concept and the findings further established that
academic self-concept is a significant predictor of academic achievement. As posited by Mutweleli (2014), probably the older pupils have more social activities that can distract them from studying. For instance, they could be using their time to update themselves on the most current issues in the social media as highlighted on Facebook, WhatsApp and Twitter instead of concentrating on academic activities. If this happens, it is definitely at the expense of academic achievement.

4.3.6. Academic Self-concept as a Predictor of Academic Achievement

(a) Description of Participants’ Academic Self-concept as a Predictor of Academic Achievement

The researcher wanted to confirm or refute findings of other studies that the relationship between academic achievement and academic self-concept is reciprocal so that academic self-concept is enhanced by developing stronger academic skills and vise versa (Marsh, Bryne & Yeung, 2010). Changes in academic self-concept lead to changes in subsequent academic achievement and academic self-concept emerges as a consequent of academic achievement. To measure the variable under consideration, the researcher collected data from the class performance records of the current class 8 for term one and two and their performance in class seven for the three school terms. The average mark per pupil was compiled and transformed to Z scores to reflect the academic achievement. The researcher further analyzed the participants academic achievement scores taking into account the levels of achievements determined by the Z-scores value cut-offs score of each category. The category of low was -4.00 to -2.00; average was -1.00 to 2.00 and high was 3.00 to 4.00. The results of this analysis are presented in Table 4.27.
Table 4.27

*Levels of Academic Achievement*

<table>
<thead>
<tr>
<th>Levels of academic achievement</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>134</td>
<td>36.5</td>
</tr>
<tr>
<td>Average</td>
<td>160</td>
<td>43.5</td>
</tr>
<tr>
<td>Low</td>
<td>73</td>
<td>20.0</td>
</tr>
<tr>
<td>Total</td>
<td>367</td>
<td>100</td>
</tr>
</tbody>
</table>

The data in Table 4.27 shows that majority 160 (43.5%) of the respondents were categorized as being average in academic achievement. The pupils that were ranked as high in academic achievement were 134 (36.5%) while those categorized as low were only 73 (20.0%). The results in Table 4.27 reveal that more than three quarters of the study sample was categorized as being average and high in academic achievement.

**Participants’ Academic Achievement by Gender**

The descriptive analysis that follows focused on pupils’ academic achievement. The participants’ score from the five subjects since they were in class seven were transformed into Z-scores. The range, the mean and standard deviation, skewness and kurtosis of the transformed scores were obtained. The results are presented in Table 4.28.
Table 4.28

Participants’ Academic Achievement by Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Range</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SE</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>176</td>
<td>5.99</td>
<td>-3.23</td>
<td>2.75</td>
<td>0.56</td>
<td>.07</td>
<td>1.01</td>
<td>.07</td>
<td>.09</td>
</tr>
<tr>
<td>Female</td>
<td>191</td>
<td>5.16</td>
<td>-2.76</td>
<td>2.40</td>
<td>-.047</td>
<td>.07</td>
<td>.98</td>
<td>.13</td>
<td>-.01</td>
</tr>
<tr>
<td>Total</td>
<td>367</td>
<td>5.99</td>
<td>-3.23</td>
<td>2.75</td>
<td>0.00</td>
<td>.07</td>
<td>.99</td>
<td>.07</td>
<td>-.01</td>
</tr>
</tbody>
</table>

Note; SD-Standard Deviation, Min-Minimum, Max-Maximum, SE-Standard Error

The data in Table 4.28 shows that the range was 5.99, that is the maximum and the minimum Z-scores were 2.75 and -.3.23 respectively. The mean of 0.00 and the standard deviation of 1.00 provided evidence that the distribution of the participants’ academic achievement had been transformed to Z-scores. The table further reveals that the analyzed academic achievement by gender yielded a mean of .56 (SD=1.01) and -.04 (SD=.98) for boys and girls respectively. This indicated that the academic achievement for boys was higher than for girls, though the scores for the latter were more homogeneous as revealed by the standard deviation of .98 as compared to the one for boys of 1.01. The positive skewness indicated that most of the scores were below the mean. The positive kurtosis for boys implied that their achievement scores had a leptokurtic distribution characterized by fatter tails and extreme values. On the other hand the girls distribution was a negative kurtosis implying fewer extreme values and are highly dispersed resulting in platykurtic distribution characterized by flatness at the peak.
(b) Hypothesis Testing

The fifth objective was meant to investigate whether academic self-concept is a significant predictor of academic achievement among pupils in non-formal primary schools. In relation to this objective, it was hypothesized that:

$H_05$: Academic self-concept is not a significant predictor of pupils’ academic achievement

Simple regression analysis was conducted to establish the significant amount of variation in the values of academic achievement. The results included Model Summary, ANOVA and coefficients.

The Model Summary provided the correlation coefficient and coefficient of determination ($R^2$) for the regression model. The results are presented in Table 4.29

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.48</td>
<td>.231</td>
<td>.22</td>
<td>.87</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), academic self-concept

From Table 4.29 it is observed that the correlation (R) between academic self-concept and academic achievement was .48. Further academic self-concept accounted for $R^2$ of .231 indicating that approximately 23.1% of the total variance in pupils’ academic achievement could be accounted for by academic self-concept.
Further, ANOVA was done to determine the significance of academic self-concept on academic achievement at 0.05 alpha levels. Table 4.30 shows the ANOVA result in the regression model.

Table 4.30

_ANOVA to Determine the Significance of Academic Self-Concept on Academic Achievement_

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>80.32</td>
<td>1</td>
<td>80.32</td>
<td>103.73</td>
<td>.00</td>
</tr>
<tr>
<td>1 Residual</td>
<td>267.89</td>
<td>346</td>
<td>.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>348.21</td>
<td>347</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Outcome Variable: Academic achievement

b. Predictors: (Constant), Academic Self-Concept

The results of the ANOVA model in Table 4.30 indicates academic achievement as a dependent variable (outcome) and academic self-concept as the predictor variable was significant (F 1,346 = 103.73, P<0.05).

Further, the regression coefficients Table 4.31 gives the values of the regression line where the constant of -3.17 is the y-intercept where it is assumed the academic self-concept score is zero. According to Table 4.31 the slope is .88 which is the regression coefficient. This indicates that for every one standard point increase in academic self-concept, the model predicted an increase of .88 in academic achievement.
Table 4.31

Regression Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Constant)</td>
<td>-3.17</td>
<td>.31</td>
<td>-10.06</td>
<td>.00</td>
</tr>
<tr>
<td>Self-Concept</td>
<td>.88</td>
<td>.08</td>
<td>.48</td>
<td>10.18</td>
</tr>
</tbody>
</table>

a. Outcome Variable: academic achievement

The results in Table 4.31 indicate that academic self-concept is a significant predictor of academic achievement ($\beta=.48$, $t=10.18$, $P<0.05$) with a constant of -3.17. The regression equation that was generated to predict academic self-concept was; predicted academic achievement = -3.17+ .48 academic self-concept. Therefore academic self-concept is a significant predictor of academic achievement.

The simple regression analysis to determine the extent to which academic self-concept is a predictor of academic achievement established that ASC explains a significant amount of variance in the values of academic achievement. A strong positive correlation was found between academic self-concept and academic achievement ($R=.48$) and the regression model predicted 23.1% of the variance. The model was a good fit for the data ($F_{1,346}=103.73$, $P <0.05$). From the results the research findings rejected the null hypothesis stated that academic self-concept is not a significant predictor pupils’
academic achievement. This means that academic achievement is a critical outcome of pupils’ academic self-concept accounting for 23.1% variance. This is an indication that pupils’ academic self-concept is an important factor in their academic achievement.

c) Discussion of the Results of Academic Self-concept as a predictor of Academic Achievement

This finding was consistent with an earlier study by Guay, Ratelle, Roy and Litalien (2010) who reported that students perceiving themselves as academically competent obtained higher grades because their academic self-concepts led them to be autonomously motivated at school. Further, Deci and Ryan (2002) in their research proposed that a high academic self-concept increases motivation making a student perceive oneself as academically competent. In such a case, positive outcomes are observed including high academic achievement. Their study suggested that the proximal predictor of grades is academic self-concept just as it was in the current study. The findings of the present research were further supported by those reported by Drew and Watkin (2008) who pointed out that academic self-concept enhancement is a significant causal factor for educational achievement. Their sample was First Year University students in Hong Kong enrolled in nursing. Thus despite the course undertaken, level of schooling or cross-cultural effects, academic self-concept did affect academic achievement.

The results of the present research were obtained at specific subject basis. The findings support those of a study by Pinxten, De Fraine, Van Damma and D’Haenens (2010) who using grades 7,8,10 and 12 supported reciprocal effects between academic self-concept
and academic achievement. The relation between academic self-concept and academic achievement was stronger when academic self-concept and achievement measures were assessed on a subject specific level (Marsh & O’Mara, 2008; Marsh, Trautweein, Koller & Baumert, 2006; Valentine et al. 2004).

Contrary to the findings of the present study, Marsh et al. (2005) observed divergent results that academic self-concept did not mediate the relation between academic self-concept and subsequent grades. This may stem from the fact that Marsh et al. (2005) evaluated academic self-concept towards one specific school subject (math) whereas in the current study academic self-concept was assessed in a general way (school level). It is also important to keep in mind that previous studies have similar findings for specific and global measures (Guay, Mageau & Valerand, 2003; Guay, Marsh & Boivin, 2003).

Unlike in the present study, results of a study by Kwena (2007) showed a diffused relationship between academic self-concept and academic achievement in most areas. There was no clear pattern of relationship in terms of direction and even magnitude. Most of it was very weak and non-significant. However, the results were significant when class means were used. Results from the current study showed a positive and significant relationship when class 8 sample was used. Despite the fact that the study was done in an informal settlement, just as in the other studies, the findings suggest that academic self-concept and academic achievement have reciprocal relationships. A high level of one affects the other positively and a low level of one variable affects the other negatively.
4.3.7. Academic Self-concept as a predictor of Academic Engagement

(a) Description of Participants’ Academic Self-concept as a predictor of Academic Engagement

The researcher sought to find out the extent to which academic self-concept is a predictor of academic engagement. To measure academic engagement the questionnaire contained a set of behaviours that indicated the degree to which the pupils were connected to what was going on in their classes, predicting enjoyment of school and preventing absenteeism and dropouts. Pupils were to respond by ticking the degree of agreement which implied whether the behaviour was very true (5), true (4), or it occurred only sometimes (3), or it was not true, (2) or not true at all (1).

The participants’ academic engagement score was used to categorize the respondents having low, average or high level of academic engagement. The cut-off scores of category of low was 1.0 to 2.9, average was 3.0 to 3.9 and high was 4.0 to 5.0. The results are shown in Table 4.32

<table>
<thead>
<tr>
<th>Level of academic engagement</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>7</td>
<td>2.0</td>
</tr>
<tr>
<td>Average</td>
<td>118</td>
<td>32.6</td>
</tr>
<tr>
<td>High</td>
<td>240</td>
<td>65.4</td>
</tr>
<tr>
<td>Total</td>
<td>365</td>
<td>100</td>
</tr>
</tbody>
</table>
It is observed from Table 4.32 that majority of the respondents, 240 (65.4%) were categorized as having high level of academic engagement while 118 (32.6%) were categorized as being average in academic engagement. Only 7 (2.0%) rated themselves as academically disengaged. What the researcher concludes from the results in Table 4.32 is that almost all the pupils, 358 (98%) enjoyed being in school.

**Academic Engagement by Gender**

The participants’ academic engagement score was analyzed by gender to get the range, maximum, minimum, mean, standard deviation, skewness and kurtosis. The results are represented in Table 4.33

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Range</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>176</td>
<td>2.4</td>
<td>2.4</td>
<td>4.4</td>
<td>4.1</td>
<td>.44</td>
<td>.03</td>
<td>-.93</td>
<td>1.09</td>
</tr>
<tr>
<td>Female</td>
<td>191</td>
<td>2.0</td>
<td>3.0</td>
<td>5.0</td>
<td>4.2</td>
<td>.36</td>
<td>.03</td>
<td>-.55</td>
<td>.39</td>
</tr>
</tbody>
</table>

Note: Min-Minimum, Max-Maximum, SD- Standard deviation, SE-Standard error

As shown in Table 4.33 girls are more academically engaged than boys as their mean is 4.2 (SD=.36) while the score for boys is 4.1 (SD=.44). This may indicate that girls have fewer distractions than boys that keep them away from school. Negative skewness of the academic engagement scores indicates a big number of values were above the mean implying that the respondents rated themselves highly. Positive kurtosis indicates that the
scores had extreme values and hence a more peaked leptokurtic distribution which is greater than the normal distribution.

(b) Hypothesis Testing

The sixth objective was meant to determine whether academic self-concept is a predictor of academic engagement among pupils in non-formal primary schools. In line with this objective, it was hypothesized that;

H$_{06}$: Academic self-concept is not a significant predictor of pupils’ academic engagement.

Simple regression analysis was conducted to establish the significant amount of variation in the values of academic self-concept. The results included Model Summary, ANOVA and coefficients. The model summary provided for the correlation coefficient and the coefficient of determination ($R^2$) for the regression model. The results are presented in Table 4.34

Table 4.34

*Model Summary for Regression Equation*

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.34a</td>
<td>.114</td>
<td>.11</td>
<td>.37</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), academic self-concept

From Table 4.34 it is observed that the correlation (R) between academic self-concept and academic engagement was .34. Further an R$^2$ of .11 indicated that approximately
11.4% of the variance of the pupils’ academic engagement could be accounted for by academic self-concept.

Further ANOVA established whether the regression model explained a statistically significant proportion of the variance. It determined the significance of academic self-concept on academic engagement at 0.05 alpha levels. Table 4.35 shows the results of ANOVA in the regression.

Table 4.35

*ANOVA to Show the Significance of Academic Self-concept on Academic Engagement*

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>6.68</td>
<td>1</td>
<td>6.68</td>
<td>46.46</td>
<td>.00b</td>
</tr>
<tr>
<td>1 Residual</td>
<td>50.82</td>
<td>353</td>
<td>.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>57.51</td>
<td>354</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Outcome Variable: Academic Engagement

b. Predictors (Constant), Academic Self-Concept

Results in Table 4.35 indicate that the ANOVA model of academic engagement as a dependent (outcome) variable and academic self-concept as the predictor variable is significant ($F_{1,353} = 46.46, \ P<0.05$).

The coefficient Table 4.36 presents the values of the regression line. The constant of 3.21 is the y-intercept where the academic self-concept score is zero. The slope is .25 which is
the regression coefficient indicating that for every one increase in academic self-concept
the model predicts an increase of .25 in academic engagement.

Table 4.36

Regression Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>3.21</td>
<td>.13</td>
<td>23.80</td>
<td>.00</td>
</tr>
<tr>
<td>Self-Concept</td>
<td>.25</td>
<td>.03</td>
<td>.34</td>
<td>6.81</td>
</tr>
</tbody>
</table>

b. Outcome Variable: Academic Engagement

The results in Table 4.36 indicate that academic engagement is a significant outcome of
academic self-concept (β=.34, t=6.81, P<0.05) with a constant of 3.21. The regression
equation that was generated to predict academic engagement was;

Predicted academic engagement = 3.21+ .34 academic self-concept

Therefore academic self-concept is a significant predictor of academic engagement.
The simple regression analysis to ascertain the extent to which academic self-concept is a
predictor of academic engagement established that academic self-concept explains a
significant amount of variance in the values of academic engagement. A strong and
positive correlation was found between academic engagement and academic self-concept
(R= .34) and the regression model predicted 11.6% of the variance. The model was a
good fit for the data (F, \(1,353=46.46\), P <0.05). From the results the research findings rejected the null hypothesis stated that academic self-concept is not a significant predictor of pupils’ academic engagement. This means that academic engagement is a critical outcome of pupils’ academic self-concept accounting for 11.4% variance. This is an indication that academic self-concept is an important factor in pupils academic engagement.

(c) **Discussion of the Results Academic Self-concept as a predictor of Academic Engagement**

Green, Liem, Martin, Colma, Marsh, McLnermey, (2012) reported similar findings in their study on academic self-concept, motivation and academic engagement of high school students. The interpretation of their findings was that academic self-concept predicted academic engagement and other positive attitudes towards school, classroom participation, homework completion, absenteeism and academic performance. Similarly, the findings of the present research are consistent with Skinner et al. (2009). Their findings posited a continuous impact of component leading to a virtuous cycle when motivated and engaged students are progressively more so or to a vicious cycle when disaffected students become more detached to their school work overtime. The findings further indicated that pupils’ academic self-perceptions together with teacher perceptions contribute to affective value of school.

The findings of the current study do support Ireson and Hallam (2005) assertion that pupils’ self-perceptions contribute to the affective value for school. Pupils’ evaluation of
their work in school contributes to their liking for school. Their research indicated that for pupils’ affective value of school is related to both their general self-concepts in school and their academic self-perceptions and their perceptions of the extent to which teachers display willingness to help them learn and understand. Findings of a research by Ireson and Hallam (2005) showed evidence of a sharp decline in liking for school among the lower attaining pupils whose academic self-concept were equally low, a factor that was not investigated in the present study. An interesting fact which was also not investigated in the current study was that it is not only low performing pupils who complain, but also top performers also argued that teachers do not take time to explain the content in subjects rather they expect them to cover it in a fast pace (Ireson & Hallam, 2001). For these pupils, though their academic self-concept was high, the teachers’ behaviour contributed to their dislike for school.

Consistent with the findings of the current research, a study by Walker, Greene and Mansell (2007) showed that academic self-concept contributed unique variance to predicting meaningful cognitive engagement. These findings were consistent with theoretical predictions by Deci and Ryan (2010). Walker et al. (2007) found that academic self-concept predicted meaningful cognitive engagement which predicted achievement. In line with the findings of the present research, Zeldin and Parajes (2010) study adds to the large volume of findings on the power of beliefs about one’s ability to successfully complete academic tasks. Elliot and Trash (2001) have argued that academic self-concept can be seen as a precursor to achievement which leads to academic engagement and a study by Greene et al. (2004) provides empirical support.
The findings of the current study are consistent with the views of Zimmerman, Bingeheiner and Notaro (2002) and Sellers, Copeland-Linder, Martin and Lewis (2006). They advanced the compensatory model of resilience that demonstrated that the resilience aspect is related to a positive outcome across all levels of academic disengagement. Their study found a significant association between racial discrimination and school engagement. Discriminated African American adolescents had higher academic self-concept, were more academically oriented and were academically persistent in the face of challenges. They tended to achieve in the face of racial obstacles.

Contrary to the findings of the present study that was carried out in the slums, a study by Smalls, White, Chavous and Sellers (2007) found out that racial discrimination was an important risk factor for lower academic engagement. Individuals who experience group devaluation in school develop low self-concepts. The pupils are more likely to disconnect their identity from domains in which they are expected to do poorly in school (Mendoza-Denton, Downey, Purdie, Davis & Pietzak, 2002). The pupils do not identify with the school due to discrimination. This was unlike in the current study where pupils were highly engaged because they felt their teachers valued them and appreciated them for whom they were.
4.3.8 Predictive Model Linking Perceptions of Teachers’ Expectations, Academic Buoyancy, Internal/external Frame of Reference, Academic Achievement and Academic Engagement to Academic Self-concept.

In line with the seventh objective to develop a predictive model linking perceptions of teachers’ expectations, academic buoyancy, internal/external frame of reference, academic achievement and academic engagement to academic self-concept it was hypothesized that;

H$_{07}$: Perceptions of teachers’ expectations, academic buoyancy, Internal/external frame of reference, academic achievement and academic engagement are not significant predictors of academic self-concept.

Multiple regression analysis was conducted to establish the significant amount of variation in the values of academic self-concept. The results included Model Summary, ANOVA and coefficients. The Model Summary provided the correlation coefficient and the coefficient of determination (R$^2$) for the regression model and the results are displayed in Table 4.37

Table 4.37

*Model Summary for Regression Equation*

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.75$^a$</td>
<td>.56</td>
<td>.56</td>
<td>.3</td>
<td>1.93</td>
</tr>
</tbody>
</table>
a. Predictors: (Constant), academic achievement, perception of teachers’
expectations, internal/external frame of reference, academic buoyancy

a. Outcome Variable: self-concept

From Table 4.37 it is observed that the correlation (R) between academic achievement,
academic engagement, perceptions of teachers’ expectations, academic buoyancy,
internal/external frame of reference and academic self-concept was .75. Further when all
variables were put together perception of teachers’ expectations, academic buoyancy,
internal/external frame of reference and academic achievement accounted for $R^2$ of
.567 of the total variation in academic self-concept. Therefore perceptions of teachers’
expectations, academic buoyancy, internal/external frame of reference and academic
achievement are significant predictors of academic self-concept accounting for 56.7% variance.

Further, the ANOVA illustrates whether the regression model explains a statistically
significant proportion of the variance. It was to determine the significance of the study
variables on pupils’ academic self-concept at 0.05 alpha levels as shown in Table 4.38
Table 4.38

ANOVA Showing the Most Significant Study Variables Linked to Academic Self-concept

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>58.56</td>
<td>5</td>
<td>11.71</td>
<td>91.29</td>
<td>.00^b</td>
</tr>
<tr>
<td></td>
<td>1 Residual</td>
<td>348</td>
<td>.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>103.21</td>
<td>353</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Outcome Variable: self-concept
b. Predictors (constant): Perception of teachers’ expectations, academic buoyancy, I/E frame of reference, academic achievement and academic engagement

The ANOVA in Table 4.38 indicates that the model of academic self-concept as an outcome variable and perceptions of teachers’ expectations, academic buoyancy, academic achievement, academic engagement and I/E frame of reference as the predictor variables is significant \( (F_{5,348} = 91.29, \ P<0.05) \).

Further, Table 4.39 displays multiple regression coefficients of the variables. The results of the multiple regression coefficients of the study variables were analyzed and summarized in Table 4.39
Table 4.39

Regression Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>-.33</td>
<td>.24</td>
<td>-1.39</td>
<td>.16</td>
</tr>
<tr>
<td>Perception of Teachers’</td>
<td>.12</td>
<td>.05</td>
<td>2.48</td>
<td>.01</td>
</tr>
<tr>
<td>expectations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic buoyancy</td>
<td>.04</td>
<td>.04</td>
<td>.04</td>
<td>.89</td>
</tr>
<tr>
<td>I/E frame of reference</td>
<td>.73</td>
<td>.04</td>
<td>.63</td>
<td>15.73</td>
</tr>
<tr>
<td>Academic engagement</td>
<td>.10</td>
<td>.05</td>
<td>.07</td>
<td>1.78</td>
</tr>
<tr>
<td>Academic achievement</td>
<td>.00</td>
<td>.00</td>
<td>.08</td>
<td>2.14</td>
</tr>
</tbody>
</table>

a. Outcome Variable: self-concept

From the results in Table 4.39, perceptions of teachers’ expectations (t=2.48, p<0.05) and academic achievement (t=2.14, p<0.05) indicates they are significant predictors of academic self-concept. However, internal/external frame of reference is a more critical predictor (β=.63, t=15.73, p<0.05). The prediction equation is thus stated as:

Academic self-concept = -0.33(Perceptions of teachers expectations) + 0.40(Academic buoyancy) + 0.637(I/E Frame of reference) + 0.076(Academic engagement) + 0.082(Academic achievement).

From the results of the multiple regression analysis, the research findings rejected the null hypothesis stated that perceptions of teachers’ expectations, academic buoyancy, internal/external frame of reference, academic achievement and academic engagement...
are not significant predictors of academic self-concept. However, Internal/External frame of reference, perceptions of teachers’ expectations and academic achievement are the most significant predictors of academic self-concept. This means that they are important in pupils’ academic self-concept formation accounting for 56.7% variance although Internal/External frame of reference is a more critical factor in the formation of pupils academic self-concept ($\beta = .63$, $t (353) = 15.73$, $p < 0.05$; $R^2 = .56$; $F_{5,348} = 91.29$, $P < 0.05$).

4.3.9 Predictive Model Linking Perceptions of Teachers’ Expectations, Academic Buoyancy, Internal/external Frame of Reference, Academic Self-concept and Academic Engagement to Academic Achievement

In line with the eighth objective to develop a predictive model linking perceptions of teachers’ expectations, academic buoyancy, internal/external frame of reference, academic self-concept and academic engagement to academic achievement it was hypothesized that;

$H_{08}$: Perceptions of teachers’ expectations, academic buoyancy, Internal/external frame of reference, academic self-concept and academic engagement are not significant predictors of academic achievement.

Multiple regression analysis was conducted to establish the significant amount of variation in the values of academic achievement. The results included Model Summary, ANOVA and coefficients. The Model Summary provided the correlation coefficient ($R$) and the coefficient of determination ($R^2$) for the regression model and the results are displayed in Table 4.40.
Table 4.40

*Model Summary for Regression Equation*

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std Error of Estimate</th>
<th>R Square Change</th>
<th>F Change</th>
<th>Df 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.50</td>
<td>.259</td>
<td>.24</td>
<td>.86</td>
<td>.25</td>
<td>23.87</td>
<td>5</td>
</tr>
</tbody>
</table>

From Table 4.40 it is observed that the correlation (R) between academic self-concept, academic engagement, perceptions of teachers’ expectations, academic buoyancy, internal/external frame of reference and academic achievement was .50. Further when all variables were put together perception of teachers’ expectations, academic buoyancy, internal/external frame of reference and academic self-concept accounted for $R^2$ of .259 of the total variation in academic achievement. Therefore perceptions of teachers’ expectations, academic buoyancy, internal/external frame of reference and academic self-concept are significant predictors of academic achievement accounting for 25.9% variance.

Further, the ANOVA indicates whether the regression model explains a statistically significant proportion of the variance. It was to determine the significance of academic self-concept on pupils’ academic achievement at 0.05 alpha levels as shown in Table 4.41
Table 4.41

ANOVA Showing the Most Significant Study Variables Linked to Academic achievement

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Regression</td>
<td>89.77</td>
<td>5</td>
<td>17.95</td>
<td>23.87</td>
<td>.00</td>
</tr>
<tr>
<td>Residual</td>
<td>256.45</td>
<td>341</td>
<td>.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>346.23</td>
<td>346</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Outcome variable: academic achievement


The ANOVA in Table 4.41 indicates that the model of academic achievement as an outcome variable and perception of teachers’ expectations, academic buoyancy, academic self-concept, academic engagement and I/E frame of reference as the predictor variables is significant ($F_{5,341} = 23.87$, $P<0.05$).

Further, Table 4.42 presents multiple regression coefficients of the study variables. The results of the multiple regression coefficients of the variables were analyzed and summarized in Table 4.42.
Table 4.42

Regression Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>-4.69</td>
<td>.59</td>
<td>-7.85</td>
<td>.00</td>
</tr>
<tr>
<td>Perception of teachers’</td>
<td>.08</td>
<td>.12</td>
<td>.03</td>
<td>.67</td>
</tr>
<tr>
<td>Expectation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Buoyancy</td>
<td>.15</td>
<td>.11</td>
<td>.08</td>
<td>1.35</td>
</tr>
<tr>
<td>I/E Frame of Reference</td>
<td>.32</td>
<td>.14</td>
<td>.15</td>
<td>2.20</td>
</tr>
<tr>
<td>Academic Engagement</td>
<td>.12</td>
<td>.14</td>
<td>.05</td>
<td>.89</td>
</tr>
<tr>
<td>Academic Self-Concept</td>
<td>56</td>
<td>.13</td>
<td>.30</td>
<td>4.38</td>
</tr>
</tbody>
</table>

As summarized in Table 4.42, internal/external frame of reference (t=2.20, p<0.05) and academic self-concept (t=4.38, p<0.05) are significant predictors of academic achievement. In spite of this, academic self-concept is a more critical predictor (β=.30, t=4.38, p<0.05). Therefore the multiple regression model equation is stated as:

Academic achievement= -4.69(Perceptions of teacher expectations+.08Academic buoyancy+.15I/E frame of reference+.05Academic engagement+.30Academic self-concept).

The results of the multiple regression analysis, therefore, rejected the null hypothesis stated that perceptions of teachers’ expectations, academic buoyancy, Internal/external frame of reference, academic self-concept and academic engagement are not significant predictors of academic achievement. However, academic self-concept and
Internal/external frame of reference are critical predictors of pupils’ academic achievement accounting for 25.9% variance. This is an indication that academic self-concept and internal/external frame of reference are important factors in pupils academic achievement ($\beta = .30$, $t (346) = 4.38$, $p < 0.05$; $R^2 = .25$; $F, _{5,341} = 23.87$, $P < 0.05$).
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

This chapter is presented in three parts. The first section summarizes the findings of the study and the second section presents conclusions based on the findings. The third section highlights recommendations as they relate to education stakeholders, policy makers and further research.

5.2. Summary of the Findings

The ultimate goal of the study was to discuss perceptions of teachers’ expectations, academic buoyancy and internal/external frame of reference as predictors of pupils’ academic self-concept and in turn academic self-concept as predictors of achievement and academic engagement. These issues were examined from an academic process model focusing on Carl Rogers’ theory of personality development giving rise to academic self-worth and personality development.

In summary the first objective of the study was to describe the extent to which perceptions of teachers’ expectations predict pupils’ academic self-concept. Empirical evidence for the existence of perceptions of teachers’ expectations as a significant predictor of academic self-concept was provided. Data on perceptions of teachers expectations revealed that majority of the pupils felt that teachers viewed their academic
ability as average and about one third of the study sample reported that teachers viewed their academic ability as high. The female respondent scores in perceptions of teachers’ expectations were higher than those of boys. Simple regression analysis established that perceptions of teachers’ expectations explain a significant amount of variance in pupils’ academic self-concept ($\beta=.32, t (353) =6.45, p <0.05; R^2=.10, R^2_{adj}=.10; F, 1,353=41.71, P <0.05$).

The second objective of the study was to establish whether academic buoyancy predicted academic self-concept. About half of the respondents were categorized as being average in academic buoyancy while one third had a high level of academic buoyancy. Girls were more academically buoyant than boys. Finally, a simple regression analysis established that academic buoyancy explains a significant amount of variation in pupils’ academic self-concept ($\beta=.38, t (353) =7.79, p <0.05; R^2=.14, R^2_{adj}=.14; F, 1,353=60.77, P <0.05$).

The third objective of the study was to determine how pupils’ internal/external frame of reference predicted their academic self-concept. Majority of the pupils rated themselves as average in internal/external frame of reference while a small group rated themselves as high and a very small cluster rated themselves as low in internal/external frame of reference. The male gender was superior over the female gender. A simple regression analysis established that internal/external frame of reference explains a significant amount of variation in pupils’ academic self-concept ($\beta =.73, t (352) =20.15, p <0.05, R^2=.53, R^2_{adj}=.53, F, 1,353=406.12, P <0.05$).
The fourth objective of the study was to test if there are any gender differences in academic self-concept and academic achievement. Analysis on academic self-concept revealed a social desirability effect of self-ranking by the pupils as they tried to avoid lower steps giving rise to negatively skewed distributions in most areas with a negative kurtosis in all subjects. The male respondents had a higher academic self-concept than the females. However, girls’ self-evaluation was higher in languages, both English and Kiswahili. Academic self-concept in Mathematics, Science and Social Studies/Religious Education was higher for boys. A t-test for independent samples established a significant gender difference in academic self-concept and this difference was in favour of boys (t=2.75, df=353, sig.(2-tail=.006), p <0.05) but no gender difference in academic achievement (t=.97, df=348, sig.(2-tail=.33), p>0.05).

The fifth objective of the study was to investigate whether academic self-concept was a predictor of academic achievement. About half of the respondents were categorized as average in academic achievement, while slightly more than half were categorized as average in academic self-concept. About one third of the pupils rated themselves as high in academic achievement. Another small group of participants were categorized as low in both academic achievement and academic self-concept. A simple regression analysis established that academic self-concept predicted a significant amount of variance in academic achievement ($\beta = .48$, t (346) =10.18, p <0.05; $R^2=.23$, $R^2$adj. =.22; F, $1,346=103.73$, P <0.05).
The sixth objective of the study was to find out whether academic self-concept was a predictor of academic engagement. About two thirds of the respondents reported that they were academically engaged, another one third were categorized as average in their affection for school and only less than ten pupils reported they were academically disengaged. Girls were more academically engaged than boys. A simple regression analysis established that academic self-concept explains a significant amount of variation in pupils' academic engagement ($\beta = .34$, $t (353) = 6.81$, $p < 0.05$; $R^2 = .11$, $R^2_{adj.} = .11$; $F_{1,353} = 46.46$, $P < 0.05$).

The seventh objective was to develop a predictive model linking perceptions of teachers’ expectations, academic buoyancy, internal/external frame of reference, academic achievement and academic engagement to academic self-concept. A multiple regression analysis was computed to find out which variables viz; perceptions of teachers’ expectations, academic buoyancy, internal/external frame of reference, academic achievement and academic engagement were significant predictors of academic self-concept. It was established that perceptions of teachers’ expectations, academic achievement and internal/external frame of reference as having the greatest influence on academic self-concept ($\beta = .63$, $t (353) = 15.73$, $p < 0.05$; $R^2 = .56$, $R^2_{adj.} = .56$; $F_{5,348} = 91.29$, $P < 0.05$).

The eighth objective was to develop a predictive model linking perceptions of teachers’ expectations, academic buoyancy, internal/external frame of reference, academic self-concept and academic engagement to academic achievement. The researcher further
computed a multiple regression analysis to find out which of the study variables most significantly predicted academic achievement. It was established that internal/external frame of reference and academic self-concept were the most significant predictors of academic achievement ($\beta = .30$, $t (346) =4.38$, $p <0.05$; $R^2 =.25$, $R^2_{adj.} =.24$; $F, 5,341=23.87, P <0.05$).

5.3. Conclusion

The results of this study presented some evidence of the hypothesized predictions among perceptions of teacher expectations, academic buoyancy internal/external frame of reference, academic achievement, academic engagement and academic self-concept. This study supports the idea that teachers’ expectations when communicated can become a self-fulfilling prophesy for students self-concept. Students with high perceptions were aware of their teachers’ positive views not only of their achievement, but also of their behaviour, interest, participation and motivation in class. When students are constantly being given encouraging messages from their teachers this may be one explanation why students perception of their academic ability was rated as high and average in this study. It is therefore vital for teachers to be aware of the importance of having high expectations for the progress of all students and especially for low achievers or those who present behavioural challenges.

Generally, school experiences and other social interactions of the pupils were found to have a bearing on the pupils’ development of academic self-concept. Therefore, teachers need to be cognizant their role in promoting rather than undermine students’ academic
capability by attending to the daily interactions through which academic self-concept is developed. Since the findings of the study supported Carl Rogers’ theory of personality development, teachers should be sensitive of their critical responsibility in shaping student desirable outcomes. Equally teachers should vehemently discourage feedback that blames students for under achievement.

There was a significant relationship between academic buoyancy and academic self-concept. This then means that children low in academic buoyancy, if not helped to negotiate school challenges, may become educationally retarded hence they under achieve. The study established that consistent under achievement leads to development of a low self-concept of academic ability. This may lead to pupils’ dropout in search of more attractive life outcomes. Pupils’ frustration when not able to bounce back from academic setbacks may be an early indicator of subsequent school dropout. It may also be possible that pupils who are naturally under achievers may deliberately absent themselves from school to avoid the frustrating school environment.

The findings revealed that pupils held a relatively consistent opinion of their ability to bounce back from academic setbacks. This finding has positive implications for use of school-wide systematic interventions designed to bolster the frequency and magnitude to which pupils bounce back from academic setbacks. The findings of the present investigation are not only important for investigators studying academic buoyancy, but are also applicable to teachers interacting with students who are required to efficiently
handle academic setbacks, adversity and challenges since academic buoyancy was found to explain variance in pupils’ academic self-concept.

Internal/external frame of reference was found to be a significant predictor of pupils’ academic self-concept. However, when all the study variables were combined, internal/external frame of reference accounted for more variance in predicting academic self-concept as compared to each variable when studied individually. Internal/external frame of reference was seen as a complimentary factor in the classroom context. Therefore, pupils should be helped to develop and enhance other study strategies studied in this investigation in order to experience success in academics. Parents and teachers should aim at creating a conducive home and school environments which will help students develop proper internal/external frame of reference. Understanding the effects of internal/external principles might help teachers to implement self-concept enhancement programmes that might in turn improve the students’ subsequent academic achievements.

The results of this study demonstrated that bright students may, at times, have average or below average self-concept in their weakest school subject, which may seem contradictory given the high levels of achievement in relation to their peers but not relative to their own performance. (Mui, Yeung, Low & Jin, 2001). A negative consequence of the use of an internal frame of reference for high-ability student could be a pre-mature specialization in the domain that they experienced as their superior domain. Negative attitude and a premature termination of their examination in the domain they experienced as inferior may also be consequences for high-ability students.
In contrast, the current study showed that low achievers may have an average or above average self-concept in their best performing school subject, which may seem paradoxical given their poor performance in that subject. A positive consequence of the use of internal/external frame of reference for low-ability students could be a positive attitude and a continuation of their effort to learn in the domain they experienced as their superior domain. For both groups of students, particularly the weaker students, a grasp of these principles should assist stakeholders in education to give positive criticism to promote positive academic self-concept.

There were discernible and clear-cut relationships between academic achievement and academic self-concept. However, multiple regression analysis gave academic self-concept as the best predictor of academic achievement. This has great implication for the teacher who is always concerned with improving academic achievement for the learner. To improve academic achievement, teachers should endeavour to help the learners to cultivate self-concepts of ability. It is important for teachers and parents to understand the process that lead to development of different academic self-concepts because it was found to have reciprocal relationship with academic achievement.

The lower self-concepts exhibited by girls in mathematics and sciences compared to boys if carried on to higher levels of education, may explain why girls’ performance at secondary and tertiary levels is lower. The social and cultural milieus in which girls are brought up encourage them to work hard in languages in which they displayed higher
academic self-concepts. This may also be explained by developmental psychologists that women are naturally endowed with superior language faculties than men.

Academic self-concept was found to be a significant predictor of academic engagement. It was found that academic engagement could be used to pinpoint students who are at risk of poor school performance. By showing the relevance of education in their lives, teachers and parents may come up with ways of arousing students’ curiosity in academics as well as giving positive criticism in order to raise their expectancy for success. This will help in fostering academic engagement which was found to have a significant and positive influence on academic self-concept. Teachers and parents should engage in practices and processes that result in academically engaged pupils who exhibit a set of behaviours that support achievement, persistence, regular attendance and sustained attention. They should take cognizant of the fact that academic self-concept and achievement may be mediated by academic engagement. Teachers should remember that youth who have strong attachment figures at school are more academically engaged and less likely to engage in delinquent behaviours.

5.4. Recommendations

The following recommendations for policy and further research were made based on the findings of this study:

5.4.1. Policy Recommendations

i. Since perceptions of teachers’ expectations were found to have a significant predictive power on academic self-concept, it is important that teachers be aware
of the influence their actions have on academic self-concept of the learners. Teachers should not label pupils according to teachers’ expectations. School practices aimed at fostering strong and positive academic self-concepts are likely to lead to higher levels of attainment in school related tasks and should therefore be encouraged.

ii. Both in-service and pre-service teachers should be trained to use more positive feedback for students’ academic performance due to the strong positive relation between pupils’ perceptions of teachers’ expectations and academic self-concept. They should frame criticisms positively as feedback conceived to be undesirable can have unfavorable consequences on students’ academic self-concept.

iii. Teachers and families should engage collaboratively to ensure learners stay optimistic, motivated and successful within the school environment. This way every child will have the opportunity to thrive and reach his or her potential in a classroom environment that is supportive, constructive, encouraging and caring.

iv. Since academic buoyancy was found to predict academic self-concept, teachers should provide for adaptation to individual differences which encourages student initiative, urge individual and group participation and stimulate self-involvement. This way, low academic buoyant pupils are assisted to bounce back from academic setbacks and challenges. All these are likely to achieve positive results in both learners’ academic self-concept and academic achievement. Remedial
classes for weak pupils instead of class retention may promote academic buoyancy among pupils.

v. Teachers should try to instill in learners the view that poor performance is a spring board for later accomplishment rather than an indication of low academic ability. Teachers should make low achievers understand that they have an infinite value and this can only be done through a loving relationship. By emphasizing the internal frame of reference to the weak pupils, they will realize that they have a school subject they excel in as compared to other subjects and this will raise their academic self-concept making such pupils more academically engaged.

vi. Schools should create environments that are attractive and motivating to the leaners to want to stay at school and be academically engaged. Children stay away from school because they feel they lack worthwhile incentives to attend school. The school fails to compete with other more powerful attractions outside school. Schools should emphasize use of reinforcement more to mould their learners’ behaviour rather than use of punishments. This will create an environment that is stimulating enough to retain the interest of the learners in school particularly those whose tolerance level is not high.

vii. Frequent public occasions for praise, recognition of student achievement and providing reward for good grades generate pro-school peer culture. This also boosts the academic self-concepts of the pupils.
viii. It is recommended that parents should work hand in hand with teachers in order to
develop positive approach to learners who are vulnerable to engage in low
academic self-concept. Parents should not base love for their children on
performance at school. If they do so their children come to associate love with
ability and therefore self-concept.

ix. Equitable distribution of resources is necessary if education is going to be used as
one of the vices to bridge the gap between the rich and the poor in this country.
Affirmative action may be applied to improve standards of education in non-
formal schools. MOEST should ensure that there is equity in access to same
learning experiences for all primary school pupils.

x. With increased enrolments, more teachers should be employed and posted to the
deserving schools to improve the teacher- pupil-ratio and to reduce overcrowding
in the classrooms. Overcrowding leads to failure in identification of pupils by
teachers. Idleness in the school due to shortage of teachers may be a source of
truancy and academic disengagement.

xi. Practical subjects such as art and craft, music and home science should be re-
introduced into the primary curriculum and be examinable. This would make
school more interesting and relevant. It also implies valuing the individual and an
acceptance that the curriculum must meet the needs of the society and pupils hence raising academic self concepts for those who excel in these practical subjects.

5.4.2. **Recommendations for Further Research**

Based on the above conclusions, the following areas of concern can be considered for further research. The present study provided many new perceptions on the constructs involved in the investigations. The research also extended present understanding of these constructs. However, there were limitations, which have direct bearing on future research that deserve mention.

i. The findings of this study have shown that perceptions of teachers’ expectations, academic buoyancy and internal/external frame of reference have positive and significant predictive value on academic self-concept. Further, the study has established that academic self-concept was a significant predictor of academic achievement and academic engagement. There should be a follow-up study to this one whose purpose is to develop an academic self-concept model based on home-related variables. It may be of interest to take into consideration gender as well as individual teacher characteristics when investigating students’ perceptions of teachers’ expectations.

ii. The second concern to reflect on is that data in this study were derived from self-reports and pupils may have overrated themselves with socially or academically desirable responses. It is important for future researchers to replicate the study
and use data derived from students ratings by significant others, use of interviews and focused groups discussions.

iii. The findings of this study focused on class 8 pupils. Presumably, they were facing a national exam and were motivated academically to graduate from primary to high school. It would be exciting to use participants at various levels of primary school, high school, colleges and universities.

iv. Self-concept in this study was restrained to the academic educational domain only. Future researchers could consider applying the model to co-curricular activities in school such as music, drama and sports.

v. More intense study of this nature could be carried out in other parts of the country especially in formal schools, both rural and urban schools to determine disparities in academic self-concept. Further research, could also focus on other school categories like private schools, boarding schools and schools with special needs.

vi. A similar study should be conducted using some uniform achievement tests marked in a central place to establish better the predicting values of the present study variables. This would improve the reliability and validity of the scores.

vii. Longitudinal data and qualitative research might also offer understanding into the processes important to development of academic buoyancy and academic self-
concept hence achievement and engagement. Data derived from observing pupils’ responses to everyday academic setbacks may suggest direction for future research.

viii. Although data in this research provide clear support for the typical internal/external pattern results with respect to academic achievement and academic self-concept, there is need to find out whether similar frame of reference exists in other areas such as non-academic settings.

ix. The researcher’s final model was built upon theoretical/conceptual perspectives. Future studies should test other alternative models such as one conceptualizing prior academic self-concept as a predictor of subsequent buoyancy, internal/external frame of reference and pupils’ perceptions of teachers’ expectations as well as prior engagement and academic achievement as a predictor of academic self-concept.
REFERENCES


APPENDICES

Appendix A

Letter of Introduction

Dear Head teacher,

I am a doctoral student in the School of Education, Department of Educational Psychology, Kenyatta University. I am writing to request participation of your school in the research study entitled “Predictors and Outcomes of Academic Self-concept among Non-formal Primary School Pupils in Ruaraka Division, Kasarani District, Nairobi County, Kenya”. This research is conducted under my doctoral supervisors, Dr. Tabitha Wang’eri and Dr. Sammy Tumuti. It has been cleared by the National Commission for Science, Technology and Innovation.

A deep understanding of the predictors and outcomes of academic self-concept has the potential to shed light on the pupils’ learning process. The study may also help stakeholders to develop concrete and effective instructional practices and environments facilitating pupils’ learning.

You are assured that no information gathered will be disclosed to anyone who has authority over you. Information gathered will be stored securely and once information has been analyzed all surveys will be destroyed. At no time will actual identity of the participants be disclosed. Thank you.

Sincerely,

Charity C. Nyaga.
Appendix B

Consent Form

Dear participant,

The purpose of this study is to investigate the relationship between predictors and outcomes of academic self-concept among the pupils enrolled in non-formal primary schools. The findings of the study will help the government and other education providers think of ways of enhancing academic self-concept in order to improve academic performance in schools.

I am requesting you to complete the research questionnaire and help in this honourable task. Please remember that all the information will be treated with ultimate confidentiality.

Kindly sign in the space provided if you agree to participate in this study. (…………………). I agree to participate in the study.

Thank you very much for agreeing to participate in the study.

Yours Respectively,

Charity C. Nyaga,
Ph.D. Student, Kenyatta University
Appendix C
Pupils’ Questionnaire

Instructions:

Please read and answer the questions below by ticking (✓) the correct answer and filling in the blank spaces. Do not write your name on the questionnaire.

PART I

Pupils’ Biodata

1. School

2. Is your school GoK funded Yes ------ No----------

3. What is your gender? Female ☐ Male ☐

4. How old are you? ____________________________ years

PART II

Perceptions of Teachers’ Expectations

Tick (✓) whichever is true on how your teacher’s supportive behavior applies to you.
Indicate as follows: 5- Always, 4- Often, 3- Sometimes, 2- Not sure, 1- Never,

<table>
<thead>
<tr>
<th>Teachers’ supportive behaviour</th>
<th>Always</th>
<th>Often</th>
<th>Sometimes</th>
<th>Not sure</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>My teacher</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Often tells students that he/she has expectation of good marks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Praises good performance more than good behaviour</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Is more likely to warn low-performers about bad marks</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. Often asks questions about the subject to check the comprehension</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers supportive behavior</td>
<td>Always</td>
<td>Often</td>
<td>Sometime</td>
<td>Not sure</td>
<td>Never</td>
</tr>
<tr>
<td>-----------------------------</td>
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</tr>
<tr>
<td>5</td>
<td>Often encourages active academic discussion among students</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Pays less attention to small disciplinary problems to students with high academic achievement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Often gives oral quizzes and lets students to answer the questions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Gives learning advise regardless of students disciplinary problems</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Pays less attention to small disciplinary problems with high academic achievement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Pays more attention to students with high academic achievement regardless to her/his disciplinary record</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PART III**

**Academic Buoyancy**

Tick (✓) whichever is true about you in the appropriate column as follows:

**Strongly agree (5), Agree (4), not sure (3), Disagree (2), strongly disagree (1)**

<table>
<thead>
<tr>
<th>Your behaviour</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Not sure</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>When my grades/marks are poor/low I look for help from teachers and classmates</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I feel energized to work hard when my grades/marks are bad</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your behaviour</td>
<td>Strongly agree</td>
<td>Agree</td>
<td>Not sure</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
<td>----------------</td>
<td>-------</td>
<td>----------</td>
<td>----------</td>
<td>-------------------</td>
</tr>
<tr>
<td>3 I never allow myself to get distracted or day dream</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>when I try to study the subject I find difficult</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Even when I fail I never feel like giving up</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 I think I am good at dealing with schoolwork pressures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 I do not let a bad mark affect my confidence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 When preparing for a test I never get anxious/disturbed and I work very hard</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 When coursework is difficult I do not feel like giving up</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Even if I get involved in other activities I try to find time to do my assignments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 I experience pleasure in broadening my knowledge about subjects that appear difficult</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PART IV

Internal/External Frame of Reference

Read the statement describing your ability in the school subjects in Column I and tick (√) whichever is true about you in Column II;

<table>
<thead>
<tr>
<th>True (5). This statement describes me well</th>
<th>Mostly true (4)</th>
<th>Mostly true than false(3)</th>
<th>Mostly false (2)</th>
<th>False (1). Not like me at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>COLUMN I</td>
<td>COLUMN II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----</td>
<td>--------------------------------------------------------------------------</td>
<td>----------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Your ability</strong></td>
<td>True</td>
<td>Mostly true</td>
<td>Mostly true than false</td>
</tr>
<tr>
<td>1</td>
<td>My ability to learn Mathematics is better than the other academic subjects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>My ability to learn English is better than the other academic subjects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>My ability to learn Kiswahili is better than the other academic subjects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>My ability to learn Social Studies and Religious Education is better than the other academic subjects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>My ability to learn Science is better than the other academic subjects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Compared with my friends and classmates I am good in Mathematics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Compared with my friends and classmates I am good in English</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Compared with my friends and classmates I am good in Kiswahili</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Compared with my friends and classmates I am good in Science</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Compared with my friends and classmates I am good in Social Studies &amp; Religious Education</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PART V

Pupils’ Academic Engagement

Take note of the behaviour in column one (I) and circle in column two (II) the number corresponding to your degree of agreement.

**Very true (5), True (4), Sometimes (3), Not true (2), Not true at all (1)**

<table>
<thead>
<tr>
<th>No</th>
<th>COLUMN I</th>
<th>COLUMN II</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Behaviour</td>
<td>(5) Very true</td>
</tr>
<tr>
<td>1</td>
<td>I like coming to school every day because school is one of my favourite places to be</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The first time my teacher talks about a new topic I listen carefully</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>When in class I participate in class discussions or group work</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>It has never occurred to me that I could be absent from school</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I always accept and follow the teachers rules and guidance in the classroom</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I avoid getting into trouble in school</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I get time to discuss academic issues with the school counsellor or other adults other than my parents</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I happily do my homework without being forced by my parents</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I study very hard to make me get the highest pass mark</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I am happy to stay and complete school; I will not drop out of school</td>
<td></td>
</tr>
</tbody>
</table>
Appendix D

Academic Self-Concept Ability Ladders

Instructions

Please read and answer the questions below by filling the blank spaces and locating yourself on the ladders.

SCHOOL ____________________________

GENDER___________________________

In various subjects pupils feel that they have the best abilities or even the worst abilities in specific subjects. Others feel that they have moderate abilities. Below are ability ladders. Locate yourself on these ability ladders by putting a tick (√) on the ladder position which best estimates your ability in each subject. Step 1 indicates the lowest ability whereas step 5 indicates feelings of the highest ability. The middle steps (2-4) indicate increasing moderate ability.

Example:

James Mwenda feels he has high ability in mathematics but not very best. In science he has very low ability, hence in the two ladders representing these subjects he has marked as shown:

Mathematics

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>5</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>√</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Science

<p>| | | | | |</p>
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<thead>
<tr>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>√</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Now locate yourself on the ladders below according to your ability per subject.
Mathematics
5 highest
4
3
2
1 lowest

Kiswahili
5 Highest
4
3
2
1 Lowest

Science
5 Highest
4
3
2
1 Lowest

English
5 highest
4
3
2
1 lowest

Social Studies/ R.E
5 Highest
4
3
2
1 Lowest

Source: Researcher generated 2014
Appendix E

Pupil’s Achievement Pro-forma

Dear class teacher,

Please record in the pro-forma pupils’ academic achievement in your class to include their performance in class 7, 2013, Term I, II and III and while in class 8, 2014, Term I and II. Enter the average mark for the two years as indicated in the pro-forma below.

<table>
<thead>
<tr>
<th>Admission Number</th>
<th>Class 7, 2013</th>
<th>Class 8, 2014</th>
<th>Average Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Term I</td>
<td>Term II</td>
<td>Term III</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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Appendix F

Approval of Research Proposal

KENYATTA UNIVERSITY
GRADUATE SCHOOL

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

FROM: Dean, Graduate School
TO: Charity C. Nyasa
C/o Educational Psychology Dept.

DATE: 25th June, 2014

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

This is to inform you that Graduate School Board, at its meeting of 11th June, 2014, approved your Research Proposal for the Ph.D Degree Entitled, “Predictors and Outcomes of Academic Self-Concept among Non-Formal Primary School Pupils in Ruaka Division, Nairobi County, Kenya.”

You may now proceed with your data collection, subject to clearance with the permanent Secretary, Ministry of Higher Education, Science and Technology.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking Forms per semester. The form has been developed to replace the Progress Report Forms. The Supervision Tracking Forms are available at the University’s Website under Graduate School webpage downloads.

By copy of this letter, the registrar (Academic) is hereby requested to grant you substantive registration for your Ph.D studies.

Thank you.

DAVID NJOROGE
FOR DEAN, GRADUATE SCHOOL

c.c. Chairman, Department of Educational Psychology

Supervisors:

1. Dr. Tabitha Wang’eri
   C/o Department of Educational Psychology
   Kenyatta University

2. Dr. Sammy Tumui
   C/o Department of Educational Psychology
   Kenyatta University
Appendix G

Research Permit

[Image of Research Permit]

THIS IS TO CERTIFY THAT:

MS. CHARITY CIKUTHI NYAGAH

RUTA UNIVERSITY, 0-60403

Magumoni, has been permitted to conduct research in Nairobi County on the topic: PREDICTORS AND OUTCOMES OF ACADEMIC SELF-CONCEPT AMONG NON-FORMAL PRIMARY SCHOOL PUPILS IN RUARAKA DIVISION, NAIROBI COUNTY, KENYA

for the period ending: 30th December, 2014

Permit No: NACOST/P/14/1821/2575
Date of Issue: 3rd September, 2014
Fee Received: Ksh 2,000

Applicant's Signature

Secretary

National Commission for Science, Technology & Innovation

[Signature]
Appendix H

Research Authorization

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471, 2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

Ref: No.

NACOSTI/P/14/1821/2575

Charity Ciakuthii Nyaga
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “Predictors and outcomes of academic self-concept among non-formal primary school pupils in Ruaraka Division, Nairobi County, Kenya,” I am pleased to inform you that you have been authorized to undertake research in Nairobi County for a period ending 30th December, 2014.

You are advised to report to the County Commissioner and the County Director of Education, Nairobi County before embarking on the research project.

On completion of the research, you are expected to submit two hard copies and one soft copy in pdf of the research report/thesis to our office.

DR. S. K LANGAT, OGW
FOR: SECRETARY/CEO

Copy to:

The County Commissioner
The County Director of Education
Nairobi County.

## Appendix I

### Kasarani District KCPE Analysis, 2014

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Source: District Education Officer, Kasarani District
Appendix J

Area of Study - Map of Nairobi County

Source: http://iwebz-kenya.com/moh/nairobi-county-map/

The area of study was Nairobi County. Nairobi City County is also the Capital city of Kenya with an estimated population of 3.138 million (Kenya National Bureau of Statistics (KNBS, 2010), seated on an area of 696Km$^2$ and was founded in 1899. It is one of the fourty seven counties in Kenya and it is boardered by Kiambu, Machakos and Kajiado counties. There are seventeen subcounties and several wards within these sub-conties. At the commencement of the study Ruaraka Division was part of Kasarani District which was before the pulmagation of the New constitution of Kenya (2010). They have since been renamed as Ruaraka Constituency and Kasarani Constituency.