

**SOCIAL DETERMINANTS OF GENDER DIFFERENCES IN
PERFORMANCE IN KENYA CERTIFICATE OF SECONDARY
EDUCATION IN KERICHIO AND KIPKELION DISTRICTS,
KENYA**

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.



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DEDICATION

To my spouse Grace

For her friendship and support

To my children

Nina, Naima and Mhuru Junior

For their understanding and prayers

To my parents

For their inspirations

To my uncle Solomon Mubiri

For his believe in the pursuit of academic excellence

And

To all my siblings

For their encouragement

ABSTRACT

This study aimed at finding out the social determinants of gender differences in KCSE performance in Kericho and Kipkelion Districts, Kenya. The study sought to explore the influence of the different male and female students' school and societal socialisation experiences on their academic performance. The study used descriptive research design and two questionnaires for data collection. The reliability of the data collection instruments was 0.81 for the students' questionnaire and 0.76 for the teachers' questionnaire. Descriptive statistics was used in data analysis.

The major findings of the study were that gender stereotypes, peer group culture and family socialisation were the most significant determinants of gender differences in academic performance. The study also found out that the type of school attended affected students' academic performance as only 8.1 percent of the female respondents managed to get grade C⁺ and above from mixed schools, and 31.4 percent of girls were from girls' single sex schools. Patriarchy was also found to have an influence on gender difference in KCSE performance as majority of the respondents at 67.5 percent attributed girls' poor performance to patriarchal socialisation which encouraged boys to academic superiority. Social classroom interaction was also found to affect male and female students' academic performance as majority of the respondents indicated that during these interactions, girls were socialized into believing in male students' academic superiority.

The study's major recommendations were that the Ministry of Education and all the stakeholders should encourage the introduction of more single sex schools and a mechanism should be put in place to phase out mixed sex schools since they limited male and female students potential academically. The Kenya Institute of Education (KIE) should initiate a revised curriculum that incorporates a subject on gender studies in secondary schools. The Ministry of Education should also put proper structures in place to implement various government policies on gender, which have largely not been implemented. School Boards of Governors (BOGs), Parents Teachers Associations (PTAs) and community leaders should always give priority to gender issues in their school meetings. The Ministry of Education should also fully implement the program of re-inducting the teachers who are already in the field in order to reduce gender differences in academic performance.

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LIST OF ABBREVIATIONS AND ACRONYMS

AAUW	American Association of University Women
AEO	Area Education Officer
BOG	Board of Governors
DEO	District Education Officer
FAWF	Forum for African Women Educationalists
FEMNET	African Women Educationists
FEMSA	Forum for African Women Educationists
IQ	Intelligent Quotient
KCSE	Kenya Certificate of Secondary Education
KNEC	Kenya National Examinations Council
MOE	Ministry of Education
NGO	Non-Governmental Organisation
PTA	Parents Teachers Association
SMI	Science Mathematics and Technology
UN	United Nations
UNESCO	United Nations Educational Scientific and Cultural Organisation
UNICEF	United Nations Children's Fund

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Education is the single major factor that can narrow social and gender imbalance in all areas of development. Although the number of educated children in the world has grown in the past 40 years, boys have proportionately fared much better than girls. In the year 2000, 105 million children worldwide were not enrolled in primary school. This number had declined to 72 million by 2007 and about 39 million of these were girls. This can be attributed to such factors as customary attitudes, child labour, early marriages, lack of funds and lack of adequate schooling facilities, teenage pregnancies and gender inequalities in society at large. The percentage of girls enrolled in secondary school remains significantly low in many countries (UNESCO, 2010).

The overall situation in the education sector in Kenya and Sub-Saharan Africa as a whole, reveals that females are disadvantaged at all levels of education in terms of access, participation, completion and performance (FAWE, 2003; MoE, 2007). Improving access to education has been accorded a high priority in the policies of most third world countries, which clearly reflects the global recognition of the contributions that only education makes to development (UNESCO, 2010).

Many times, girls are often not encouraged or given the opportunity to pursue scientific and technological training and education, which limits the knowledge they require for their daily lives. In many cases, girls start to undertake heavy domestic

chores at a very early age and are expected to manage both educational and domestic responsibilities, often resulting in poor scholastic performance and early drop-out from schooling (UNESCO, 2010). Equally, through socialisation, girls learn and internalize subservient beliefs, values and attitudes against women (MoI., 2007).

According to Economic Survey (Republic of Kenya, 2007), gender disparity existed in education generally, and that there was need to identify and eliminate all policies that hinder girls' full participation in education. The imbalance in boys' and girls' participation in schooling was therefore linked to the age-long belief in male superiority and female subordination (MoE, 2007). This situation was aggravated by patriarchal practices which gave girls no traditional rights to succession. Therefore, the same patriarchal practices and socialisation encouraged preference to be given to the education of a boy rather than that of a girl (Kitetu, 1998).

Up to the year 2004, considerably more boys than girls participated in education in Kenya. The Kenyan woman, like her sisters in other parts of Africa, had more than her fair share of obstacles to overcome. Traditions in patriarchal society were major constraints (MoE, 2007). She had to overcome the traditions whose philosophy was that a woman's place is at home. Families also influence the students' outcomes in terms of gender academic performance through socialisation and the family structure (UNESCO, 2003). However, with the government's intervention and public awakening, parents are now sending their girls to school (Mareng, 2010).

The enrolment in Kenya secondary schools increased by 14.6 percent from 1,030,080 in 2006 to 1,180,300 in 2007. This enrolment did not bring about a leap in performance for girls (Republic of Kenya, 2007; Kenya National Examinations Council, 2007). While increased enrolment rates are a positive fact, the quantitative increase in the enrolment of girls in secondary schools is not matched by qualitative improvement which can be assessed by examining girls' performance in the Kenya Certificate of Secondary Education where they lag behind boys (Kenya National Examinations Council, 2008).

Table 1.1 shows the enrolment of students at the KCSE examinations from 2007 to 2011.

Table 1.1

Candidature for KCSE examination from 2007 to 2011 in Kenya

Gender	Year				
	2007	2008	2009	2010	2011
Male	147,400 (54%)	163,369 (54%)	182,475 (55%)	196,208 (55%)	228,497 (56%)
Female	124,291 (46%)	138,031 (46%)	151,341 (45%)	158,133 (45%)	182,089 (44%)
Total	271,691	301,400	333,816	354,341	410,586

Source: Kenya National Examinations Council, 2012

The results of Table 1.1 show that girls' enrolment in KCSE had grown although this was not reflected in their academic performance. Out of thirty one (31) subjects offered in 2010 KCSE examination, girls performed better than boys in only four (4) subjects. These were English, Kiswahili, Home Science and Art and Design. The number of girls taking Physics and all vocational subjects except Home Science, was comparatively lower for 2009 and 2010 when compared to that of boys. Male candidates performed better than female candidates in all the remaining twenty seven (27) subjects. In the 2010 KCSE examination, no female candidate sat for the Woodwork and Electricity examinations (Kenya National Examinations Council, 2012). Girls gender stereotypes, classroom socialisation and peer culture have been found to influence gender difference in academic performance (Steel, Spencer & Aronson, 2002, Bakare-Yusufu, 2003). Table 1.2 shows the national trends in KCSE performance by gender between 2007 and 2011.

Table 1.2

National trends in KCSE performance by gender 2007-2011

KCSE GRADE	2007		2008		2009		2010		2011	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
A_A-	4,449 (75%)	1,582 (25%)	3,702 (65%)	2,076 (35%)	3,704 (68%)	1,688 (32%)	5,359 (60%)	2,772 (34%)	7,637 (60%)	3,388 (31%)
B+_B	16,107 (69%)	7,184 (31%)	14,719 (65%)	8,015 (35%)	13,962 (66%)	8,118 (34%)	21,336 (67%)	10,674 (33%)	25,941 (66%)	13,399 (34%)
B+_C+	30,483 (58%)	21,906 (42%)	25,689 (58%)	18,248 (42%)	30,483 (59%)	20,913 (41%)	34,605 (60%)	21,488 (40%)	40,818 (58%)	28,511 (41%)
C+_D+	62,482 (52%)	57,900 (48%)	67,340 (54%)	58,152 (46%)	70,327 (54%)	66,030 (46%)	83,004 (54%)	60,937 (46%)	93,679 (54%)	78,988 (46%)
D+_D-	32,147 (49%)	34,067 (51%)	47,554 (60%)	48,138 (60%)	49,802 (60%)	51,491 (60%)	49,777 (51%)	48,291 (49%)	56,737 (51%)	54,921 (49%)
E	1,510 (51%)	1,442 (49%)	3,665 (52%)	3,402 (48%)	3,037 (51%)	2,881 (49%)	3,237 (52%)	2,971 (48%)	1,684 (56%)	2,911 (44%)
Total	147,488 (54%)	124,291 (46%)	163,309 (54%)	138,831 (46%)	182,479 (55%)	191,341 (48%)	196,288 (55%)	198,133 (49%)	228,497 (56%)	183,889 (44%)
Grand Total	271,691		301,480		333,816		354,341		410,586	

Source: Kenya National Examinations Council (KNEC), 2012

Table 1.2 shows the number of candidates by mean grade attained in KCSE from 2007 to 2011 by gender and mean grade. The results show that boys who scored grades 'B' to 'A' were double the number of girls from 2007 to 2011. The number of boys who qualified for the Joint Admission Board (JAB) was also higher than that of girls during the previous five years. The results then show a major disparity in academic

performance between boys and girls in the national examinations. In the year 2010, students who scored grade C+ and above, which is the minimum requirement for admission to public universities in the country were 97,134. Only 36,934 of the students were females representing 38% of the students with the minimum university entry qualifications.

When students move from secondary school to the university, the gender gap in enrolment severely widens as shown in the Table 1.3

Table 1.3

Student enrolment by gender in public universities, 2007-2012

Public Universities	2007/2008		2008/2009		2009/2010		2010/2011		2011/2012	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Mandhi	23,511	12,826	24,162	13,253	27,159	14,201	31,237	18,127	27,084	17,219
Karunya	10,172	8,425	10,652	8,713	15,613	10,876	18,739	13,793	21,328	15,893
Man	8,674	6,158	8,982	6,379	13,600	6,699	11,961	9,143	14,124	11,409
Egerton	8,262	4,205	8,677	4,411	9,036	4,451	8,163	4,411	7,050	5,093
Jomo Kenyatta	5,450	2,512	5,723	2,594	6,510	3,206	6,095	2,711	9,818	4,119
Mandau	1,487	2,199	3,603	2,257	3,311	2,176	6,677	1,927	2,809	1,742
Mumukhi Mitalu	946	278	965	284	4,119	2,584	1,400	2,320	10,958	6,402
Kenya Poly Univ	-----	-----	-----	-----	6,721	4,211	850	135	187	642
Mombasa Poly Univ	-----	-----	-----	-----	3,520	3,541	2,828	1,226	1,000	1,018
Total	88,984	36,684	62,753	37,896	89,611	52,346	85,931	51,839	94,398	63,558
	62%	38%	62%	38%	63%	37%	61%	39%	68%	48%
Grand Total	97,188		101,647		142,546		139,770		157,914	

Source: Ministry of Education, 2012

The analysis of the Table 1.3 shows that female students at all the national public universities were underrepresented as they were fewer than male students. The female students were less than 40% of the total number of the students admitted at the public universities between 2007 and 2012. In the 2008/2009 university admission through the Joint Admission Board (JAB), out of 16,629 students admitted only 5,228 were female. The university enrolment is done on merit according to how one performs at the KCSE examination, which has a direct implication on the university entrance. The 5,228 female students admitted include students admitted under the affirmative action. Those are students admitted with lower points than their male counterparts. This shows that fewer female students had attained the required grades in their KCSE examination to be admitted to the universities through the Joint Admission Board.

The result of heavy investment in secondary education is good performance by the students in KCSE examination. Good performance is necessary for selection and placement of students in institutions of higher learning and jobs in various firms. Good performance is also crucial for admission into competitive courses in the public universities. All the courses require at least an overall grade C+ for admission to the universities besides, good grades are required for specific clusters where a student is required to get high grades in specific key subjects (Siringi, 2009). Poor performances in KCSE undermines students chances of joining institutions of higher learning and consequently jeopardizing their opportunities for job placement and often reducing their chances for self reliance economically. The gender gap is minimal at the primary school level compared to the secondary level. However, the cultural expectations of

the process of sexual maturation in adolescence affect girls' performance much more than boys in secondary levels. This is one of the reasons why as one moves up the educational ladder, the gender gap in academic achievement widens (Babendreich, 2004). According to McConnell (2005) girls may underperform in a mixed classroom due to peer pressure from boys. Coeducational schools also reinforce gender stereotypes that affect students' performances (Davila, 2004).

According to Kimanthi (2005), it would be wise to separate girls and boys so that they are able to concentrate on their studies. Harker (2000) in a study in New Zealand found out that girls tend to shy away from answering questions especially in Science and Mathematics classes because they feared boys who were seen as being better than them in class. Boys and girls feel free on their own and are able to compete by themselves (Calls, 2003). Equally, in a study on single gender education conducted by American Association of University Women (AAUW, 1998) it was found that in most cases, females' confidence increased in a single-gender setting. Hence, the type of school attended was a social determinant of gender difference in academic performance.

This research then focuses on the social determinants of gender differences in academic performance in secondary schools in Kericho and Kipkelion districts. The two districts are both rural and the schools therein have most profound characteristics of the social determinants of gender differences in academic performance, with female students' transition rate to the university being below 35 percent per year. The major

assumption is that although there has been a quantitative improvement in the enrollment of girls in secondary schools, there is a continued major gender difference in performance in KCSE examination (Kenya National Examinations Council, 2008)

1.2 Statement of the problem

Gender differences in performance in national examinations remain a challenge. The available data shows that female representation at the points of exit from primary school and entry into secondary school is nearly proportional to that of males (Republic of Kenya, 2007). Gross female under representation in post secondary education, therefore, points to the existence of deep rooted and seemingly insurmountable barriers in secondary schooling process and outcomes. It also points at the low impact of intervention policies to improve gender equity at this level.

Although the disparity between the enrolment of girls and boys in primary school has narrowed since 1960s the number of girls who enroll in higher education institutions continue to lag behind that of boys throughout the country (Republic of Kenya, 2006). In Kericho and Kipkelion districts there has been continued gender disparity in performance in favour of boys. In 2006, out of the 299 students who attained grade B and above in KCSE examination from the top 15 secondary schools in the two districts, 193 (65%) were boys and only 106 (35%) were girls. In many cases teachers tend to encourage boys more than girls, especially in the Science subjects in co-educational schools (Elimu Yetu Coalition, 2003). There is also a high dropout rate of girls in secondary schools in Kericho and Kipkelion districts who account for 44.6

percent against 31.9 percent of boys in the two districts (Republic of Kenya, 2003).

Despite the desirable nationally stated and pursued goal of gender equity in education, females continue to be disadvantaged particularly at the secondary and post secondary levels. Achievement of gender equality in academic performance is therefore a goal in its own right. The main area of concern in gender differences includes peer culture, family factors, persisting negative socio-cultural practices and attitudes which inhibit balanced achievements, gender stereotyping and socio-cultural classroom interactions among many other issues which have not been adequately addressed. It is in the light of this background that an attempt is made to investigate the social determinants of gender differences in students' academic performance in KCSE in Kericho and Kipkelion districts.

1.3 Purpose of the study

The purpose of this study was to investigate the social determinants of gender differences in KCSE performance in Kericho and Kipkelion districts. The study sought to explore the influence of the different male and female students' school experiences that affected their academic performance.

1.4 Objectives of the study

The study aimed at achieving the following objectives to:

- (i) determine whether peer culture affect male and female students' performance in Kenya Certificate of Secondary Education

- ii) establish whether social classroom interactions affect male and female student's performance in Kenya Certificate of Secondary Education.
- iii) determine whether family socialization factors affect male and female students' performance in Kenya Certificate of Secondary Education
- iv) determine the influence of gender stereotypes on male and female students' performance in Kenya Certificate of Secondary Education.
- v) examine the influence of patriarchal society on male and female students' performance in Kenya certificate of Secondary Education
- vi) establish whether the type of school attended affect male and female students' performance in Kenya Certificate of Secondary Education

1.5 Research questions

The research addressed itself to the following questions:

- i) What are the effects of peer culture on male and female students' performance in Kenya Certificate of Secondary Education?
- ii) What are the effects of social classroom interactions on male and female students' performance in Kenya Certificate of Secondary Education?
- iii) What are the effects of family socialisation towards male and female students' performance in Kenya Certificate of Secondary Education?
- iv) What are the influences of gender stereotypes on male and female students' performance in Kenya Certificate of Secondary Education?
- v) What are the influences of patriarchal society on male and female students' performance in Kenya Certificate of Secondary Education?

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- v) What are the influences of patriarchal society on male and female students' performance in Kenya Certificate of Secondary Education?

- vi) What are the effects of the type of schools attended on male and female students' performance in Kenya Certificate of Secondary Education?

1.6 Significance of the study

This study may be significant since there have been no scholarly research addressing social determinants of gender differences in academic performance in Kericho and Kipkelion districts. At the level of policy formation and implementation it is hoped that the findings of this study may provide concrete evidence to guide policy makers and teachers in their effort to reduce gender differences in academic performance in secondary schools in Kenya. The study may also contribute to the enrichment of the existing knowledge in the area of social determinants of gender differences in academic performance in secondary schools. Some contents that bring about gender disparity in academic performance may be omitted from the curriculum in order to bring about gender parity. This may be used for early intervention in curriculum organization in Kenyan schools. Because learning is inherently a social event, teachers can promote the positive aspects of socialisation and use them more proactively toward student learning. Gender identity through socialisation played a role in the students' gender difference in curriculum choices. The study may then contribute to theory and practice of curriculum development in Kenya, as it will add a new insight into classroom social interaction between teachers, students and the classroom outcome.

1.7 Delimitations of the study

This study was confined to Kericho and Kipkelion districts, Rift Valley Province that have both urban and marginalized rural areas. The study focused on the social determinants of gender differences on students' academic performance by looking at their school experiences and stereotypes upheld by the society. It was also confined to Form Four students and teachers in the two districts. Hence, the findings of this study can be generalised to the rest of the country with caution.

1.8 Limitations of the study

The limitation of this study arose from the inability of the researcher to investigate all the possible secondary school based determinants of gender differences in academic performances like poverty, lack of learning facilities and teachers. It was however important to note that all the social determinants variables chosen in this study were significant. The variables could generate useful knowledge about the social determinants of gender difference in academic performances. The limitations of the study also arose from the descriptive design used. In descriptive study, the investigator might draw causal inferences when none is possible. According to Grims and Schulz (2012) the limitation can arise whereby a temporal association is incorrectly inferred to causal one which is referred to as post hoc ergo propter reasoning. But this did not affect this study as the researcher utilised the design on the basis of its strength and was also able to draw conclusions from the data collected from the field.

1.9 Assumptions of the study

The following assumptions were made for the purpose of this study:

- (i) That the information given would reflect the true report of the male and female students' interaction in class.
- (ii) That the teachers were well informed and that they had an understanding of the problems that affect male and female students' academic performance in their schools
- (iii) That the Kenya Certificate of Secondary Education was valid and reliable

1.10 Definitions of significant terms

Academic performance: refers to the ability to study and remember facts and being able to communicate verbally or down on paper

Culture: refers to a distinctive pattern of ideas, beliefs and norms which characterize the way of life and relations of a society or groups within the society. These patterns include customs and traditions culturally determined gender ideologies and define rights and responsibilities and what is appropriate behaviour for women

Determinants: refers to influencing or a factor that decisively affects the nature or outcome

Family socialisation: refers to teaching of members of the family the rules and expectations for behaviour within the society through direct teaching, modeling or through observation

Gender: refers to social categorisation of people based on their sex.

Gender discrimination: refers to giving differential treatment to individuals on the

grounds of their gender, without any rational explanations or empirical reasons

Gender division of labour: refers to an overall societal pattern where women are allotted one set of gender roles and men allotted another set

Gender roles: refers to a set of social and behavioural norms that are considered socially appropriate for individuals of a specific sex in the context of a specific culture

Interaction: refers to a kind of action that occurs as two or more objects have an effect upon one another. This is action between teachers and students and among students' themselves.

Kenya Certificate of Secondary Education: refers to the national examination administered at the end of the four years of secondary education in Kenya.

Patriarchal society: refers to social a system in which the male acts as the primary authority figure central to social organisations and where men hold authority over women, culture and property

Peer culture: refers to a set of social rules, activities and behaviour routines that members of the group engage in and that all members of the group recognize.

Sex: refers to being male or female in the biological sense.

Single Sex Schools refers to the practice of conducting education where male and female students attend separate classes.

1.11 Organisation of the study

The study is organised into five chapters. The first chapter deals with the introduction of the study. It highlights the background and statement of the problem under study, purpose, objectives and research questions, significance of the study, delimitations and

limitations, basic assumptions of the study and definitions of the significant terms

Chapter two of this study deals with literature review. The related literature was reviewed under various sub-topics. These subtopics cover gender socialisation and personality development, peer culture in relation to academic performance, male and female students' classroom socialisations and interactions, family factors, gender stereotypes, patriarchal society, coeducational and single sex schools, and conceptual framework.

The third chapter covers the research methodology to be employed. This is under research design, target population, sample and sampling procedure, data collection and data analysis techniques. This chapter also deals with research instruments to be used, their validity and reliability.

Chapter four presents data analysis and discussions of the findings. Data analysis was organized in various tables, pie charts and bar charts. The last chapter focuses on the summary of the study findings, conclusions and recommendations stemming from the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

This Chapter covers a review of various texts, publications and other documented materials that are considered important to this study. It also helps in finding out the gender differences in academic performances in Kericho and Kipkelion districts. The related literature is discussed under socialisation and personality development, the classroom interaction, types of school attended, teachers' attitude towards students' performance, theoretical perspective and conceptual framework

2.2 Gender socialisation and personality development

Socialisation is the process by which a culture "teaches" its members to function in socially acceptable ways. To socialise someone is to train that person to behave appropriately (Leaper, 2002). But socialisation is also the way we learn how to perceive our world, how to interact with others; what it means to be male or female; how, when and why; what we should and should not do to and for others under certain circumstances, what our society defines as moral and immoral, and so on. Socialisation is necessary because humans do not have instincts which dictate given behaviours for particular situations; they have to learn how to feel, think and behave in various settings. This process takes place through the influence of parents, media, peers, schools and religion. Socialisation is actually a lifelong process, but is viewed as particularly important during childhood and adolescence because of the relative plasticity in development (Wood & Eagly, 2002).

During socialisation individuals learn what behaviour is appropriate in their culture. The most important agents of socialisation in the young child's life are his parents, later peers, teachers and communication media becomes important agents (Wood & Eagly, 2002). Schools have important socialising influences on adolescents in two ways. First, they provide the physical environment in which adolescents spend most of their time and that is the center of the peer culture. Second, schools provide formal education (Wood & Eagly, 2002). The most important outcome of the socialisation process is the development of a sense of self. The term self refers to the unique set of traits, behaviours, and attitudes that distinguish one person from another.

The gender socialisation process begins the moment a child is born. A physician, nurse, or midwife immediately starts that infant on a career as a male or female by authoritatively declaring whether it is a boy or girl. In most U.S. hospitals the infant boy is wrapped in a blue blanket and the infant girl in a pink one. From that point on, the developmental paths of American males and females diverge (Sax, 2010). The subsequent messages that individuals receive from families, books, television, and schools not only teaches and reinforces gender-typed expectations, but also influence the formation of their self-concepts. Hence, from the moment of birth, a child's gender influences the opportunities she or he will experience. Within a few years of life, children begin to form their own ideas about gender that subsequently guide the types of activities they practice, what they find interesting, and the achievements they attain. As children develop, their gender self-concepts, beliefs, and motives are informed and transformed by families, peers, the media, and schools. These social contexts both

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reflect and perpetuate gender roles and gender inequities in the larger society (Leaper, 2000; Wood & Eagly, 2002).

With the acquisition of a gender self-concept, children form a social identity of themselves as members of a particular gender group (Harris, 1995; Turner, 2000). As emphasised in social identity or self-categorisation theories, being a member of a group typically leads to an in-group bias. Accordingly, several experimental studies have documented that children are more likely to pay attention to objects, activities, behaviours, and social roles associated with their own gender. Conversely, children avoid and devalue what is specifically associated with the other gender. Children's in-group biases are further reflected in their preferences for same-gender peers and avoidance of other-gender peers (Martin, Ruble & Szkrybalo, 2002).

According to Bussey and Bandura (1999) children internalise the culture's notions of gender once they acquire a symbolic capacity. As children form cognitive representations of gender, or gender schemas, they begin to filter the world through a gender lens. This is a fundamental premise of cognitive–developmental theory, gender schema theory, social cognitive theory, social identity theory, and self-categorisation theory (Bussey & Bandura, 1999, Martin et al, 2002; Turner, 2000). As each of these theories emphasises, children play an active role in their gender development and a process of self-socialisation ensues. Girls and boys make inferences about the meaning and the consequences of gender-related behaviours from their observations and social interactions. Also, children's gender schemas and attitudes influence the type of

information they notice and remember. Consequently, girls and boys tend to seek out gender-typed environments that further strengthen their gender-typed expectations and interests. In these ways, children's behaviour becomes increasingly regulated by internal standards, values, and perceived consequences (Bussey & Bandura, 1999).

According to Martin et al (2002) children's acquisition and development of gender-related cognitions tends to follow a systematic pattern. Children are capable of making perceptual distinctions between gender-linked physical attributes—such as faces and possibly even some gender-typed objects—as they approach one year of age. Verbal indications of a gender concept appear around two years of age when children begin to use gender to label other people (i.e., gender labelling). This is followed around three years when children demonstrate knowledge of their own gender (i.e., gender identity). Awareness of one's gender-group membership also becomes the basis of a social identity. That is, children see themselves as belonging to their gender group. Between three and six years of age, children's concepts of other people's and their own gender become increasingly stable and consistent (i.e., gender constancy). During this age period, children also begin to form stereotypes about physical features and activities (e.g., girls wear dresses and boys play with trucks). With more cognitive sophistication, children around 6 years of age additionally tend to stereotype more abstract qualities such as social roles (e.g., men are truck drivers) and psychological attributes (e.g., women are nice). Furthermore, as children mature cognitively, they may show more flexibility in their gender attitudes and inferences during middle childhood and adolescence (Liben & Bigler, 2002). Finally, recent research suggests

that, around 10 years of age, girls can demonstrate awareness of gender discrimination (Brown & Bigler, 2004).

2.3 Peer culture in relation to academic performance

Peer pressure occurs when an individual experiences implied or expressed persuasion to adopt similar values, beliefs and goals, or to participate in the same activities as those in the peer group. Francis (2000) argues that the values of the peer group with whom the high school student spends the most time are a stronger factor in the student's level of academic success than the values, attitudes, and support provided by the family. Compared to others who started high school with the same grades, students whose families were not especially supportive, but who spent time with an academically oriented peer group, attained better grades.

Peer pressure is also a means of reinforcing a culture's traditional gender roles. It can come in the form of taunting or teasing a child who does not fit the traditional gender roles that other children in the peer group have been exposed to, even to the point of excluding that child from group activities (Ashely, 2003).

According to Skelton and Barbara (2006) peers tend to reinforce gender stereotypical behaviour and punish non-conformity and this has an impact on students' subject choices. Parents are also powerful players in the gender game, they can and do reinforce gender stereotypical expectations. Students and teachers carry into school the cultural mores and values that are dominant outside of school thereby replicating the

gendered assumptions of parents and society at large within education. Challenging gender stereotypical attitudes and values outside of schools is as vital as challenging it within them.

There is much empirical research throughout the school system from pre-school to upper-secondary level (and in wider society) that illustrates the potent influence of the male peer group and its impact on boys' educational behaviour and achievement (Renold, 2001; Martino and Meyenn, 2001; Martino and Pallotta-Chiarolli, 2003; Ashley, 2003). Boys' behaviour in school is more likely to be reported as problematic by teachers, girls and peers, boys struggle to balance achievement against popularity and acceptance based on dominance, among their male peers (Lahelma, 2002). In adolescence in particular, boys police each others' masculinity strongly in terms of dominance-driven heterosexual male norms (Connell, 2005). So-called "laddish" behaviour is one manifestation of dominance-led behaviour. It can be an attempt to avoid the disparagement heaped on those who attend to academic work within particular male peer groups; or it may conceal real academic difficulties, particularly in literacy, and an attempt to preserve self-esteem (Connell, 2005, Rowan, Knobel, Bigum & Lankshear, 2002; Tinklin, 2003). Ultimately it is a complex, socially-situated pedagogical challenge.

The interaction among peers constitutes a major determinant in the gender socialisation process in schools. Student constructions of their identities take place not only in relation to teachers and the official curriculum, but also in conversations with

classmates, activities in the playground and through their engagement in related extracurricular activities. In the classroom culture, boys are challenged into being active, aggressive and competitive. Peer interactions can reinforce or contradict messages about gender emanating from the school curriculum. Often, peer networks are more supportive of traditional gender arrangements than are school personnel (Connell, 1996; Martin & Fabes, 2001).

In many respects, peers are the most important influences on children's gender-typed play. First, same-gender peers are models that children use to infer gender-normative behaviour. Children are more likely to play with a gender-neutral toy—or even a cross-gender-typed toy—after observing a same-gender vis-a-vis cross-gender model (Bussey & Perry, 1982). In addition to modelling gender-typed play, peers are vigilant in their enforcement of traditional gender norms. Peers generally disapprove of cross-gender-typed behaviour (Martin, 1989), and children quickly infer what their peers consider acceptable and unacceptable. These expectations become internalised as personal standards that guide children's behaviour (Bussey & Bandura, 1999). If same-gender peers act as socialisation agents that transmit and enforce gendered norms, one would expect that the amount of same-gender peer affiliation would predict relative degrees of gender-typed play. Indeed, this association has been documented in prior studies (Martin & Fabes, 2001).

2.4 Male and female students' classroom socialisation and interaction

According to a research by Kiietu (1998) the cultural belief in Kenya is that boys should not be soft. They are expected to be tough, active and brave while girls are often treated as soft. As such, teachers' treatment of boys and girls in these classrooms reaffirmed gender in accordance with cultural norms that define masculinity and femininity. The conclusion of this research was that gender identities are constantly constructed within the classroom and that these identities and classroom practices were influenced by what was within and outside the walls of the classroom, the wider society.

While exploring the gender differences in Mathematics achievement, Haag (1998) found that certain myths have become widely accepted as truths. One such myth was that 'women are qualitative, men are quantitative'. The result of this belief is that girls are much less apt than equally talented boys to go into mathematics-related careers, including engineering and the physical sciences. Another such myth that Martino and Frank (2006) uncovered is 'there is sex-linked math gene'. The results are that parents and teachers alike hold lower expectations for girls in Mathematics and Sciences than they do for boys.

In truth, it is these gender stereotypical attitudes over the years held by teachers and absorbed by students that play a major role in the future mathematical performance of females. In addition to attitudes, most models of orientation to Mathematics emphasis social factors such as gender stereotypes, and emphasizing social learning of the

stereotype that Mathematics is not a domain on which girls can excel, results in girls turning away from math and related subjects (Banaji, Greenwald & Nosek, 2002)

Further, it is clear that Mathematics and Science related careers continue to be dominated by men. And evidence is beginning to mount in support of the fact that the differences in mathematical success between men and women lies not within abilities, but within socialisation, attitudes and expectations of success. This fact is detrimental to female students realising their full potential not only in the classroom, but also in their career choices (Barquissau, Johns, & Schmader, 2004).

Banaji, Greenwald and Nosek (2002) in their study of teachers' belief and gender differences in mathematics, they found out that teachers have different beliefs about male and female students. They tend to stereotype mathematics as a male domain. This was evidenced by the fact that teachers had a tendency to over-rate male students' mathematics capability, have higher expectations for male students, and hold more positive attitudes about male students.

Additionally, what Einarsson and Granstrom (2004) found out is that in the classroom, females are less likely to engage in risk-taking activities such as asking questions and providing answers than are males. In support of this finding, Drudge and Chatain (2002) also found that 'many girls are reluctant to take risks in coeducational classrooms, in part due to boys' domination'. As Einarsson and Granstrom (2004) pointed out, the problem with this is that 'students who are active participants in their

own education tend to be higher achievers. Thus, without engaging in various risk-taking behaviours in the classroom, it is not possible for girls to achieve their full academic potential.

According to Banaji, Greenwald and Nosek (2002) in their study of 'teachers' beliefs and gender differences in mathematics, it was clear that teachers' behaviours are substantially influenced and even determined by teachers' beliefs. These behaviours, in turn, substantially impact upon students' beliefs and behaviours. The research further found out that students will perform up or down to teachers' expectations. Thus, if a teacher believes that his or her male students will perform better in math than will the female students that will often be the case.

Francis (2000) further states that teachers perceived male students as being their best students. They tended to explain males' success in mathematics in terms of ability more often than they did for females, whose success was described more often in terms of effort. This way of attributing causation for female students is widely believed to have a negative impact on students' achievements.

Warrington and Young (2001) found that teachers believed males in their classroom, when compared to females, were more competitive, more logical, more adventurous, volunteered answers more often to mathematics problems, enjoyed mathematics more and were more independent in mathematics'. Warrington and Young (2001) also found that over all, teachers tend to stereotype mathematics as being a male domain. Such

stereotyping results partially in different treatment of male and females in the classroom and undoubtedly influences the development of gender differences in mathematics. It is clear then that teachers' beliefs have had a devastating impact on female students.

Brown and Pinel (2003) performed a study that scored boys and girls on seven different areas: class administration, lesson scores, questions asked of, and other transactions. Amazingly, boys scored higher on all of these levels than girls did. Obviously there is some sort of phenomenon occurring in the classroom that is related to the male students. Boys and girls have different learning needs, and teachers need to take this into account when creating learning environments.

Gender roles are also reinforced by schools. Teachers, school administrators and educational material have great influence as they pass along cultural information and expectations. More or less visible mechanisms of inequality and segregation exist in educational systems in Europe despite increased co-educational systems. It is not sufficient to put children with a different life experience and hierarchical social roles together at school groups to eliminate discrimination. There is evidence that teacher expectations—form notions of future outcomes—tend to create inequalities in social interactions, which in turn affect performance. This is according to extensive experimental research conducted in the US by Jones and Dindia (2004).

The Anderson-Levitt, Bloch and Soumar (1998) study of Guinean schools found that

teachers expected girls would handle the daily cleaning of the school property, especially sweeping classroom; boys also engaged in manual work but not every day. Teachers also seem to have an expectation that romantic ties could be established between them and their female students; thus, they would tease colleagues for not finding a girlfriend among the student body. Teacher expectations impacted the students in general, neither first-grade girls nor first-grade boys held stereotypes about what boys and girls are like or can do in school.

According to Francis (2000) schools develop and reinforce sex segregation, stereotypes and even discrimination which exaggerate the negative aspects of sex roles in the outside world, when they could be trying to alleviate them. Schools are active agents in perpetuating the behavioural differences between males and females. Many factors are discussed but one in particular seems central to the argument the social interaction which occurs in the classrooms. Certainly there is evidence, for example in the study by Einarsson and Granstrom (2004), that boys are favoured when teachers come to choose pupils to answer their questions.

All in all, then, a research by Francis (2000) suggests that pupils play an active part in bringing the gender differences in classroom interaction into being boys are more likely than girls to create conditions where their contributions will be sought by teachers, and they are more likely than girls to push themselves forward when contributors are not explicitly selected. However, this is not to say that teachers are entirely passive in the process. Renold (2001) found high levels of contributions being

described by teachers as 'showing off' when they came from girls but 'interesting' when they came from boys. If this is communicated (albeit subtly) to pupils, it could have longer term implications for visibility and for volunteering. Unfortunately, Renold (2001) did not explore this possibility explicitly, and thus the point is merely speculative. In any event, this study involved four classrooms only and was restricted to the youngest age groups.

2.5 Family factors in relation to academic performance

According to Brown and Pinel (2003), there is a growing body of literature establishing the importance of parents' beliefs' in influencing their children's achievement, attitudes and academic performance. Brown and Pinel (2003) referenced studies that demonstrated that parents' beliefs and expectations are related to the child's self perception of ability and achievements expectations. These studies further pointed out that parent's belief about children's abilities have an even greater influence in children's achievement attitudes than does previous performance.

Parents' attitudes and beliefs predict gender-related variations in children's academic self-concept and achievement. To illustrate, we note the longitudinal research of Eccles, Freedman-Dolan, Frome, Jacobs, and Yoon (2000). In their study, parents generally endorsed the cultural stereotype that Mathematics was more natural for boys than for girls. Parents also tended to underestimate girls' math ability and to overestimate boys' ability. The researchers found that, over time, girls' own self-

perceptions reflected the parents' expectations. When parents had low expectations of their daughters, the girls increasingly lost confidence in their mathematics skills, and they lowered their evaluations of the usefulness of mathematics for their future. In high school, the girls spent fewer years studying mathematics than the boys did. This research highlights ways that parents' gender attitudes can influence their children's academic self-concept, choices, and achievement. Indeed, parents' perceptions of their children's abilities are better than children's actual grades in predicting children's academic self-efficacy years later (Bleeker & Jacobs, 2004).

Parents' socioeconomic status has also been pointed out by researchers as an aspect that has influenced students' academic achievement. According to Sax (2010), low income students compared to more affluent peers, have less positive school experiences and outcome, including intelligence and achievement test scores, grades point averages, class rank and educational attainment. Also, students from low socioeconomic status constitute the largest population of individuals considered to be at risk of not graduating from high school.

According to UNESCO (2003), students' learning is influenced by interplay of their individual, family and school characteristics. Families differ widely in how they shape their children's behaviour and attitudes towards schools and in their ability to provide learning opportunities for their children. Such differences influence children's readiness to learn even before they go to school.

Family characteristics are a major source of disparity in students' educational outcomes. More family financial resources, which are associated with parents' occupation and educational attainment, often imply increased learning opportunities both at home and in school. Better-educated parents can contribute to their children's learning through their day-to-day interactions with their children and involving themselves in their children's school work (Inzlicht, & Ben-Zeev, 2000). With their social networks and knowledge of social norms, better-educated parents – who often also have better jobs – also tend to be able to offer more educational and career options for their children, which may have an impact on children's motivation to learn. Parents with higher occupational status and educational attainment may also have higher aspirations and expectations for their children's occupation and education, which in turn can influence their commitment to learning. PISA data consistently show a relationship between advantaged family backgrounds and higher levels of literacy performance for students in every country (UNESCO, 2003).

Francis (2000) investigated how parents' expectations were communicated to their children. They found out that one possible way was through their differential treatment of sons and daughters. In their investigations they analysed parents' speech during various assigned teaching tasks with their 11- or 13-year-old children. During a physical science task, fathers of sons tended to use more explanations and scientific vocabulary than did fathers of daughters. Thus, fathers may be especially influential in encouraging physical science interest and achievement in sons. Gordon (2000) research further suggests that girls do better academically when they have gender-

egalitarian parents. The impact of egalitarian parental roles was especially strong on girls' (but not boys') academic achievement during the transition to middle school. Girls with egalitarian parents maintained higher levels of academic achievement in middle school (especially in Math and Science) compared to girls with traditional parents. Parenting practices may also be related to some of the academic difficulties that are more common among boys. In particular, poor parental monitoring and ineffective discipline are associated with increases in boys' antisocial behaviour, which in turn is related to academic disengagement. Research also suggests that parents' level of education is positively related to boys' verbal achievement (Ferry, Fouad, & Smith, 2000) and school adjustment.

A second pattern in the research literature is that parents tend to assign children gender-typed chores. Most notably, parents typically allocate child care and cleaning to daughters, and consign maintenance work to sons. The types of chores assigned to children may affect their development. Of particular note, children's involvement in family-care work is positively related to their pro-social development (Leaper, 2000, Wood & Eagly, 2002). However, a third point that comes across in the literature is that girls are more likely than boys to be assigned household tasks during childhood and adolescence. In this way, women's relegation to household work begins in childhood. Finally, the gender-typed assignment of household chores imparts lessons to children about women's and men's rights and responsibilities. Wood & Eagly (2002) argued that children's experiences may contribute to their later notions of entitlement and obligation with regard to household work. To the extent that daughters are assigned

more housework than sons, traditional expectations about the division of labour are fostered. Thus, girls' and boys' participation in different household chores in childhood can be viewed as training for later role and status differences in adulthood (Leaper, 2000; Wood & Eagly, 2002)

2.6 Gender stereotypes in relation to students' academic performance

In addition to being socialised at home regarding their gender roles as boys and girls students are also socialised at school. Teachers become a strong influence in terms of how they act or the role they play in the classroom (Olsen & Maphurisa, 1989). Girls still suffer some bias in terms of teacher attention compared to boys' and girls' performance in Mathematics and Sciences still falls behind that of boys. Equally, some teachers have a low opinion on girls' performance (Elimu Yetu Coalition, 2003).

There is also much evidence to show that many teachers carry the societal expectations of girls into school and treat boys and girls differently (Whyte, 1983). The teachers carrying with them societal prejudices to the classroom, overtly or covertly discourages girls from pursuing science oriented subjects. Spear (1985) reported the result of a research on teacher's views about the importance of science to boys and girls, where it was found out that those teachers, even science teachers expressed the opinion that science education was of greater importance to boys than to girls. In group experiments, leadership was mostly given to boys. The reinforcement and attention received by the boys also gave the impression that science was not for girls.

(Commonwealth Secretariat, 1986)

Gender roles are shaped and imposed through a variety of social influences. Formed during the socialisation phases of childhood and adolescence, gender roles influence people throughout their lives. The first and one of the strongest influences on a person's perceived gender role is his or her parents. Parents are the first teachers and some parents still hold traditional definitions of maleness and femaleness and what kind of activities are appropriate for each. Parents start early in treating their baby boys and baby girls differently (Banaji, Greenwald & Nosek, 2002). Although baby boys are more likely to die in infancy than girls, and are actually more fragile as infants than girls are, studies have shown that parents tend to respond more quickly to an infant daughter's cries than they are to those of an infant son. Parents are also more likely to allow boys to try new things and activities such as learning to walk and to explore and they tend to fear more for the safety of girls. Children also look to their parents for examples and role models. Boys and girls will be strongly influenced by the gender relations, the behaviour, tasks and activities undertaken by women and men in the family. If a girl sees her mother taking part in physical activities, for example, she will grow up with the idea that it is okay for girls to play sports (Pronin, Steele, & Ross, 2004)

Stereotype threat involves not only the activation of the stereotype during testing, but also the perception that the stereotype is self-relevant (Steele, Spencer & Aronson, 2002). Women with high gender identification may be especially prone to perceive gender stereotypes as self-relevant (Barquissau, Johns & Schmader, 2004). For

women, strong gender identification is related to negativity toward mathematics and increased susceptibility to stereotype threat (Banaji, Greenwald & Nosek, 2002; Pronin, Steele, & Ross, 2004). Taken together, these findings suggest that implicit stereotyping and gender identification jointly influence women's math-related outcomes. The present findings suggest that implicit gender stereotyping about math aptitude, in conjunction with gender identification, reduces women's math performance and their desire to pursue math-intensive careers.

According to Steel, Spencer and Aronson (2002) and Brown and Pinel (2003), negative stereotypes concerning women's mathematical aptitude contribute to their relatively poor performance and perseverance in mathematical fields. Women's math performance is impaired when gender stereotypes about math aptitude are salient and perceived as self-relevant during testing. Moreover, women's personal endorsement of gender stereotypes has been linked with poor performance and reduced desire to pursue math-intensive careers. High school and college-aged males outperform females on tests of advanced mathematics. Women are less likely than men to major in mathematics or pursue math-intensive careers, such as careers in engineering and computer science and are more than twice as likely as men to drop out of these fields (Barquissau, Johns & Schmader, 2004). Nosek (2002) further argues that women's implicit gender stereotyping regarding aptitude correlates with poor maths performance and their strong gender identification is related to negativity towards mathematics.

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There is reason to believe, however, that women will often show signs of stereotype endorsement. Laboratory studies suggest, for instance, that young women have at least implicit belief in gender stereotypes. Various research projects have shown that the increased salience of gender stereotypes undermines women's performance on math tests (Gonzales, Blanton & Williams, 2001; Inzlicht & Ben-Zeev, 2000). This suggests that women often possess some degree of internalisation of the stereotypical view, even if they do not explicitly endorse the stereotype as true. It seems likely, however, that many will take the next step as well and explicitly endorse gender stereotypes. In fact, some theoretical perspectives within the psychological community have suggested that women should believe the stereotype related to their abilities. This is because some psychological researchers have argued that gender differences in ability do exist and that they reflect biological differences in aptitude (Spelke, 2005).

There is strong developmental evidence, for instance, that those parents' gender stereotypical beliefs undermine girls' belief in their mathematics abilities and there is evidence that socialisation context that increase the salience of young girls' gender diminishes their aspirations in male stereotypical ability domains (Blanton, Christie & Dye, 2002). These findings suggest that gender socialisation often undermines women's confidence in their math and spatial abilities and that this can flow from informal pressures to adopt gender stereotypes. Admittedly, however, these findings fall short of showing that women often take the next step and internalize beliefs that the stereotypes about their abilities are true. For instance, women may be more likely

than men to believe that they have poor math abilities but still reject the stereotype that women as a group have less math ability than do men as a group

In summary, there is good reason to believe that women often show some degree of belief in or endorsement of the stereotypes that women have worse math and spatial abilities than do men. Although the belief in these in-group stereotypes might not be high in absolute terms, it seems likely that it is higher than would be found for most targets of negative stereotypes. To the extent that women buy into negative gender stereotypes, this should have dramatic consequences for social comparisons of ability

2.7 Patriarchal society in relation to academic performance

According to Millett (1979), the chief contribution of the family in patriarchy is the socialisation of the young (largely through the example and admonition of their parents) into patriarchal ideology's prescribed attitudes toward the categories of role, temperament, and status. Although slight differences of definition depend here upon the parents' grasp of cultural values, the general effect of uniformity is achieved, to be further reinforced through peers, schools, media, and other learning sources, formal and informal. While we may niggle over the balance of the authority between the personalities of various households, one must remember that the entire culture supports masculine authority in all areas of life and outside of the home – permits the female none at all.

According to Boonzaar and Sharp (1988) patriarchy is a system of domination of man

over women, which transcends different economic systems, eras, regions and class. In such a community the father was the highest authority. In other words, he was at the head of the specific authority structure. Since every authority structure can have only one head, the woman was under the authority of her husband. The mother, on the other hand, was pre-eminently the loving and understanding party who cared and served in silence. The 'ideology of patriarchy' therefore seems to have developed as a result of the elevation of 'the idea of the leadership of the fathers', to a position of paramount importance in society. In patriarchal society women have to struggle against the dominant patriarchal power relations, which confine them to the private sphere of the home and the family, away from the public sphere of production and formal education. Men become the custodian of education and societal values (Ramphael, 1995)

Jean Jacques Rousseau, an early modern champion of equality, applied his logic only to men. Not only did Rousseau fail to argue for gender equality, but as Bryson (1992) has pointed out, he elevated the power differential between men and women "into a moral principle that becomes the foundation of an immense and complicated argument about how men and women should behave in all aspects of their lives". Rousseau, of course, was validating an ancient belief rather than devising a new one. From the beginning of recorded history, men have not only been dominant, but societies have held that it is right that they should be so. Bryson (1992) argues that he singles out Rousseau not because he was unusually chauvinistic but because he wanted to make point that Rousseau's disparaging attitude towards women was so utterly

common that this champion of equality mistook convention for natural law, as a long line of fellow men had done before him. Patriarchal conventions, or the social norms that make common sense of male dominance, have assigned women to second class citizenship for millennia.

Millet (1979) asserts that traditionally, patriarchy permitted occasionally minimal literacy to women while higher education was closed to them. While modern patriarchies have, fairly recently, opened all educational levels to women, the kind and quality of education is not the same for the sex. The difference is of course apparent in early socialisation but persists and enters into higher education as well. Millet (1979) further argues that as patriarchy enforces a temperamental imbalance of personality traits between the sexes, its educational institutions, segregated or co-educational, accept a cultural programming toward the generally operative division between 'masculine' and 'feminine' subject matter, assigning the humanities and certain social sciences (at least in their lower or marginal branches) to the female and sciences and technology, the professions, business and engineering to the male. Of course the balance of employment, prestige and reward at present lie with the latter. Control of these fields is very eminently a matter of political power. One might also point out how the exclusive dominance of males in the more prestigious fields directly serves the interests of patriarchal power in the industry, government, and the military. And since patriarchy encourages an imbalance in human temperament along sex lines, both divisions of learning (science and the humanities) reflects this imbalance. The

humanities, because not exclusively male, suffer prestige

Bartchy (1999) stresses that in the prevailing patriarchal system of the world of Jesus and Paul, both boys and girls were socialised to expect not only that men would routinely dominate women but also that every male should seek to dominate as many other men as possible. Within all social classes, traditional male socialisation produced human beings who were programmed to pursue a never-ending quest for greater honour and influence in a culture where both honour and influence were in limited supply. Bartchy (1999) further argues that all males and presumably most females in these cultures regarded the public realm as superior to the household, linking public life with civilisation, freedom, mobility, and acquired honour. Boys were raised to find their primary identity in that public realm. Young males learned quite early that they symbolised the honour of their households and that they had to defend that honour on a daily basis from the challenges of all males beyond their family. Not to do so would bring shame upon themselves personally and on their families as well. Boys were raised to be aggressive, to seek to dominate, in whatever way possible, every male child encountered greater challenges beyond their family's threshold.

Both Western and African cultures seem to be deeply influenced by the idea of the supremacy of the fathers, since patriarchy is irrevocably part of both Eurocentric and Afro-centric cultures in South Africa (Van derWalt, 1994). Patriarchy is indeed "one of the strongest ideologies in cultures world-wide, and in the context of modern

Western culture, it is operative on more or less the whole spectrum of hyper-normative discourses" (Visagie, 1999) Since patriarchy is regarded as a fully-fledged ideology, it appears that the current pursuit of gender equality in South African education is up against a powerful enemy, as indicated by the Commission on Gender Equality (Visagie, 1999). One of the few profoundly non-racial institutions in South Africa is patriarchy. Indeed, it is so firmly rooted that it is given a cultural halo and identified with customs and personalities of different communities. Thus, to challenge patriarchy, to dispute the idea that it is men who should be dominant figures in the family and society, is to be seen not as fighting against the male privilege, but as attempting to destroy African tradition. Patriarchy brutalises men and neutralises women across the colour line.

Bakare Yusufu (2003) argues that in Western Nigeria the birth of a boy is more valuable than the birth of a girl or that it is more important for boys to do well at school. The study relates to the differential value placed on sexes and the fact that our social organisation puts more value to male roles compared to those of female. Even today, European societies are organised around patriarchal patterns where male domination and female subordination are still very present, including in symbolic representation, in the arts, the media among others. Therefore, gender stereotypes play an important role in shaping gender relationships (Marler, 2006)

Although it is theoretically possible that a sexual division of labour should not imply inequality between the sexes, in most societies, the socially acceptable division of labour by sex is one which accords lower status to women's work. Patriarchy is therefore not simply a hierarchical organisation, but a hierarchy in which particular people fill particular places. Male power in the South African society is however not only exercised by assigning "female-specific" jobs and in securing superior employment, but also on a psychological level. Schoeman (1998) argues that ideologies frustrate well-balanced interpretations of reality, to such an extent that even the oppressed become restricted in their thinking. "They eventually come to accept their subservient position in society and presumed inferiority as natural, as a given state of affairs that can never be changed". It has been recorded that female teachers often do not "feel" themselves competent to be appointed in managerial positions. They have been "brainwashed" through patriarchy to accept themselves as inferior (Chirumuta, 2006) — a condition that is seen to be relative to their authority as competent teachers and potential leaders of society. The sexist and patriarchal assumption that "... any kind of authority is incompatible with the feminine" (Chirumuta, 2006) denies the woman educator to speak as a figure of authority.

Patriarchy adversely affects every aspect of society. When one is confronted by statistics that refer to the position of women in society, and specifically in education, it is evident that this ideology adversely affected (and still does) every aspect of human life (Ramphela, 1995). In the first instance, women have been oppressed for

generations and have been kept from liberating themselves by structures of domination, designed to maintain the ideology. In the struggle to maintain the supremacy of the fathers, women were kept in their position of subservience through measures such as less educational opportunities than men, economic dependence, physical harassment, exclusion from leading roles in education, politics, the church and society at large report of the Gender Equity Task Team, (Walker, 1979). It seems that the effects of patriarchy on society and education in particular relate to a situation of perpetuated inequality. A situation that is summarised in the Education and Training Policy of the African National Congress which identified women as part of the most neglected and marginalised group in society (Walker, 1979).

To highlight the issue of power relations with regard to gender, one has to have a closer look at the distribution of power in a patriarchal society. The definition of Kate Miller (1983) is especially appropriate. "... our society ... is a patriarchy. The fact is evident if one recalls that the military, industry, technology, universities, science, political offices, finances — in short, every avenue of power within the society, including the coercive force of the police, is entirely in male hands." Patriarchy can thus be described as a set of social relations between men, which have a material base, and which create interdependence and solidarity among men that enable them to dominate women. Although patriarchy is hierarchical and men of different classes, races or ethnic groups have different places within the patriarchal system, they are simultaneously united in their shared relationship of dominance over their women and

they are dependent upon each other to maintain that domination. According to (Walker, 1979) hierarchies 'work' at least in part because they create vested interests in the status quo. Those at the higher levels can 'buy off' those at the lower levels by offering them power over those still lower. In the hierarchy of patriarchy, all men, whatever their rank in the patriarchy, are bought off by being able to control at least some women (Swan, 1992). The material basis, upon which patriarchy rests, lies most fundamentally in men's control over women's labour power.

Although it is theoretically possible that a sexual division of labour should not imply inequality between the sexes, in most societies, the socially acceptable division of labour by sex is one which accords lower status to women's work. Patriarchy is therefore not simply a hierarchical organisation, but a hierarchy in which particular people fill particular places. Male power in the South African society is however not only exercised by assigning "female-specific" jobs and in securing superior employment, but also on a psychological level. Schoeman (1998) and Mill (2006) argues that ideologies frustrate well-balanced interpretations of reality, to such an extent that even the oppressed become restricted in their thinking. "They eventually come to accept their subservient position in society and presumed inferiority as natural, as a given state of affairs that can never be changed".

2.8 Co-educational and single sex schools in relation to performance

There is much commentary on the educational outcome related to the type of institutions girls have access to, that is single sex schools and coeducational schools. A study by Warrington and Young (2001) found females frequently expressed having more confidence in the single-gender setting. This research also found out that girls found it easier to contribute to oral discussions and to ask questions without being ridiculed in the single gender setting. Equally in a study in Britain, girls also expressed caring more about their work and were feeling less inhibited in their single-gender classroom (Gordon, 2000).

Most studies have indicated that boys contribute more to classroom interaction (for example, by "calling out" answers) and dominate in "hands-on" activities, such as laboratory work and computer sessions (Howe, 1997; Francis, 2004). Furthermore, boys tend to be more disruptive in the classroom and experience more negative interaction with teachers as a result of their misbehaviour (Francis, 2000, Warrington and Younger, 2000). From this perspective, the presence of boys in the classroom is seen as having a negative effect on girls' academic engagement and achievement. Other commentators have pointed to the "distraction" inherent in mixed gender educational settings for adolescents.

The discussion of the influence of single-sex education on student outcomes has chiefly focused on academic performance, either using a summary measure of overall

achievement or examining achievement in particular subject areas. Findings have differed across and within countries, according to the method of analysis used and the specific outcome selected. Three more recent studies point to somewhat different conclusions on the effects of single-sex schooling in the British context. Spielhofer, Benton and Schagen (2004) found out that, in England, average academic achievement levels for males do not differ significantly between single-sex and coeducational settings, but there are some performance gains for lower-achieving boys in single-sex schools. For females, an advantage was found for those attending single-sex schools across a range of achievement outcomes, with the greatest advantages found in the area of science and for the lowest prior attainment group. Malacova (2007) found that both boys and girls in more selective single-sex schools had a performance advantage but, within non-selective schools, only lower ability boys and girls achieved higher grades in a single-sex setting.

The advantages of single-gender education for girls helps in expanding their educational opportunities, it custom-tailors their learning and instruction, and provides them with greater autonomy, especially in heterosexual relationships (Bruce & Sanders, 2002, NASSPE, 2010). Arguably, the single greatest benefit of girls-only education is the greater breadth of educational opportunity and the finding that many girls score higher on their final academic scores from an all girls' school as compared to a girl who attended traditional high school (Sugden, 2009). Additional research can be found in Leonard Sax's 2010 book 'Girls on the Edge'. The four factors driving the

new crisis for girls. At every age, girls in girl-only classrooms are more likely to explore "non-traditional" subjects such as Computer Science, Physics (or the primary school precursors to the Physical Sciences), Woodworking, among others. A nationwide report from UCLA's Graduate School of Education and Information Studies provides evidence that graduates of girls' schools report higher levels of self-confidence, engagement and ambition compared to their coeducational peers, they also report that they have more confidence in mathematics and computer abilities and are more likely to engage in political discussion, keep current with political affairs, and see college as a stepping stone to graduate school (Sax, Arms, Woodruff, Riggers & Eagan, 2009).

In girl-only learning environments, girls are exposed to more successful female role models. The top students in all academic subjects and the leaders in sport and extra-curricular activities are girls. Building onto this, some research indicates that adolescent girls feel better about themselves in many ways when they are educated in girls' schools as opposed to co-educational schools (Strabner, 2002). In general, they feel better about their bodies and their body image as well as about their academic abilities. By promoting self-esteem, single-sex schools may better equip girls to fight for their human rights in gender-biased male-dominated societies (Stabner, 2002).

According to Schmuck (2005), critics of single-sex education argue that girls-only schools are unnatural social settings which isolate girls from boys. In well-managed

co-educational environments boys and girls learn to respect and value each other's ideas. They learn to listen and communicate with each other. Isolating girls and boys in single-sex schools is considered a barrier to them developing the effective interpersonal skills they will need to function as grown-ups in their society. This concern has led some Christian missionary schools in Nepal to start co-educational classes up until fifth grade, a break from traditionally operating single-sex schools (Schmuck, 2005)

On the other hand Robinson and Gillibrand (2004) research findings suggest that girls do better in certain subject areas such as Mathematics and Science when boys are not in the class. In one of the earlier studies, Jimenez and Lockheed (1989) assessed the performance of 3,265 eighth graders in single-sex and co-educational schools in Thailand. Girls in girl-only schools scored higher in mathematics and boys scored higher than girls in co-educational Mathematics classes. These differentials were largely because of peer effects. In girl-only Mathematics and Science classrooms, research indicates that girls are engaged in learning more of the time, show more cooperative learning behaviour and identify better with their female classmates than when they are in a coeducational class.

According to UNESCO (2007) policymakers in many education ministries are in co-educational classes debating the value of coeducational classes' vis-à-vis single-sex

education. In single sex education, all learners are either girls or boys. The heart of most debate is whether girls will be safer and get a better education if they learn only with other girls or in mixed classes with boys. Educators have three main choices of educating girls. There can be single-sex education in separate boys' or girls' schools, co-education of girls and boys in the same classes in the same school, or mixed models. Mixed models can take various forms. They include co-educational schools where boys and girls study several subjects in mixed classes but also have girl-only or boy-only classes for specific subjects like Mathematics or Science. A common example is schools that have separate physical education or vocational skills classes for girls and boys who study other subjects together. Separate boys' schools and girls' schools may also bring their students together for some joint education for sport or extra-curricular activities.

Proponents of single-sex schools argue that these schools allow girls to flourish in a way that coeducational schools may not. Some studies indicate that girls in schools with single-sex programs achieve higher learning, display more self-confidence and leadership skills, and enter male-dominated fields at a higher rate (Ferrara, 2005). Studies have also shown that girls in single-sex classes are actually more likely to act outside of traditional gender roles. Boys might also feel freer to engage in pursuits they may not have considered at a coeducational school. For instance, a school principal who has taught at both coeducational and single-sex schools has noted that "there is a subtle pressure toward gender stereotyping in mixed schools. In boys' schools, boys feel free to be themselves, to follow their interests and talents in what

might be regarded as non-macho pursuits: music, arts, and drama" (Wills, 2007). This anecdotal evidence makes sense. When girls are around, they are the ones expected to take part in such 'non-macho pursuits'. But when the girls are not in the school, boys may perceive that it is acceptable to fill those 'feminine' roles. Single-sex schools would therefore allow some boys to transcend the gender roles that are typically assigned to them.

2.9 Studies related to gender differences in academic performance

A number of studies concerning gender differences in Mathematics have been done in many parts of the world. The same has been done in several parts in Kenya. But research related to social determinants of gender differences in academic performances is negligible. However, research done elsewhere outside Kenya reveals that identification of causes of gender differences in academic performances is an issue of great concern (Deal, 2003; Lynn, 1998).

Dayio-Lu and Turut-Aik (2004) studied gender differences in academic performances in a large public university in Turkey. Their study attempted to determine whether there were significant gender differences in academic performances among the undergraduate students in the university. The study found out that a smaller number of female students qualified for admission at university and when they did, they excelled in their studies and outperformed their counterparts. The study showed that students' performance is affected by a host of factors. This includes individual and household characteristics such as student ability, motivation and quality of secondary school

attended. The gender of the student may also be a factor in determining students' performance, childhood training and experiences, difference in attitudes, parental and teacher expectations and behaviour, differential course taking and biological differences in achievement. The rather high gender disparity in various patriarchal social structures in Turkey may also lead to poorer academic performances among students.

Lynn (1998) studied the gender differences in cognitive performance and asserts that males have a large average brain size than females and therefore, would be expected to have higher average IQs. The biological perspective on gender differences and cognitive performance considers social factors to be trivial or subordinate to biological factors like the brain structure. The debate on gender differences in cognitive abilities has actually evolved out of the debate on the biological against social determinism.

Eriba and Ande (2006) in their study on gender differences in achievement in calculating reacting masses from chemical equations among secondary school students in Mukurdi Metropolis observed that over the years there exists gender inequality in Science achievement among senior secondary school students the world over. Males score higher than the females in science and science-related examinations. This has created a big psychological alienation or depression in the minds of female students towards science-related subjects. The study established that boys performed better than girls on the achievement test. Recommendations to address the gender disparity in students' performance in chemistry were made. These included, teaming up of

chemistry and mathematics teachers to ensure integrative learning, transfer and application of knowledge among the females by giving them attention and time.

Deal (2003) examined the expected gender differences in college students' expectations of success specifically in Mathematics. The research hypothesis was that there would be statistically significant differences between expectations of success in mathematics of males and females. The study explores the four primary elements suspected to be responsible for the differences in mathematical performance of males and females. The first element of focus is the teachers' belief about gender differences in mathematics ability. The second element is the amount of attention and the type of attention teachers give to boys as compared to what they give to girls in the classroom. The fourth and final element of focus is the girls' lack of self-confidence in their ability to perform mathematics.

Yin (1992) studied gender differences in academic choice and their relation with sex-role orientation and sex stereotypes. The results showed that even after controlling for school performances, gender differences still existed in academic choice. The study successfully showed that, even with the same past performances, boys are more likely than girls to choose Science. One implication of this study is that boys and girls differ in achievement, career or even life patterns because they make different choices.

This study shows that sex-stereotypes in Art and Science studies really exist and are accepted by boys and girls. It also shows that stereotypes significantly affect academic choices.

Odongo (2007) carried out a study on the factors that cause gender disparities in the choice of courses in technical institutions and she found out that parental influence is very important in making a choice. She also found out that a student's upbringing played a very important part in influencing a student's choice of subject. Peer group also played a bigger part in influencing a student's decision making.

Finally it is clear from the literature reviewed that previous studies overemphasized on Mathematics as the main cause of gender differences in performance. There are also studies showing that determinants of gender differences in academic performances are biological and not social factors. In some studies in Western countries, an attempt has been made to show that social factors are some of the determinants of gender differences in academic performance. This study then focuses on the determinants of gender differences in academic performance from the social factor background.

2.10 Summary of the literature review

This chapter has reviewed literature on the social determinants of gender differences in academic performance. The literature review emphasized at different areas that bring about gender differences in academic performance. These included individual and household characteristics like peer culture, classroom interaction, students' ability, motivation and parental expectations. The review also identified different male and female students IQs as also a cause of gender difference in academic performance.

Looking at the literature reviewed, a number of studies have been done on gender differences in one specific area like mathematics, science and career choices without looking at the gender differences from the school based experiences and students socialisation perspective. This study puts into account the different social experiences that the students go through in schools during their classroom interactions. Therefore the study intends to fill this gap.

2.11 Theoretical framework of the study

This study was guided by social learning theory propounded by Albert Bandura in 1977. This theory focuses on the behaviour patterns that people develop in response to environmental contingencies. Some behaviours may be rewarded while others may produce unfavourable results through the process of differential reinforcement, people eventually select the more successful behaviour patterns (Atkinson, Atkinson, Smith & Hilgavel, 1997). In a coeducational environment students operate on 'survival-for-the-fittest' socialisations (Federle, 2005)

Social learning theory further stresses the importance of learning by observation. Many behaviour patterns are learned by watching the behaviour of others and observing what consequences it produces for them. It emphasizes the role of models in transmitting both specific behaviours and emotional responses and it focuses on such questions as what types of models are most effective and what factors determine whether the modeled behaviour that is learned will actually be performed (Bandura, 1977)

Along with his work on modeling, Bandura (1997) began to develop the idea that believes in one's capabilities, known as self-efficacy. He coined the term Social Cognitive Theory, which holds that a person's behaviour, environment and inner qualities interact, rather than one of them being predominant in explaining how people function. The theory became the umbrella for much of Bandura's work, including mastery, or how people learn; the role that social persuasion and support play in encouraging behaviour and the ways people regulate their own behaviour. At the core of Social Cognitive Theory is the self-efficacy beliefs, in that people's judgements of their capabilities to organise and execute courses of action is required in order to attain designated types of performances. Self-efficacy beliefs provide the foundation for human motivation, well-being, and personal accomplishment. This is because unless people believe that their actions can produce the outcomes they desire, they have little incentive to act or to persevere in the face of difficulties.

Bandura's (1997) key contentions as regards the role of self-efficacy beliefs in human functioning is that people's level of motivation, affective states, and actions are based more on what they believe than on what is objectively true. For this reason, how people behave can often be better predicted by the beliefs they hold about their capabilities than by what they are actually capable of accomplishing, equally self-efficacy perceptions help determine what individuals do with the knowledge and skills they have. This helps to explain why people's behaviours are sometimes disjoined from their actual capabilities and why their behaviour may differ widely even when they have similar knowledge and skills. He further says that many talented people suffer

frequent (and sometimes debilitating) bouts of self-doubt about capabilities they clearly possess, just as many individuals are confident about what they can accomplish despite possessing a modest repertoire of skills. Belief and reality are seldom perfectly matched, and individuals are typically guided by their beliefs when they engage the world. As a consequence, people's accomplishments are generally better predicted by their self-efficacy beliefs than by their previous attainments, knowledge, or skills. But according to Pajares (2002), there is no amount of confidence or self-appreciation that can produce success when requisite skills and knowledge are absent and that is why Social Learning Theory is still applicable in learning. Learning would be exceedingly laborious, not to mention hazardous, if people had to rely solely on the effects of their own actions to inform them what to do.

In social learning theory, the system of reinforcement and punishment are highlighted in their importance in acquisition of specific behaviour. Children have to remember the circumstances and how their behaviour is reinforced and thus, extract the patterns of appropriate outcomes from sequences of events over time (Bandura, 1977). According to American Association of University Women (1998), girls in single sex schools received more attention from teachers and were positively reinforced than when they were in mixed classes, and this improved their performances. In coeducational classes girls did not ask questions because they did not want to sound stupid. Equally, teachers encouraged them to explore in areas that were stereotyped either as male or female.

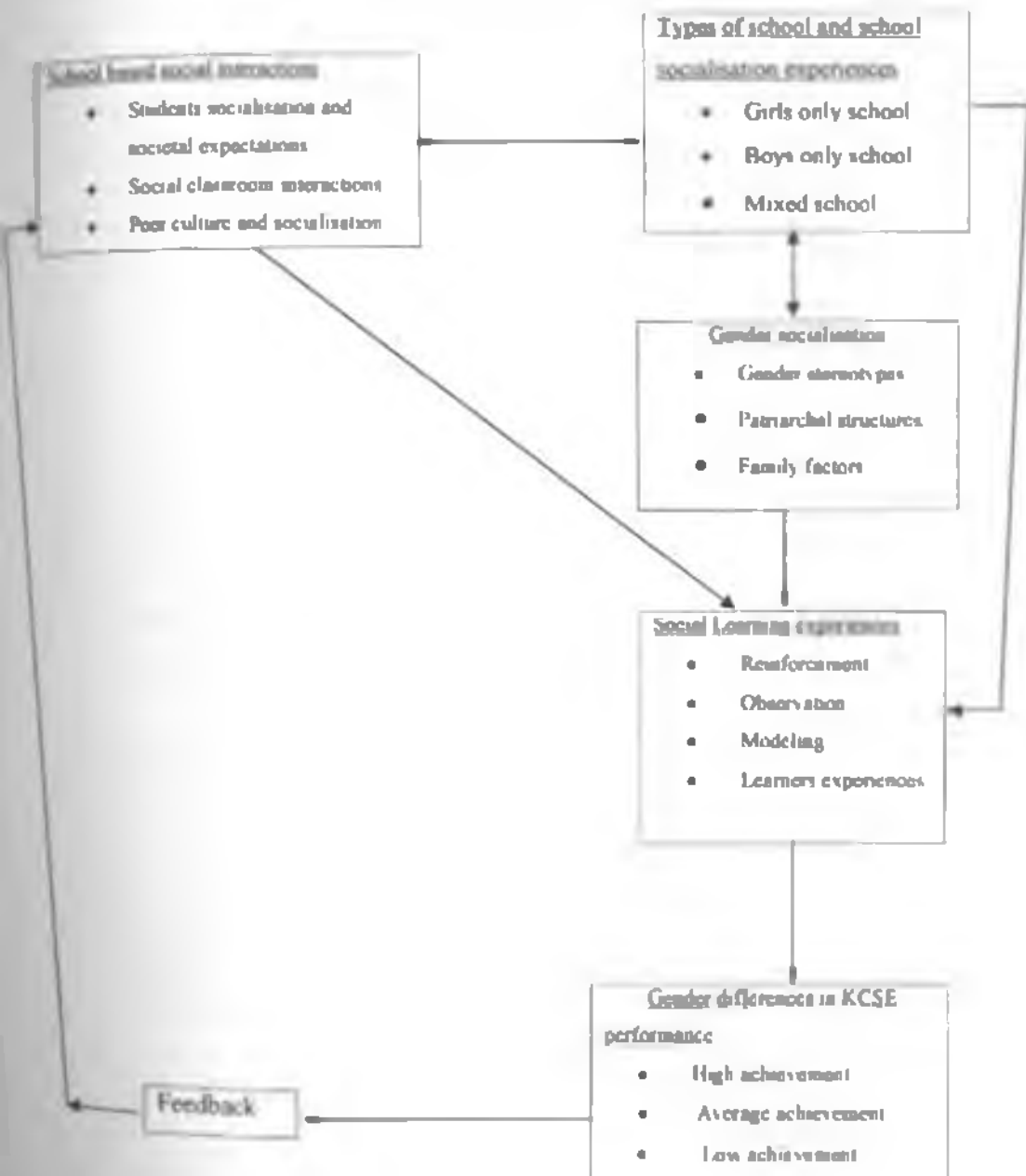
Social Learning Theory emphasizes that one's learning and performance of behaviours

are influenced by one's social contexts, including the family, community and broader society (Crosbie-Burnett & Lewis, 1993). Social learning suggests that a combination of environmental (social) and psychological factors influence behaviour. It indicates the effectiveness of human social models in influencing another to change behaviours, beliefs or attitudes, as well as social and cognitive functioning. Teachers and parents must model appropriate behaviours and take care that they don't model inappropriate behaviour. Teachers should also expose students to a variety of other models in order to increase their confidence (Cunha, 2007). That is why teaching boys and girls together could be damaging for education of the girls. This is because it makes them vulnerable to verdicts of others about their own incompetence in certain stereotyped subjects and directly affects their confidence (Smithers, 2004)

2.10 The Conceptual framework of the study

Figure 2:1

Social determinants of gender differences in academic performance



The conceptual framework of this study is based on the concept that social determinants of gender differences in academic performance in examination in secondary schools, is a function of multiple factors. Students in different types of schools are influenced by various factors which are the inputs. These factors are students' socialisation and societal expectations, social classroom interactions, peer culture socialisation, types of school and school socialisation experiences and gender socialisation. The conceptual framework illustrated above shows the envisaged effect of various variables which tend to influence students performance in secondary schools. These variables may have negative or positive effects on student's performance.

The school experiences that students go through inside and outside the schools are a process that determines students' performance in KCSE examination. This is reflected in the grades students attain in KCSE examination. A student might get low, average or high marks in the national examination. This performance provides feedback to the students and other stakeholders and it allows for adjustment and improvement of the curriculum delivery.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter focuses on the methodology used in the study. In the subsequent sections detailed descriptions of the research design, target population, sample and sampling procedure, research instruments, validity and reliability, data collection procedures and data analysis techniques are discussed.

3.2 Research design

This study used descriptive survey research design. According to Mugenda (2008) descriptive research is used to obtain information concerning the current status of the phenomenon to describe 'what exists' with respect to variables or conditions in a situation. The methods involved range from the survey which describes the status quo, the correlation study which investigates the relationship between variables, to developmental studies which seek to determine changes overtime. The design is used to describe systematically the facts and characteristics of a given population or area. Descriptive research is used to answer research questions: what is happening? How is something happening? Why is something happening. The design is appropriate in investigating social determinants of gender differences in KCSI performances in Kericho and Kipkelion Districts as it will be able to obtain data on the existing conditions and investigate the relationship between variables.

3.3 Study area

Kericho and Kipkelion Districts are in the Rift Valley Province and they occupy an area of 2,110.6 km². The area is 3,000m above sea level. They have 7 divisions namely, Kipkelion, Londiani, Chilchila, Soin, Ainamoi, Belgut and Sigowet. The youthful population of ages 1 to 19 is comprised of 62.5 percent of the total population.

The study was appropriate in Kericho and Kipkelion Districts because in these two districts, though the ratio of female to male is 1:0.97 (female: male), there is a wide gender disparity in performance in Kenya certificate of Secondary Education (KCSIE) in the two districts. Gender inequalities also pose a major challenge in the two districts with 56.9 percent of the boys enrolled in schools compared to 44.1 percent of the girls. The society in these two districts is modeled in the patriarchal beliefs where men control access to resources and decision making. Decision making on property and assets like land, livestock and cash crops is done by men. In most of the rural areas cultural traditions and gender stereotypes are still upheld (Republic of Kenya, 2009). Women spend a lot of time working on farms and attending to household chores. There are also clear gender divisions of labour within the communities living in these areas.

The two districts have also an element of urbanization but about 60% of the people live below poverty line. The main cash crops in the two districts are tea, coffee,

sugarcane and pyrethrum. There is also livestock keeping. The main food crops produced is maize, beans, Irish potatoes, wheat and finger millet (Republic of Kenya, 2009)

3.4 Target population

The main target population for this study consisted of students in Form Four in Kericho and Kipkelion Districts. The students were selected from coeducational schools and single sex schools in the two districts. There were seventy (70) secondary schools in Kericho and Kipkelion Districts, ten (10) girls school, seven (7) boys school and fifty three (53) coeducational schools. The selection of the Form Four (4) respondents was convenient in that the students were to sit for a national examination and therefore they were in a better position to give more objective information as opposed to their Form One to Three counterparts. The students had also gone through the four years of secondary education and therefore they had a wide experience on the challenges of preparing for a final examination.

The second target population in this study was teachers in Kericho and Kipkelion Districts. The 490 teachers in the 70 secondary schools in the two districts were targeted because they were preparing students for the Kenya Certificate of Secondary Education examination. They were also in a position to give more reliable information about the determinants of academic performance in KCSF in the classes they were handling. The teachers were also assumed to be knowledgeable of determinants of

gender differences in academic performance through their interactions with the students in and outside the classroom and also their parents. The teachers were also likely to have handled the classes since Form One (1) and therefore likely to be aware of any emerging gender differences that had hampered students performance in KCSE examination.

3.5 Sample and sampling procedure

The schools in this study were randomly sampled. A total number of thirty five (35) schools out of seventy (70) public and private secondary schools in Kericho and Kipkelion Districts participated in this study. The following formula was used to determine the sample size in social sciences

$n = z^2 pq / d^2$ n = the desired sample size if the population is > 10,000, z = is the standard normal deviation at the required confidence level (e.g. 1.96 for 95% confidence level), p = is the proportion in the target population estimated to have the characteristic (assume 50% if unknown), $q = 1-p$ and d = the level of statistical significance set. If the target population with the desired characteristics is 50% in a population greater than 10,000 the sample was to be: the desired population was to be 0.50, z -statistic 1.96 the desired population will be at a significance level of 0.05, then the sample size was to be $n = \frac{(1.96)^2 (.50)(.50)}{(0.05)^2} = 384$ (Mugenda, 2008). In this research the students study population was 5,300 and the following formula was to be applicable: $nf = n / (1 + n/N)$ Where nf = the desired sample size (when the population is less than 10,000), n = the desired sample size (when the population is more than 10,000), N = the estimate of the population size. The sample size then was to be nf

$$= 384/1 + 384/5,300 = 358$$

The study used stratified random sampling procedures in selecting the students. Since the number of single sex schools was proportionately low compared to those in coeducational schools, purposive sampling was used in selecting the 12 single sex secondary schools from the two districts. In the coeducational schools, 30 percent of the total number of schools was randomly selected. Stratified random sampling was used to obtain a representative sample of both female and male students. Purposive sampling was used in selecting single sex schools in the two districts. Since each student takes an average of 7 subjects at the KCSI examination, an average of 7 teachers per school participated in the study giving a total number of 231 teachers from the 33 schools selected. The students were to be selected using stratified random sampling to obtain boys and girls in mixed schools, while simple random sampling was utilized to obtain student respondents in single sex schools.

Table 3.1

Target Population and sample size in the study

Category	Target Population	Sample size
Teachers	490	231
Students	5,300	358
Total	5790	579

3.6 Research instruments

The researcher employed self-administered questionnaires. These were used to obtain information from teachers and students. The researcher therefore constructed the questionnaires for the different respondents

The teachers' questionnaire was divided into various parts. Part A solicited for demographic and background information of the teachers' respondents. Parts B, C, D, E, F, G and H sought information on teacher's attitude towards the influence of gender differences on students' academic performance. It also sought information about the social determinants' of gender differences in academic performance in schools and recommendations teachers felt may reduce gender differences in academic performance as shown in appendix A.

The students' questionnaire was divided into various parts. Part 'A' was to solicit background information about the students. Parts B, C, D, E, and F gathered information about the students' experiences in school and also sought information about the teaching and learning process in single and mixed schools. This section was used to get male and female students' attitudes towards their studies in school as shown in appendix B.

The researcher also examined student's performance records in secondary schools under this study. A document analysis guide was used to get students performance data. This enabled the researcher to trace the trend of gender performance in schools as shown in appendix C.

3.7 Validity of the instruments

Validity of the instrument is its ability to measure what it is intended to measure (Mugenda & Mugenda, 1999). In this study the processes of validating the instruments involved pre-testing the instruments. In this process, a pilot study was conducted on a population similar to the large population in Kericho and Kipkelion Districts. The pilot schools were not included in the final research. Piloting was carried out seven schools in order to help in identifying items that were ambiguous. Such items were modified appropriately in order to capture the required data. Some of the items were restructured in order to capture the information required. Piloting used 55 students and 32 teachers who were randomly selected. They were not included in the final study.

3.8 Reliability of the instruments

According to Mugenda (2008), reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials. Reliability was achieved through application of the questionnaire on a pilot basis and also by using the split half method whereby the questionnaire was divided into two equivalent halves of odd and even numbers on the questions that were divisible and they were in the likert scale. The scores of one half were correlated with the scores of the other half. Pearson product-moment(r) correlation was used whereby $R = 2r/1+r$. The self correlation of the whole questionnaire was then 0.77 for the students' questionnaire and 0.81 for the teachers' questionnaire. This was calculated by the use of SPSS

computer software. This correlation was adequate as correlation always takes a value of between -1 and 1, with 1 or -1 indicating perfect correlation. A correlation value close to '0' indicates no association between variables.

3.9 Data collection procedures

The researcher sought for a research permit from the National Council for Science and Technology and then informed Kericho and Kipkelion District Education Officers (DEOs) the intention of carrying out a research in the two districts. In matters of procedure, preliminary visit was conducted in which the head teachers were made aware of the researcher's intention to meet the Form Four (4) students and Form Four (4) teachers. The randomly selected students were issued with questionnaires which they filled in and returned them to the researcher the same day. The teachers also filled their questionnaires and returned them to the researcher as he waited.

3.10 Data analysis techniques

Data was edited first before it was coded. The objectives behind editing were to identify those items that were incorrectly responded to, such as spelling mistakes and blank spaces left unfilled by the respondents. The data was then arranged and analysed according to the research questions. This analysis was done by the aid of Statistical Package of Social Science (SPSS) software.

1) Quantitative data analysis

Quantitative data collected was tabulated and analysed using frequencies and percentages for performance grades obtained in KCSE. Research question 1 data was analysed by use of frequencies and compared with students' performance data. Research questions 2 and 6 data involved tabulating the frequencies for social classroom interactions and it was then compared with the students' performance. Chi Square and Correlations statistics was used in analysing data on research question 3, 4 and 6 on the influence of gender stereotypes on male and female students' academic performance, family factors and the type of school attended. This was then compared with students' results in Kenya Certificate of Secondary Education (KCSE). Data was also organized for Yes/No items and the responses were analysed through the use of SPSS software whereby frequencies and percentages were compared. In order to establish the major social determinants of gender differences in academic performances regression analysis was used at a confidence level of 0.05. In multiple regressions, the regression model is of the form:

$$Y = B_0 + B_1 X_1 + B_2 X_2 + \dots + B_n X_n + E$$

Where: Y- is the dependent variable

X_1, \dots, X_n - are the independent variables B_0 is the constant

B_1, \dots, B_n - are the regression coefficients or change induced in Y by each X_n

E- is the error

Source: Mugenda and Mugenda (1999)

2) Qualitative data analysis

Part B of the teachers' questionnaire and part B of the students' questionnaire yielded qualitative data where teachers and students were giving reasons for the answers given. Questions 2.1b, 5.2 and 8 1, 2, and 3 of the teachers' questionnaire and questions 1 9, 5.1b and questions 8 1,2 and 3 of the students' questionnaires yielded qualitative data whereby the respondents were giving their opinion on social determinants of gender differences in students' performances. In this type of data, coding categories were developed and it involved going through the data, numbering it sequentially and searching through the data for regularities and patterns related to the questions. This was followed by writing down of words and phrases to represent the regularities and patterns. The data was then analysed by aid of the Statistical Package of Social Science (SPSS) software. The data was also analysed qualitatively using narrative descriptions.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter discusses the analysis of the data collected and interprets it in relations to the research questions. The chapter includes an analysis of the questionnaire return rate, general information on students and teachers in this study, discussion on the responses by students and teachers and it ends with suggestions the teachers and students made on ways of improving gender parity in academic performance in secondary schools. The analysis was organised around the research questions asked

4.2 Questionnaire return rate

The study had a target of 355 students and 231 Form Four teachers. The questionnaires that were returned by the students were 342 which represented 95.5 percent return rate. On the teachers questionnaires 175 questionnaires were returned. This was 75.8 percent return rate. This return rate was considered as adequate in providing valid and reliable representation of the target population

4.3 General information on students and teachers in the study

The study sought to establish the professional qualifications of the teachers. The teacher respondents were asked to give their highest professional qualifications. Their responses are given in Table 4.1

Table 4.1
Teachers' professional qualifications

Education level	Frequency	Percent
M Ed	5	2.9
B Ed	94	53.7
B A/B Sc	24	13.7
Diploma in Education/SI	29	16.5
KCSE	14	8.0
B Ed Students	6	3.4
B Com	3	1.8
Total	175	100.0

The result in Table 4.1 shows that most of the teachers were professionally trained and hence they could authoritatively comment on the social determinants of gender differences on students' academic performance. However, there were a few teachers who did not have the necessary qualifications to teach in a secondary school. These were teachers who were mostly employed by the BOGs after the post election

skirmishes of 2007. At this time, people from different ethnic backgrounds were forced out by the local community. This situation created understaffing in the region since some of the qualified teachers moved to other parts of the country, and the Teachers' Service Commission had not as yet hired new personnel in the region. These teachers were mostly KCSE holders who were 80 percent of the respondents.

Figure 4.1

Teachers' in the study by gender

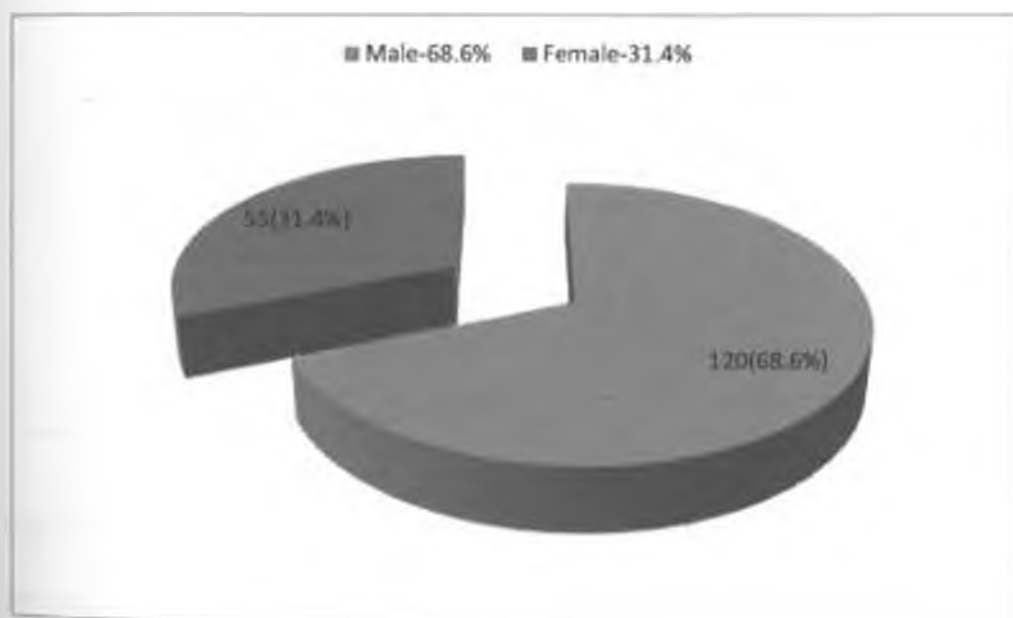


Figure 4.1 shows that majority of the teacher respondents in this study were males. Teachers in rural areas and rural urban schools are mostly men and that could explain the reason why 68.6 percent of the teacher respondents were mostly male. It also

shows that most of the teacher role-models for the girls were males

Figure 4.2

Students' in the study by gender

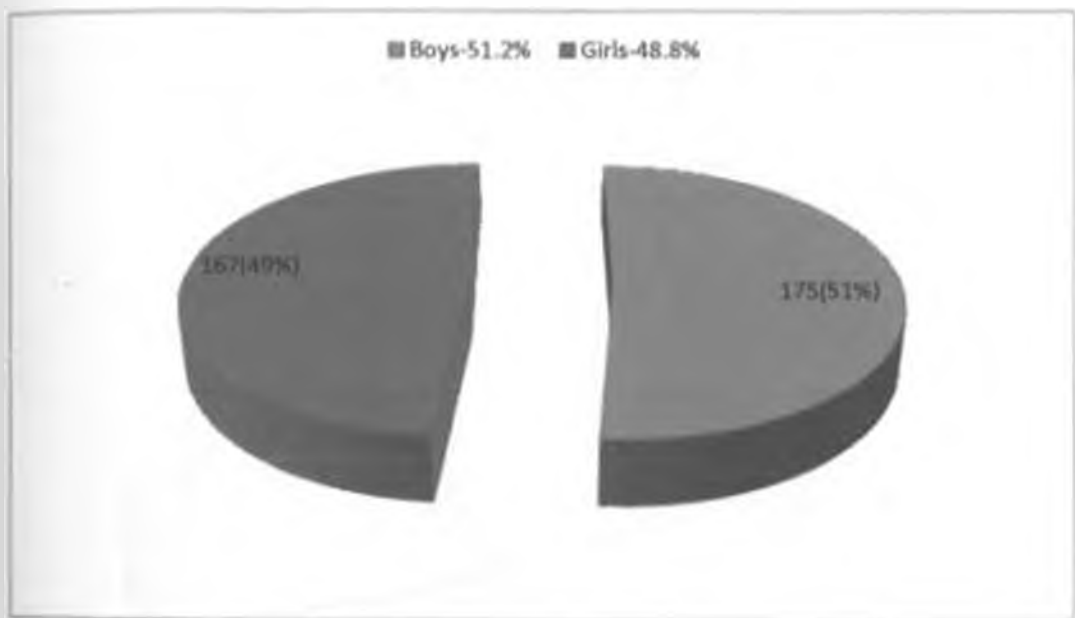


Figure 4.2 show that the study sample was composed of 175 boys representing 51.2 percent of the students' respondents and 167 girls representing 48.8 percent of the respondents. The respondents were from both single and co-educational schools.

4.4 Effects of the type of school attended on students' academic performance

The study sought to find out the effects of the type of school attended on male and female students' academic performance. In order to answer this research question,

several questions were asked. Figure 4.3 shows the general performance of the students by gender and the type of school attended.

Figure 4.3

Single and mixed sex schools students' who scored grade 'C+' to 'A' by gender in 2010 KCSE examinations in Kericho and Kipkelion Districts

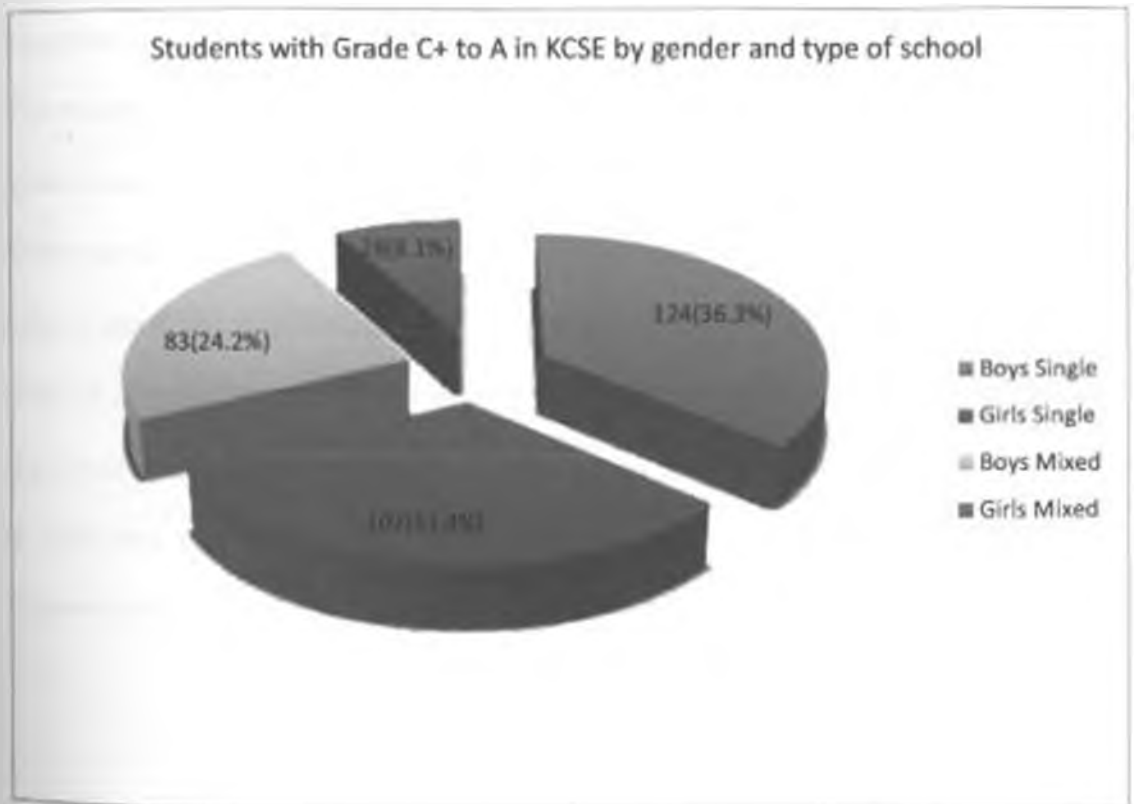


Figure 4.3 shows that 31.4 percent of the girl respondents who attained grade C+ and above were from single sex schools. Girls from mixed school were only 8.1 percent. Boys from mixed sex schools who attained grade C+ and above were 24.2 percent and those from single sex schools were 36.3 percent. This results show that most of the girls in mixed schools did not attain a C+ which is the minimum qualification to join public universities. On the other hand most of the girls from single sex schools had performed better than those from mixed schools. A higher percentage of girls with minimum university qualifications come from single sex schools. Hence, the low transition rate of girls to higher educational institutions as compared to that of boys. The results then show that girls from single sex schools performed better than those from mixed schools. This outcome corroborates with previous research in Sweden by Robinson and Gillibrand (2004) whose findings suggested that girls do better in certain subject areas such as Mathematics and Science when boys are not in class. In another study by Jimenez and Lockheed (1989) who assessed the performance of 3,265 eighth graders in single-sex and co-educational schools in Thailand they found out that girls in girls-only schools scored higher in Mathematics. Table 4.2 shows the grades attained by the students in relation to gender and the type of school attended.

Table 4.2

Grades attained in relation to the type of school attended in 2010 KCSE examinations by gender

Grade	Gender	Type of school attended				Total
		Boys Boarding	Girls Boarding	Mixed Boarding	Mixed Day	
A_A-	Male	8	-	1	-	9
	Female	-	6	-	-	6
	Total	8	6	1	-	15
B+_B	Male	19	-	2	12	33
	Female	-	18	2	1	21
	Total	19	18	4	13	54
B-_C+	Male	17	-	4	20	41
	Female	-	26	7	3	36
	Total	17	26	11	23	77
C_D+	Male	23	-	14	37	74
	Female	-	27	12	28	67
	Total	23	27	26	65	141
D_D-	Male	10	-	-	7	17
	Female	-	2	2	32	36
	Total	10	2	2	39	53
E	Male	-	-	-	1	1
	Female	-	-	-	1	1
	Total	-	-	-	2	2

The results of Table 4.2 show that 24 of the sampled girl candidates who attained grades B and above were from single sex boarding schools. The results of this table also show that 33 girls out of 37 who attained grade 'E' to 'D' were from mixed secondary schools. The results of Table 4.2 were tested for significance of relationship using Chi-square test at a significance level of 0.05 and 15 degrees of freedom by the use of SPSS software. The Chi-square calculated was 68.5 and the critical chi-square at 0.05 level of significance and 15 degrees of freedom was 25.0. The calculated Chi-square was greater than the critical Chi-square at significance level of 0.05. This shows

that there was a significant relationship between the results, gender and the type of school attended. Students in single sex schools performed better than students in mixed schools. Boys in mixed schools also performed better than girls in all the grades. Hence, the type of school one attended was important in determining one's performance in KCSE examinations.

Table 4.3

Students' performance in 2010 KCSE mathematics examinations in relations to the type of school attended

Type of school attended and Maths performance by gender

Grade	Gender	Type of school attended				Total
		Boys Boarding	Girls Boarding	Mixed Boarding	Mixed Day	
A_A-	Male	16	-	3	7	26
	Female	-	7	1	1	9
	Total	16	7	4	8	35
B+_B	Male	13	-	1	11	25
	Female	-	11	1	-	12
	Total	13	11	2	11	37
B- C+	Male	6	-	4	9	19
	Female	-	8	5	1	14
	Total	6	8	9	10	33
C_D-	Male	16	-	4	19	39
	Female	-	25	8	8	41
	Total	16	25	12	27	80
D_D-	Male	25	-	6	26	57
	Female	-	27	4	32	63
	Total	25	27	10	58	120
E	Male	1	-	3	5	9
	Female	-	1	4	23	28
	Total	1	1	7	28	37

The results in Table 4.3 show that girls in mixed schools performed poorly in mathematics. Only one girl in mixed schools from the sampled schools managed an

'A' grade in Mathematics while there were 7 boys with grade 'A'. The results of Table 4.3 were tested for significance of relationship using Chi-square test at a significance level of 0.05. The Chi-square calculated was 57.3 and the critical Chi-square was 37.6 at 0.05 significance level and 15 degrees of freedom. The calculated Chi-square was greater than the critical Chi-square at a significance level of 0.05. This shows that there was a relationship between Mathematics result, gender and the type of school attended. In single sex boarding schools girls performed better in Mathematics, scoring higher grades than girls in mixed schools. Hence, the type of school students attended had an effect on students' performance in Mathematics.

Table 4.4

Teachers' opinion on whether girls in mixed schools have equal chances as boys to develop their potential

Response	Frequency	Percent
Strongly agree	39	22.3
Agree	78	44.6
Not sure	15	8.6
Disagree	37	21.1
Strongly disagree	6	3.4
Total	175	100.0

From Table 4.4 above, 23.3 percent and 44.6 percent of the teacher respondents either strongly agreed or agreed respectively that in mixed schools girls were rarely given a chance to develop their potential. In this case boys would outperform girls since they have better chances of developing their potential. According to Mendick (2005), schools serve as sites for the construction of masculinity and femininity. Thus, subjects like Mathematics and Physics, may become constructed as masculine making female students not to choose the subject and hence, limiting their potential. Studies carried out in the UK by Francis (2000) also show that there are many distractions for girls in mixed schools. Students were also asked to rate the participation of boys in mixed schools and the outcomes are shown in Table 4.5.

Table 4.5

Students' rating of voluntary participation of boys in mixed schools

Response	Frequency	Percent
Very good	54	15.8
Good	88	25.7
Average	149	43.6
Poor	39	11.4
Very poor	10	2.9
No response	2	0.6
Total	342	100.0

The results of Table 4.5 show that although 43.6 percent of the students rated boys' participation in mixed classes as average. The results also show that 25.7 percent and 15.8 percent of the respondents rated boys' voluntary participation as good and very good respectively. A research in England by Warrington and Young (2000) had found out that the presence of boys in the classroom had a negative effect on girls' academic performance. Boys freely contributed and dominated in classroom activities unlike girls. Boys did not wait to be asked questions but actively volunteered to answer them. Students rating of girls participations are shown in Table 4.6.

Table 4.6

Students' rating of voluntary participation of girls in mixed schools

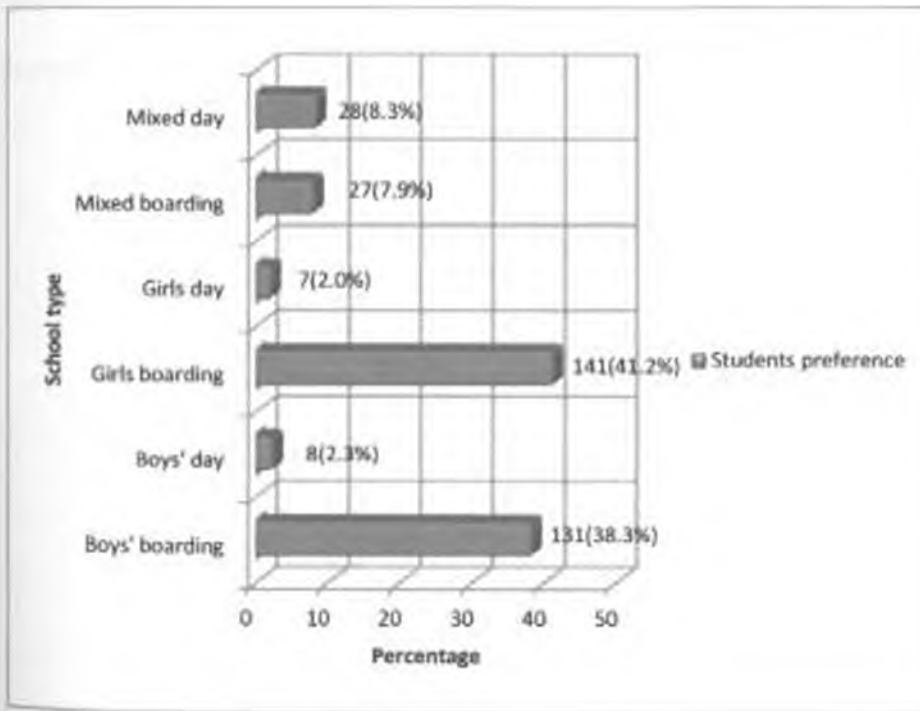
Response	Frequency	Percent
Very good	46	13.5
Good	55	16.2
Average	145	42.4
Poor	77	22.5
Very poor	19	5.6
Total	342	100.0

The result of Table 4.6 show that 42.4 percent of the student respondents rated girls as average in classroom participation. The table also show that 22.5 percent of the students respondent rated girls' voluntary participations in mixed schools as poor.

compared 14.7 of boys. The difference in percentage is minimal but it might indicate that there were limitations for girls in mixed schools in terms of academic participation. From the literature reviewed girls were intimidated by boys in mixed schools and they could not fully exploit their potential. Girls had been brought up in a patriarchal society which believed that boys were more intelligent than them. They also believed that girls could not ask questions in class in the presence of boys whom they thought that they were cleverer than them (Jones & Dindia, 2004; Patchen, 2006). Figure 4.4 shows the type of schools students would have preferred.

Figure 4.4

Type of school preferred by students



The results of Figure 4.4 show that 38.3 percent and 41.2 percent of male and female students' respondents respectively preferred single sex boarding schools. Only 16.2 percent of the student respondents would have preferred to be in a mixed school. Hence, it could be inferred that majority of the students in mixed secondary schools could be assumed that they felt they preferred single sex schools. The results show that students also felt that they could do better in single sex boarding schools than in mixed day or mixed boarding schools. Malacove (2007) had also found out that both boys and girls in single sex schools in the UK had a performance advantage to students in mixed schools. The environment especially in single sex boarding schools was found to be more conducive for both boys and girls, as there were fewer distractions from the opposite sex and less gender stereotypes. In Figure 4.5 teachers have given the type of school they preferred

Figure 4.5

Type of school preferred by teachers

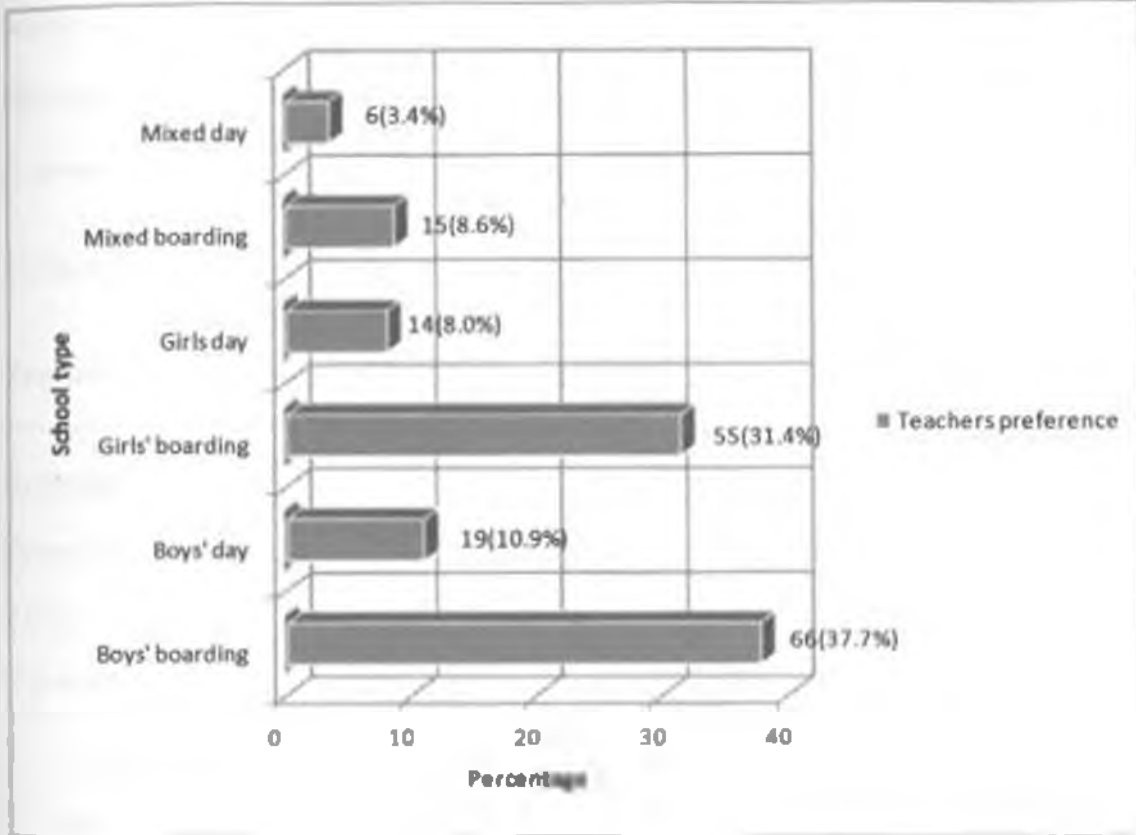


Figure 4.5 shows that 37.7 percent and 31.4 percent of teacher respondents preferred to teach in single sex boys boarding and single sex girls' boarding schools respectively. The figure also shows that only 12.0 percent of the teacher respondents preferred to teach in mixed schools. This inferred that teacher's classroom delivery in mixed schools could be hampered by teachers' perception. It could also be inferred from Figure 4.5 that majority of the teachers' in mixed schools wanted to move to single sex schools. If teachers had negative attitude towards mixed schools, this could affect the

outcome of this schools in the national examinations as it hampered teachers' classroom delivery. Teachers were mostly consulted by the students as seen elsewhere in this study, and if they had negative attitude towards these schools then their output would be affected. The outcome of this study then shows that both students and teachers did not prefer mixed schools. Teachers in Table 4.17 have given their responses on whether girls were more passive than boys in mixed schools.

Table 4.7

Teachers' responses on whether in mixed schools girls are more passive than boys

Response	Frequency	Percent
Strongly agree	32	18.3
Agree	75	42.9
Not sure	17	9.7
Disagree	44	25.1
Strongly disagree	4	2.3
No response	3	1.7
Total	175	100.0

According to the results of Table 4.7, 18.6 percent and 43.6 percent of the teacher respondents either strongly agreed or agreed respectively that in mixed schools girls were more passive than boys. This view could make teachers to concentrate more on boys academic achievements than for girls. This may contribute to a difference in

outcome of this schools in the national examinations as it hampered teachers' classroom delivery. Teachers were mostly consulted by the students as seen elsewhere in this study, and if they had negative attitude towards these schools then their output would be affected. The outcome of this study then shows that both students and teachers did not prefer mixed schools. Teachers in Table 4.17 have given their responses on whether girls were more passive than boys in mixed schools.

Table 4.7

Teachers' responses on whether in mixed schools girls are more passive than boys

Response	Frequency	Percent
Strongly agree	32	18.3
Agree	75	42.9
Not sure	17	9.7
Disagree	44	25.1
Strongly disagree	4	2.3
No response	3	1.7
Total	175	100.0

According to the results of Table 4.7, 18.6 percent and 43.6 percent of the teacher respondents either strongly agreed or agreed respectively that in mixed schools girls were more passive than boys. This view could make teachers to concentrate more on boys academic achievements than for girls. This may contribute to a difference in

performance between boys and girls. This outcome was in agreement with previous research carried out in American schools that found out that boys were more assertive in the classrooms than girls (Sax, 2010). The researcher further found out that female graduates of single sex schools had more confidence than female graduates from mixed schools. Table 4.8 show teachers' responses on whether girls have a chance to develop to their potential in mixed schools.

Table 4.8

Teachers' responses on whether girls have a chance to develop their potential in mixed schools

Respondents	Frequency	Percent
Strongly agree	39	22.3
Agree	78	44.6
Not sure	15	8.6
Disagree	37	21.1
Strongly Disagree	6	3.4
Total	175	100.0

According to Table 4.8, 22.3 percent and 44.6 percent of the teacher respondents either strongly agreed or agreed respectively that in mixed schools, girls are not given a chance to develop their potential academically. This meant that in mixed schools the environment was not favourable for girls. Teachers are mainly entrusted with the

curriculum delivery and interpretations, and students had very high regard for their teachers as seen in Figure 4.15. Teachers on the other hand, had been found to have poor attitude towards girls' academic performance as compared to that of boys as seen in Table 4.36 in this study. Boys dominated in mixed classes and girls remained passive. Studies conducted elsewhere have shown that girls in single sex classes were actually more likely to act outside of traditional gender roles exploiting their potential (Ferrara, 2007). The research further found out that in mixed schools there was a hidden pressure towards gender stereotyping in the classroom. This did not favour the performance of girls. In this study it was also found out that in girls' only schools, girls scored higher in mathematics than in mixed schools. Table 4.9 shows whether mixed schools put more pressure on boys to outperform the girls.

Table 4.9

Teachers' responses on whether mixed schools put more pressure on boys to outperform the girls

Response	Frequency	Percent
Strongly agree	37	21.1
Agree	67	39.4
Not sure	18	10.3
Disagree	39	22.3
Strongly Disagree	12	6.9
Total	175	100.0

According to the results of Table 4.9, 21.1 percent and 39.4 percent of teacher respondents either strongly agreed or agreed respectively that coeducational schools' had put more pressure on boys to outperform the girls. Mixed schools are seen as more favourable academically to boys than girls. Girls were easily distracted by the boys and this affected their academic concentration. For decades, the presumption was that coeducational schools provided a more equitable environment for learning. In recent years a number of researchers have built an increasing persuasive case that coeducational schools in many cases are not educating girls as well as boys to compete at par. The research by Sax (2010) found out that students in mixed schools were unable to explore into non-traditional academic areas. In mixed schools girls limited their potential as they could not undertake subjects like Mathematics and Science as they felt these subjects were reserved for boys. These attitudes were further reinforced by their teachers who felt that boys were better in Science and Mathematics subjects than were girls. In this scenario, boys had to excel in order to prove that they were better than girls.

4.5 Influence of patriarchal society on students' gender academic performance

The study sought to find out the influence of patriarchal society on male and female students' academic performance. On the item on whether the community the respondents come from expected a boy or a girl to perform better in school, the majority of the student respondents at 79.8 percent responded that a boy was better

than a girl in terms of academic performance. These responses reflect the societal beliefs on the role of the boy child in the society. Table 4.10 shows the communities beliefs on the academic superiority of the boy.

Table 4.10

Students' responses on whether the community socialized a boy into academic superiority

Response	Frequency	Percent
Strongly agree	79	23.1
Agree	145	42.4
Not sure	22	6.4
Disagree	75	21.9
Strongly disagree	21	6.1
Total	342	100.0

The results of Table 4.10 show that 23.1 percent and 42.4 percent of the student respondents either strongly agreed or agreed respectively that the community they came from socialised a boy into academic superiority compared to a girl. In most of the African countries boys are socialised into believing that they are better than girls in all ways (Mill, 2006). This scenario pushed boys to maximize their potential so that they are not defeated by girls. This view is supported by McFadden (2003) who argues

that ideologies frustrate well balanced interpretations of reality. In this society socialisation of a gendered society is propagated. The female students are socialised to accept their subsequent subservient position in society and presumed inferiority is seen as natural and it cannot be changed. In this kind of society a girl is socialised into pleasing one's future husband as well as being a gentle and obedient wife.

Table 4.11

Students' responses on whether negative attitudes by the society contributed to a girls' poor academic performance

Response	Frequency	Percent
Strongly agree	140	40.9
Agree	132	38.6
Not sure	6	1.8
Disagree	44	12.9
Strongly disagree	20	5.8
Total	342	100.0

The results of Table 4.11 shows that 40.9 percent and 38.6 percent of the students' either strongly agreed or agreed that negative attitudes by the society towards a girl's education contributed to her poor performance compared to that of a boy. Girls who grew up in a society that undermines the intelligence of the girl child in favour of that of a boy are not able to maximize their potential. This made girls lose their self esteem

A girl was instead socialised to become a mother, soft, emotionally sensitive, and to have all 'motherhood' features. Furthermore, boys who cried easily were shy or avoided fights, were often scolded by their parents for behaving like girls. Patriarchal society in which boys and girls grew up into shaped and perpetuated gender inequality to an extent of allowing male domination and female subordination (Bakare-Yusuf, 2003)

Table 4.12

Students' responses on whether girls were encouraged to excel more than boys in patriarchal society

Response	Frequency	Percent
Strongly agree	24	7.0
Agree	44	12.9
Not sure	41	12.0
Disagree	132	38.6
Strongly disagree	101	29.5
Total	342	100.0

The results of Table 4.12 show 38.6 percent and 29.5 percent of the student respondents either disagreed or strongly disagreed that girls' were encouraged to excel in patriarchal society. The results show that only an insignificant number (7.0 percent) strongly agreed that girls were encouraged to excel in patriarchal society. This shows

that patriarchal society did not encourage a girl to perform better than a boy. In many cultures, the male child is preferred to the female child. In many instances, males are socialised to dominate females by right of birth and even if the male child is not the first born in a family, he is automatically considered the head of the household who should protect and look after his sisters (Mill, 2006)

Table 4.13

Teachers' responses on how the society viewed a boy who underperforms in school

Response	Frequency	Percent
The boy is seen as a failure in the community	59	39.9
The boy is seen as a weakling	29	19.6
The boy is seen as not being man enough	22	14.9
The boy is seen as a burden	15	10.1
The boy is despised	11	7.4
He is seen as somebody who cannot provide for his family	6	4.1
It would be understandable if the boy has other talents	5	3.4
He is seen as a bad omen in the society	1	0.6

The results of Table 4.13 show that 39.9 percent of the teacher respondents said that the society looked at a boy who underperforms as a failure. The results also showed that 19.6 percent looks at him as a weakling, 14.9 percent as not being man enough, 10.1 percent as a burden and 7.4 percent as being despised by the society. These kind of societal expectations push a boy to the limit to outshine the girl. The society does not sympathize with a boy who does not perform. The society puts very high standards for the boy to outperform the girl. The boy has to prove that he is able to provide for the family unlike for the girl who even if she does not excel in her studies the society believes that the husband of the girl will always be there for her as a provider (Kambaramu, 2006).

Table 4.14

Teachers' responses on how the society looks at a girl who underperforms in school

Respondents views	Frequency	Percent
It is normal for a girl to underperform	81	54.7
A girl will get married even if she underperforms	31	20.9
Society is sympathetic to a girl who underperforms	21	14.2
A girl who underperforms can use her beauty economically in different ways	12	8.1
A girl who underperforms has other better options like tailoring	3	2.1

According to Table 4.14, majority of the student respondents (54.7 percent) felt that society views a girl who underperforms as a normal occurrence. The results also show that 20.9 percent of the respondents felt that a girl not get married even if she underperforms. These views are different from those expressed for the boy in Table 4.13 where the society was not at all sympathetic with a boy who underperforms unless he had special talents. On the other hand the society did not condemn a girl who underperformed and there were even quite a number of alternatives given for the girl

In such a scenario a girl could become reluctant and she could not exploit her full potential

4.1 Effects of social classroom interactions on students' gender academic performance

This research question was to find out whether social classroom interactions affected male and female students academic performance. The respondents were asked various questions through a questionnaire to establish whether social classroom interactions affected male and female students' academic performance. Students' respondents were asked whether teachers still reinforced the traditional belief of male superiority in the classroom. Students' responses are given in Table 4.15.

Table 4.15

Students' responses on whether teachers reinforced the traditional beliefs of male superiority in the classroom

Response	Frequency	Percent
Strongly agree	75	21.9
Agree	132	38.6
No sure	25	7.3
Disagree	68	19.3
Strongly disagree	42	12.3
Total	342	100.0

Table 4.15 shows that 21.9 percent and 38.6 percent of the student respondents either strongly agreed or agreed respectively that teachers' reinforced the traditional beliefs of male superiority in the community. This shows that teachers did not expect a boy to be defeated by a girl in class. Students believed in the instructions given by their teachers and if their teachers propagated the societal cultural practices that believed in male superiority, this was bound to affect the outcome of classroom instructions. Table 4.17 shows that teachers reinforced these beliefs by referring to academically weak students as being weak like girls. According to previous research carried out in Nigeria by Ifegbesan (2010), teachers tended to stereotype certain subjects as male subjects. A good example was Mathematics and Science whereby teachers believed that boys were better than girls.

Table 4.16

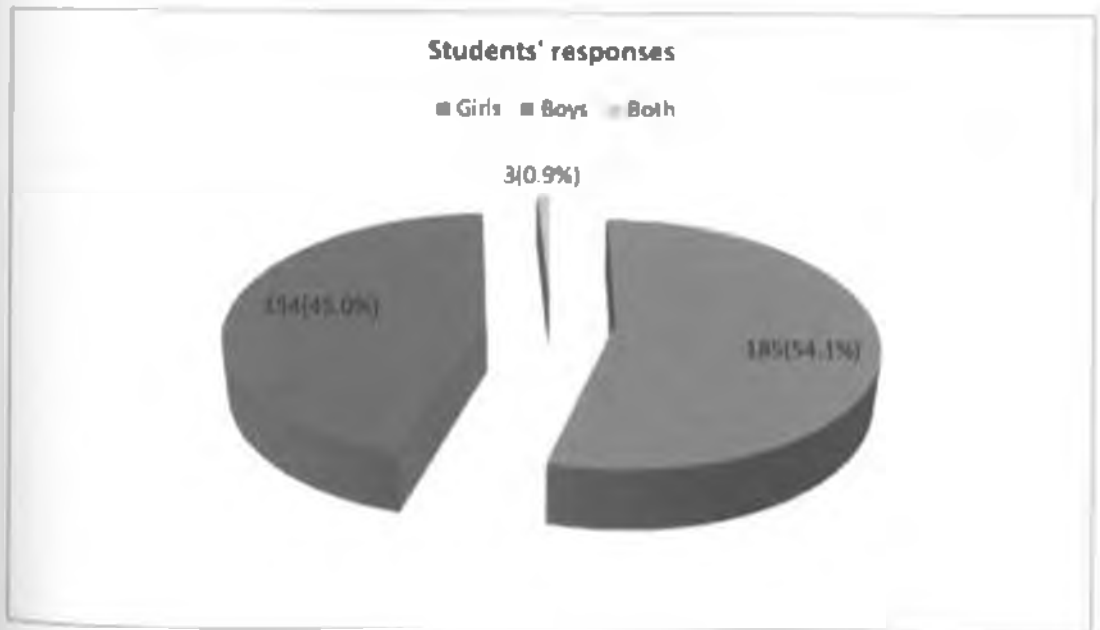
Students' responses on whether girls were passive participants in mixed schools compared to boys

Response	Frequency	Percent
Strongly agree	44	12.9
Agree	139	40.6
Not sure	39	11.4
Disagree	83	24.3
Strongly disagree	37	10.8
Total	342	100.0

According to Table 4.16, 12.9 percent and 40.6 percent of the student respondents either strongly agreed or agreed respectively that in mixed schools, girls were more passive in class than boys. This compared well with the Kenya Certificate of Secondary Education (KCSE) results of the sampled students whereby boys outperformed girls in quality grades in public schools as shown in Table 4.2. According to the traditional upbringing girls were not supposed to express themselves publicly in the presence of their male counterparts. Hence, this could have been the main reason why they did not make any meaningful contributions in class in the presence of boys. Girls rarely volunteered to answer questions in class and this was assumed to mean that they were not knowledgeable with the subject compared to boys.

Figure 4.6

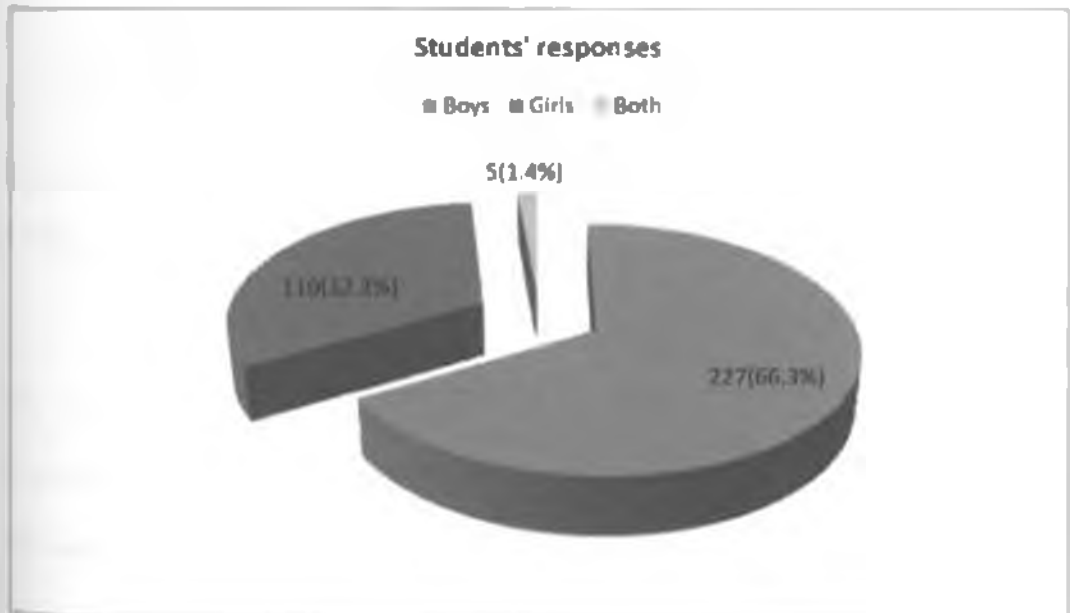
Students' responses on who were more distracted in class between boys and girls



The results of Figure 4.6 show that 54.1 percent of the respondents believed that girls were more distracted by the opposite sex in class than boys. This shows that in a classroom situation boys were able to perform better than girls since they would get few distractions. Due to distractions in the classroom, girls' performance was likely to be affected. Girls are more adversely affected by the boy-girl relationship than boys. Girls may be more emotionally involved in a relationship that they spend much time thinking about it or trying to please the boyfriend and they may also suffer from stress if their relationship does not survive (Warrington & Young, 2001). This could have an effect on the performance of the girls especially in mixed classes.

Figure 4.7

Students' responses on who asks for more clarifications between a boy and a girl in class



The results of Figure 4.7 show that most of the boys (66.3 percent) seek more clarifications from the teachers in mixed schools than girls. In this case, if a girl did not get a concept in class, the probability of her not seeking further help from the teacher was high. Boys on the other hand were courageous enough to seek for teachers help in case a concept was not very clear.

Table 4.17

Students' responses on whether academically weaker boys in school were referred to as being 'weak like girls'

Response	Frequency	Percent
Strongly agree	79	23.1
Agree	157	45.9
Not sure	29	8.5
Disagree	48	14.0
Strongly disagree	29	8.5
Total	342	100.0

The results of Table 4.17 show that 23.1 percent and 45.9 percent of the student respondents either strongly agreed or agreed respectively that during classroom interactions, academically weaker boys were being referred to by the teachers as being 'weak like girls'. This shows that teachers did not expect boys to be outperformed by

girls and that is why male and female students were socialised into believing that academically weak students were as weak as girls. To the girls this meant that there was no problem as long as boys outperformed them. It was seen as abnormal for a girl to excel in a mixed class. Such a statement undermined girls' efforts to excel while boys were not given a choice but to excel academically. To most of the respondents, academic failure was associated with women and academic success was associated with men.

The respondents also gave reasons on who they thought was being asked more questions in class between a boy and a girl and most of the students respondents at 87.1 percent said that boys were asked more difficult questions during classroom interactions. The respondents gave various reasons why they thought that a boy was asked the most difficult questions in class. The respondents' answers are given in table 4.18

Table 4.18

Students' responses on why a girl or a boy was asked the most difficult question in class

Response	Frequency	Percent
A boy is seen as being generally more knowledgeable than a girl	161	47.2
Girls are seen as having low potential	92	27.0
Girls are seen as being shy and not ready to answer questions in class	32	9.4
A boy and a girl are both asked the question to keep them on their toes in class	24	7.0
Girls are more organized than boys	18	5.3
A boy is more prepared than a girl	9	2.6
A girl is asked a more difficult question when a teacher wants to embarrass her	5	1.5

Results from Table 4.18 show that 47.2 percent of the respondents felt that a boy was being asked a difficult question during classroom instructions because he was seen as being more knowledgeable and intelligent than a girl. Table 4.18 also shows that, 27.0 percent of the respondents felt that girls were being seen as having low potential compared to that of boys and hence they were being left out by teachers when it came to asking the most difficult questions in class. It is also interesting to observe that 1.5 percent of the respondents felt that teachers asked girls a difficult question when they

wanted to embarrass them in front of boys and the other students. It could be inferred from the results that if 74.2 percent of the teachers felt that girls could not be asked the most difficult questions, or they had low potential in class, girls' attitude towards some subjects could change for the worst. According to Table 4.26, girls felt they were not proficient enough in some subjects. It could be inferred that girls knew that boys were the front runners academically. Girls could also become complacent because most of the difficult questions were going to be directed to the boys. Table 4.19 shows students' responses on whether boys received more attention in class.

Table 4.19

Students' responses on whether boys receive more attention in class than girls

Response	Frequency	Percent
Strongly agree	97	28.4
Agree	129	37.7
Not sure	34	9.9
Disagree	57	16.7
Strongly disagree	25	7.3
Total	342	100.0

From the results of Table 4.19, 28.4 percent and 37.7 percent either strongly agreed or agreed that boys received more attention in class from teachers than girls. This meant

wanted to embarrass them in front of boys and the other students. It could be inferred from the results that if 74.2 percent of the teachers felt that girls could not be asked the most difficult questions, or they had low potential in class, girls' attitude towards some subjects could change for the worst. According to Table 4.26, girls felt they were not proficient enough in some subjects. It could be inferred that girls knew that boys were the front runners academically. Girls could also become complacent because most of the difficult questions were going to be directed to the boys. Table 4.19 shows students' responses on whether boys received more attention in class.

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Not sure	34	9.9
Disagree	57	16.7
Strongly disagree	25	7.3
Total	342	100.0

From the results of Table 4.19, 28.4 percent and 37.7 percent either strongly agreed or agreed that boys received more attention in class from teachers than girls. This meant

that majority of the girls were left out during classroom interactions and hence they received little help from teachers. This could also mean that in terms of revision and classroom guidance, boys had an upper hand. As seen in Figure 4:10 in this study, boys captured the teachers' attention in class as they were mostly the first ones to voluntarily raise their hands. Teachers also believed that girls' were incompetent in most of the Science subjects. Previous studies by Radeny (2003) found out that boys generally performed better than girls in most of the subjects. About 67 percent of the respondents in that research thought out that boys' performance was better than girls', while only 22 percent thought that there was no difference. It is clear then that teachers' beliefs have had a devastating impact on female students' academic performance.

Table 4.20

Students' responses on whether girls are more active in class than boys in a mixed school

Response	Frequency	Percent
Strongly agree	35	10.2
Agree	49	14.3
Not sure	55	16.1
Disagree	146	42.7
Strongly disagree	57	16.7
Total	342	100.0

According to Table 4.20, 42.7 percent and 16.7 percent of the student respondents either disagreed or strongly disagreed respectively that girls' were more active in class than boys. This outcome confirms the findings from other studies that boys are more active in class than girls in mixed classes. Girls' socialisation does not allow them to be more active than boys in the classroom setup. In the classroom culture, boys were challenged into being active, aggressive and competitive. Previous studies by Einarsson and Granstom (2004) found out that during classroom interactions, females are less likely to engage in risk-taking activities such as asking questions and providing answers than are males. The study also found out that girls were reluctant to take risks in coeducational classrooms in part due to boys' domination.

Table 4.21

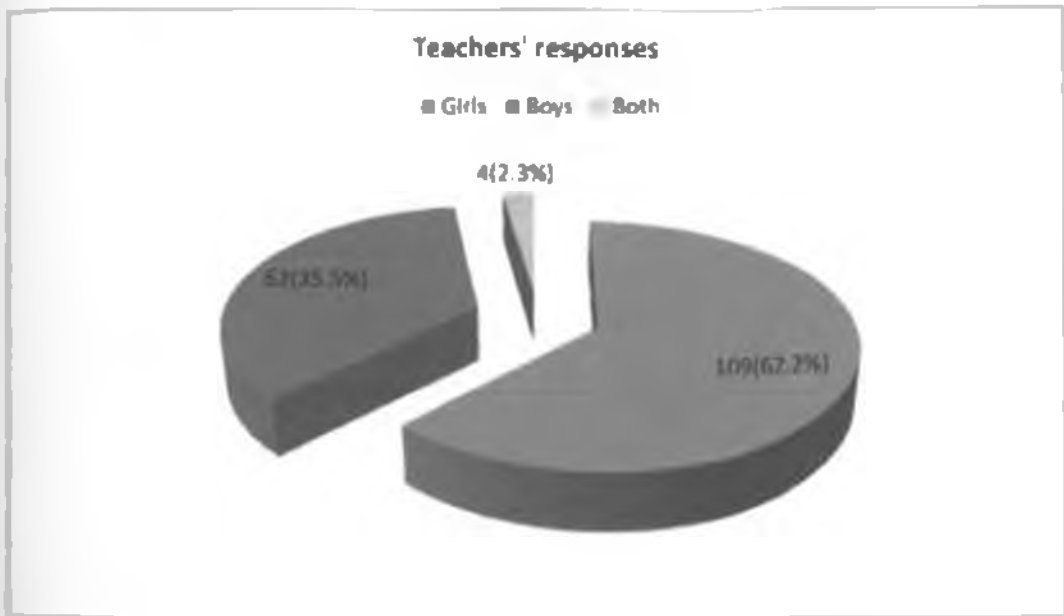
Students' responses on whether teachers encouraged girls to take the same optional subjects as boys

Response	Frequency	Percent
Strongly agree	50	14.6
Agree	58	17.0
Not sure	31	9.1
Disagree	165	48.2
Strongly disagree	38	11.1
Total	342	100.0

The results of Table 4.21 show that 48.2 percent and 11.1 percent of the student respondents either disagreed or strongly disagreed respectively, that teachers encouraged girls to aspire for the same optional subjects like boys. Students' respondents felt that teachers saw boys as having an upper hand in certain subjects. This is because according to Table 4.15, teachers did not believe in girls' ability compared to that of boys. Teachers as members of the larger society did not have confidence on girls taking certain subjects like Mathematics and Sciences. As seen in other studies, teachers believed that males in their classroom when compared to females were more competitive, more logical, more adventurous, volunteered answers more often to mathematical problems enjoyed Mathematics more and were more independent in Mathematics (Warrington & Young, 2001). Teachers also stereotyped Mathematics as a male domain (Banji, Greenwald & Nosed, 2002)

Figure 4.8

Teachers' responses on who were more cautious about their work in class between boys and girls



The results of Figure 4.8 show 62.2 percent of the total teacher respondents felt that girls were more cautious of their work than boys. Only 2.3 percent felt that both boys and girls were cautious with their work. It could be inferred that girls did not want to make a mistake in whatever they were undertaking and in this case they were not willing to take risks in trying new ideas either in class or academically. When it came to answering questions in class, girls were not willing to contribute unless they knew very well that their answers would be correct. From the literature reviewed it is evident

that girls also felt inadequate in the presence of boys as they always thought that boys were more intelligent than them. Being over-cautious with their work made girls lag behind boys as in most of the times they wanted to see the answers boys had given before giving their own.

Table 4.22

Teachers' responses on whether boys preferred a more competitive classroom atmosphere than girls

Response	Frequency	Percent
Strongly agree	39	22.3
Agree	75	42.9
Not sure	19	10.9
Disagree	39	22.2
Strongly disagree	3	1.7
Total	175	100.0

The results of Table 4.22 show that 22.3 percent and 42.9 percent of the teacher respondents either strongly agreed or agreed respectively that boys' needed a more competitive atmosphere than girls to excel. This is contrary to girls' expectations as they did not want a very competitive environment with the boys for them to excel. According to Barquissau and Schmarder (2004), girls mostly excelled through cooperation but not in a competitive atmosphere. In most of the mixed schools there is

normally a lot of competition among boys. This fact is detrimental to female students in realising their full potential not only in the classroom but also in their career choice. Girls excelled more in a situation that was not very competitive.

Table 4.23

Teachers' responses on whether boys contributed more in a mixed class than girls

Response	Frequency	Percent
Strongly agree	35	20.0
Agree	95	54.3
Not sure	8	4.6
Disagree	31	17.7
Strongly disagree	6	3.4
Total	175	100.0

Table 4.23 shows 20.0 percent and 54.3 percent of the teacher respondents were of the opinion that boys contributed more in class than girls. This shows that mixed classes were more conducive for boys than girls. Girls' socialisations made them shy off from classroom contributions which could affect their performance. Boys freely contributed in these classes unlike girls who shied off. In practical subjects boys were the major players. Boys' voluntary contributions could be interpreted by both teachers and

students as a sign of intelligence, ignoring the fact that at times they could be wrong in their contributions. Girls are normally socialised to avoid confrontation of whatever kind with the boys.

Table 4.24

Teachers' responses on whether socialisation of girls at home contributes to their classroom performance

Response	Frequency	Percent
Strongly agree	39	22.3
Agree	95	54.3
Not sure	14	8.0
Disagree	18	10.3
Strongly disagree	6	3.4
No response	3	1.7
Total	175	100.0

According to Table 4.24, 22.3 percent and 54.3 percent of the teacher respondents either strongly agreed or agreed respectively that socialisation of girls at home affected their classroom performance. This is because socialisation normally limited a girl's performance as seen on Table 4.13; a girl was socialised to believe that a boy was better in terms of academic performance than a girl. In most African communities

women were traditionally considered inferior in terms of thinking ability. Such negative attitude can be very destructive to the girl child especially when she has no one to motivate and encourage her. When such attitudes prevail, girls are more likely to be content with poor performance and measure themselves only up to, or even less, to the performance of the boy. Socialisation then was a strong determinant of gender differences in academic performance.

Table 4.25

Teachers' responses on whether socialisation of girls at schools contributed to their participation in classroom discussions

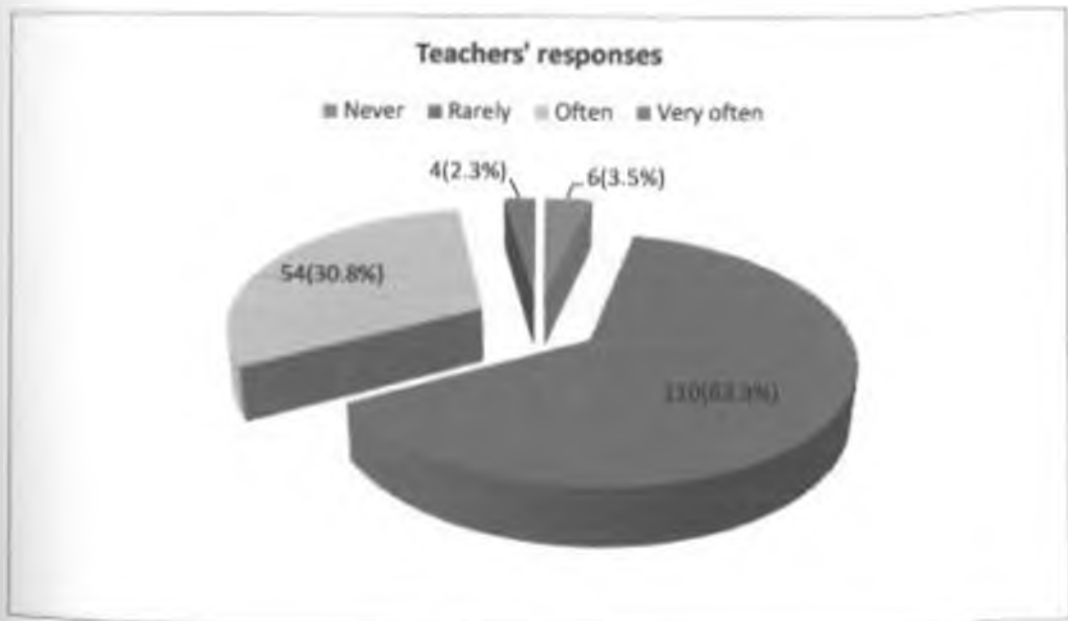
Response	Frequency	Percent
Strongly agree	48	27.4
Agree	94	53.7
Not sure	12	7.0
Disagree	9	5.1
Strongly disagree	9	5.1
No response	3	1.7
Total	175	100.0

Table 4.25 shows that 27.4 percent and 53.7 percent of the teacher respondents either strongly agreed or agreed respectively that socialisation of girls at school affected their academic performance. The teacher respondents stated that socialisation of girls at

school contributed to their class performance and participation in classroom discussions. This is because classroom socialisation at school, like socialisation at home affected girls' academic aspirations. Students and teachers socialised girls not to believe in their academic potential. Schools were known to reinforce sex segregation stereotypes and even discriminations which exaggerated the negative aspects of sex roles in the outside world, when they could be trying to alleviate them (Anderson-levitt, 1998). Schools are seen as active agents in perpetuating the behavioural differences between males and females.

Figure 4.9

Teachers' responses on how often girls asked questions in class

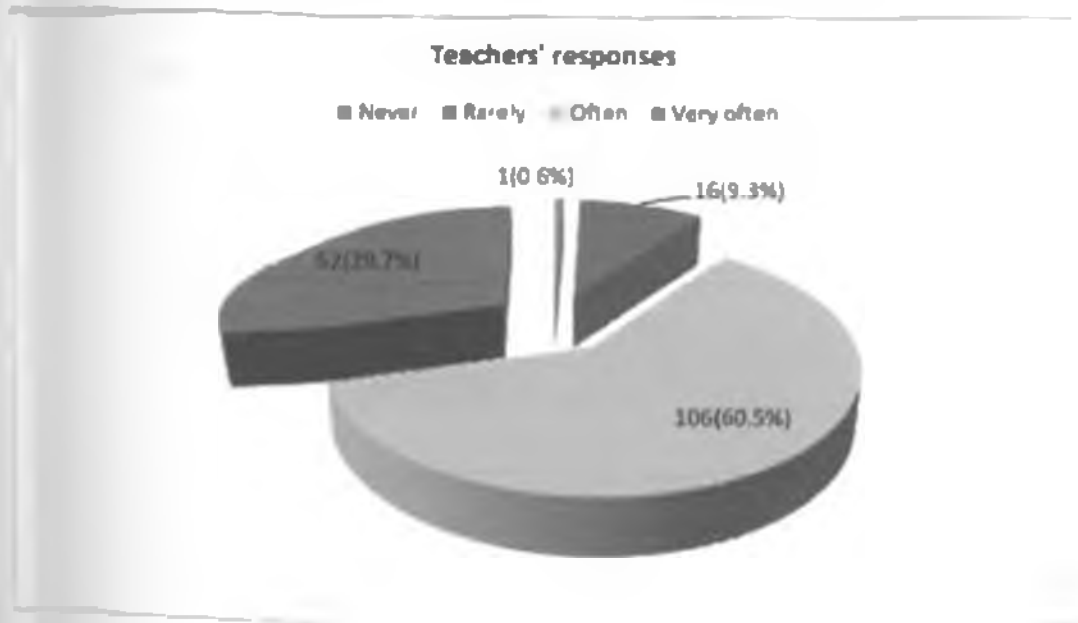


According to Figure 4.9 the results show that 63.3 percent of the teacher respondents stated that girls rarely asked questions in class. This scenario made the boys to

In a classroom, for effective learning to take place, all the participants are supposed to be involved. This was not the case in mixed schools where the major contributors were boys. Previous research suggests that students play an important part in bringing the gender differences in classroom interactions into being. Boys are more likely than girls to create conditions that will be sought by teachers, and they are more likely than girls to push themselves forward when contributors are being selected.

Figure 4.10

Teachers' responses on how often boys asked questions in class



While in Figure 4.9 girls were seen not to be asking questions in class, Figure 4.10 shows that 60.5 percent of the teacher respondents stated that boys often asked questions in class. It is significant to note from the above table that only 9.3 percent of the boys rarely asked questions in class, unlike 63.3 percent of the girls who rarely asked questions in a mixed class. Equally, this means that classroom interactions in mixed schools were the business of the boys who were the main players. The societal expectations were that boys were more courageous, aggressive and were more likely than girls to voluntarily make contributions in class. Teachers also were out to seek for boys' contributions in their lessons and that they treated boys as being more intelligent than girls. Boys also felt more positively about classroom interactions compared to girls. As seen elsewhere in this study, boys who were found to be weak in class were being referred to 'as being weak like girls'.

Table 4.26

Teachers' responses on whether girls feel they are proficient enough in certain subjects like Mathematics in the presence of boys

Response	Frequency	Percent
Strongly agree	24	13.7
Agree	103	58.8
Not sure	12	6.9
Disagree	25	14.3
Strongly disagree	8	4.6
No response	3	1.7
Total	175	100.0

According to Table 4.26, above 13.7 percent and 58.8 percent of the teacher respondents either strongly agreed or agreed respectively that girls felt they were not proficient enough in certain subjects like Mathematics in the presence of boys. This means that if girls-boys classroom interactions were based on the dominance of boys, girls had no chance of moving to the top of the class in academic performance. Through classroom socialisations, girls were socialised into believing that Mathematics and Science subjects were meant for boys. According to Guimond and Roussel (2001) girls were also socialised into believing that they could only fit into humanities and languages subjects. But incidentally, previous studies by Robinson and

Gillidrand (2004) show that girls in single sex schools did not fit into the stereotyped subjects and were able to explore non-traditional gender stereotyped subjects.

4.7 Influence of gender stereotypes on students' academic performance

This research question was to find out the influence of gender stereotypes on male and female students' academic performance. The respondents were asked several questions in response to this question. In one of the items, the results of mathematics examination, the sampled respondents were compared by gender as shown on Table 4.27

Table 4.27
Results of performance in Mathematics in 2010 KCSE examination by gender in Kericho and Kipkelion Districts

Grade	Male		Female		Total Percent
	Frequency	Percent	Frequency	Percent	
A_ A-	26	7.6	9	2.6	10.2
B+ B	25	7.3	12	3.5	10.8
B- C+	19	5.7	14	4.1	9.8
C_ D+	39	11.4	41	11.9	23.3
D_ D-	57	16.7	63	18.4	35.1
B	9	2.6	28	8.2	10.8
Total	167	51.3	175	48.7	100.0

The above Table 4.27 shows that from the sampled respondents, boys outperformed girls in Mathematics. Boys had 7.6 percent of grade 'A' compared to girls 2.6 percent of the same grade. The results of Table 4.27 were tested for significance of relationship using Chi-square test at a significance level of 0.05. The Chi-square calculated was 23.5 and the critical Chi-square at 0.05 significance level was 11.1. The calculated Chi-square was greater than the critical Chi-square at a significance level of 0.05 and 5 degrees of freedom. This shows that there was a significant relationship between Mathematics results and gender. Boys performed better than girls in Mathematics across the board. This shows that gender stereotypes were still upheld in the society in that boys were better than girls in Mathematics. More girls scored grade 'E' than boys. This is in line with the earlier literature review that girls scored poorly than boys in Mathematics due to gender stereotypes in school and in the community that mathematics was a boy's subject.

Table 4.28

Results of the English Language in 2010 KCSE examination by gender in Kericho and Kipkelion Districts

Grade	Male		Female		Total
	Frequency	Percent	Frequency	Percent	Percent
A_A-	6	1.6	5	1.5	3.1
B+_B	18	5.3	30	8.8	14.1
B-_C+	56	16.4	42	12.3	28.7
C_D+	58	16.9	51	14.9	31.8
D_D-	36	10.5	39	11.4	21.9
E	1	0.4	0	Nil	0.4
Total	175	51.1%	167	48.9%	100.0%

Table 4.28 shows that girls had better grades in English language than boys in grades B to A at an aggregate of 10.3 percent against that of boys of 6.9 percent. The results of Table 4.28 were tested for significance of relationship using Chi-square test at a significance level of 0.05. The Chi-square calculated was 6.5 and the critical Chi-square at 0.05 significance level and 5 degrees of freedom was 11.1. The calculated Chi-square was lower than the critical Chi-square at a significance level of 0.05. This shows that there was no significant relationship between English result and gender. This finding was contrary to previous research where girls were found to perform better than boys in English. Boys were found to have performed better than girls in mathematics as shown on table 4.27. In single sex boarding schools girls performed

better in Mathematics, scoring higher grades than girls in mixed schools. On the other hand boys performed better in Mathematics across in both single and mixed schools.

Table 4.29

Students' responses on whether students tend to think boys academically perform better than girls

Response	Frequency	Percent
Strongly agree	53	15.5
Agree	146	42.7
Not sure	20	5.8
Disagree	84	24.6
Strongly disagree	39	11.4
Total	342	100.0

The results of Table 4.29 show that 15.5 percent and 42.7 percent of the student respondents either strongly agreed or agreed that students tend to think that boys academically performed better than girls. Girls who were socialised through this kind of environment would grow up academically without exploiting their full potential as they thought that they were not the best academically. Previous research shows that women often show some degree of belief in or endorsement of the stereotypes that women have worse math and spatial abilities than men (Pronin, Steel & Ross, 2004).

This research for instance had shown that young women believed in societal gender stereotypes. Various research projects have shown that the increased salience of gender stereotypes undermined women's performance on Mathematics' test (Inzlicht & Ben-Zeev, 2000).

Table 4.30

Students' responses on whether men had more mathematical ability than women

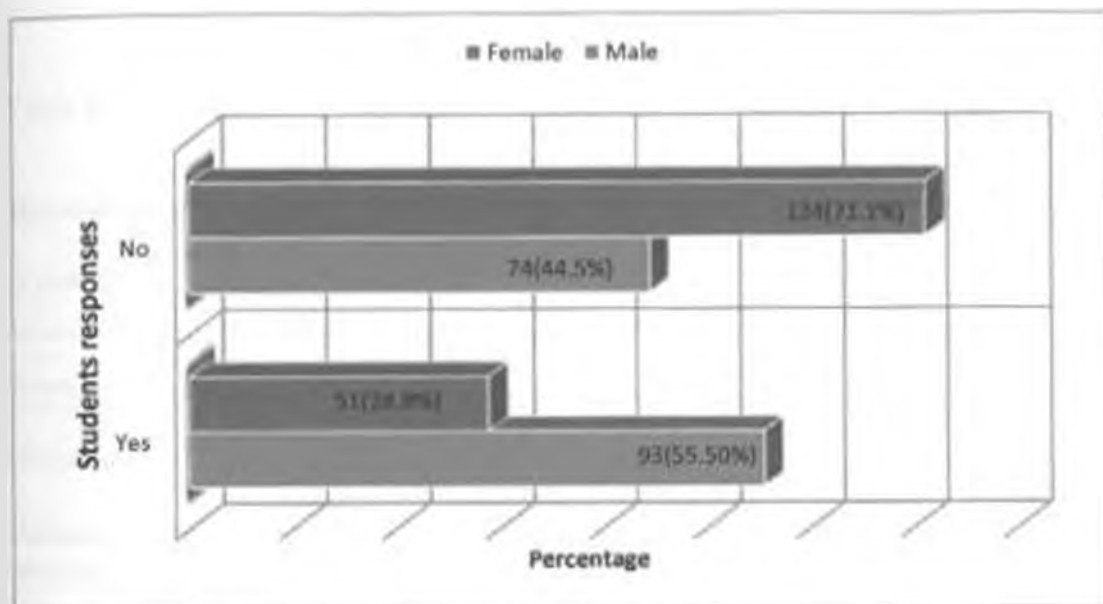
Respondent	Frequency	Percent
Strongly agree	85	24.9
Agree	157	45.9
Not sure	15	4.4
Disagree	47	13.7
Strongly disagree	38	11.1
Total	342	100.0

According to Table 4.30, 24.9 percent and 45.9 percent of the student respondents either strongly agreed or agreed respectively that, men had more mathematical ability than women. Only 13.7 percent and 11.1 percent who either disagreed or strongly disagreed respectively that, men did not have more mathematical ability than women. This kind of thinking would limit girls' performance in mathematics since when students believe that they are unable to compete with boys in mathematics they tend to be complacent that indeed they cannot make it in the world of mathematics. Hence,

they end up endorsing the gender stereotypes that they are poor in mathematics and they cannot get good grades

Figure 4.11

Students' responses on whether they would choose Mathematics if it was an optional subject



The results of Figure 4.11 show that majority of the boys respondents (55.5 percent) would have chosen Mathematics if it was an optional subject. Only 28.9 percent of the girl respondents would have chosen Mathematics as a subject. Majority of the female respondents (71.1 percent) would not have chosen the subject if given an option. This was a clear indication that socialisation of the female students had strengthened the gender stereotypes that Mathematics was not a female subject. It could be inferred

from the above table that women's underperformance in Mathematics was deep rooted in their socialisation and in their attitude that the subject was hard. Boys had a positive attitude towards the subject and thus might be the reason why they performed better than girls in the subject. The above table equally shows that given an option most of the girls would be locked out of Mathematic oriented careers since they would not take Mathematics as a subject. The respondents also gave reasons for either choosing the subject or not choosing it as shown on Table 4.31 below

Table 4.31

Reasons given by student respondents on why students might select mathematics as a subject

Reason	Frequency	Percent
Mathematics is a difficult subject	125	36.5
Mathematics is the key to most subjects	115	33.6
Mathematics concepts are easy to understand	44	12.9
I perform poorly in mathematics	38	11.1
Mathematics helps students to be more creative	9	2.6
I do not need mathematics in my career	6	1.8
Mathematics is a male subject	5	1.5

Table 4.31 shows that 36.5 percent of all the respondents felt that Mathematics was a difficult subject and 33.6 percent felt that Mathematics was the key to most of the subjects and careers in the job market. This is the group that struggled with Mathematics although they did not like the subject because they thought it was the key to their future careers. Majority of the girls felt either they were poor in Mathematics or mathematics was a boy's subject. This kind of attitude would have made girls underperform in Mathematics as shown in Table 4.3 in this study.

Table 4.32

Students' responses on whether a boy is better than a girl in English

Responses	Frequency	Percent
Strongly agree	13	3.8
Agree	36	10.5
Not sure	36	10.5
Disagree	170	49.7
Strongly disagree	87	25.5
Total	342	100.0

The results of Table 4.32 show that 49.7 percent and 25.5 percent of the student respondents either disagreed or strongly disagreed respectively that boys' were better than girls in English. This reflects the traditionally upheld stereotypes that girls are better in English than boys. But contrary to this popular belief the results in this study

did not show a major significant relationship between gender and students' performance in English as shown in Table 4.28 of the sampled students. The margin between girls and boys in English was not as wide as the margin between girls and boys in Mathematics. This shows that boys' efforts to remain the best in terms of academic performance were being upheld.

Table 4.33

Students' responses on what activities girls' were involved in during Biology practicals in mixed schools

Activities	Frequency	Percent
Girls just observed as boys carried out the experiment	127	38.0
Girls were involved in washing/cleaning the instruments	66	19.8
Girls were involved in the distribution of the specimens in class	48	14.4
Girls were involved in drawing the observed parts on the chalk board	42	12.5
Girls were involved in holding the instruments for the boys as they carried out the experiments	29	8.7
Girls were active when it come to food taste	22	6.6

The results of Table 4.33 show that during Biology practicals, majority of the girls at 38.0 percent just observed what the boys were doing. Another group of girls at 19.8 percent were involved in the stereotyped gender role of washing instruments used for the experiment. This shows that during an examination that involved practical test like dissection, majority of the girls in mixed schools did not have enough practical experience as they relied on boys to carry out the experiment exercises for them. Students' socialisations in the society found its way into the classroom whereby the societal division of labour on the basis of gender stereotypes is depicted. This gives an advantage to the boys when it comes to the practical examinations as they were well grounded in terms of practical experience. Examinations were not conducted through group work but individually.

Table 4.34

Students' responses on whether duties allocations in mixed schools were on gender consideration in society

Response	Frequency	Percent
Strongly agree	67	19.6
Agree	142	41.5
Not sure	32	9.4
Disagree	79	23.1
Strongly disagree	22	6.4
Total	342	100.0

The results of Table 4.34 show that 19.6 percent and 41.5 percent of the student respondents either strongly agreed or agreed respectively that whenever duties were being allocated in schools, boys and girls were allocated duties that were considered suitable to them by the society. The societal duty allocations were mainly conducted according to traditional gender roles which were based on gender stereotypes. This allocation limited a girls' potential in exploiting new grounds in her career aspirations and academic progression. As seen in Table 4.33 during practical lessons in Biology, girls were either observing what boys were doing or they were carrying out gender stereotyped duties like washing the instruments as boys performed the experiment.

Table 4.35

Teachers' responses on whether girls were encouraged to pursue careers that would not make them work far away from home

Response	Frequency	Percent
Strongly agree	35	20.0
Agree	75	42.9
Not sure	15	8.6
Disagree	29	16.5
Strongly disagree	21	12.0
Total	175	100.0

According to Table 4.35, the society encouraged girls to pursue stereotyped careers that would not make them work away from home. According to Schoeman (1998), such careers are careers like teaching and nursing that are traditionally seen as feminine. Boys on the other hand are encouraged to undertake careers that are challenging like careers in the military, and company executives. The demands for careers that boys were encouraged to undertake needed students with very high qualifications unlike in careers that girls were encouraged to undertake. In careers that most girls aspired to undertake, they did not need to have very high grades like in the careers aspired by the boys. This would push boys to aim for higher grades in their studies in order to meet the societal demands and expectations.

Table 4.36

Teachers' responses on whether teachers look at a boy as being more dominant in academic performance than a girl

Response	Frequency	Percent
Strongly agree	30	17.1
Agree	78	44.6
Not sure	9	5.1
Disagree	45	25.7
Strongly disagree	13	7.5
Total	175	100.0

According to Table 4.36, 17.1 percent and 44.6 percent of the teacher respondents either strongly agreed or agreed respectively that boys' were more academically dominant in the classroom than girls. This could make teachers who were mostly in contact with the students during classroom interactions to influence girls' performance negatively. During the lessons, teachers tended to call on boys more times than girls because they believed that boys were better than girls academically. Teachers then propagated the societal beliefs on gender stereotypes in the classroom. To them it was not surprising for girls to be beaten by boys academically but it would be surprising for a girl to defeat a boy. This was because girls were generally seen as being weaker than boys in class.

Table 4.37

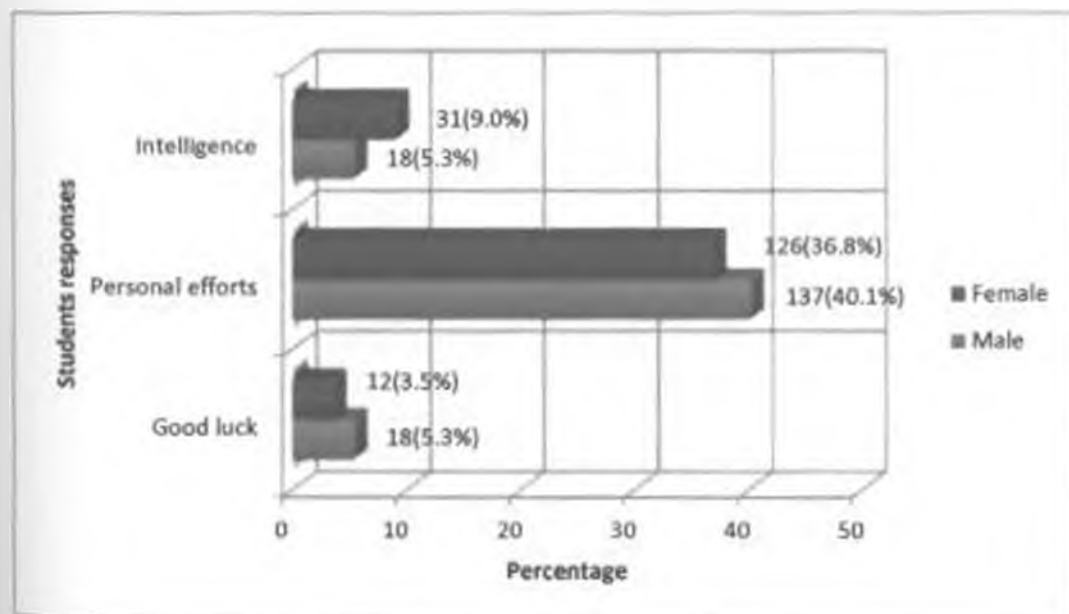
Teachers' responses on whether gender stereotypes limits girls' academic aspirations

Responses	Frequency	Percent
Strongly agree	44	25.1
Agree	84	48.0
Not sure	12	6.9
Disagree	28	16.0
Strongly disagree	4	2.3
No response	3	1.7
Total	175	100.0

The results in Table 4.37 show that 25.1 percent and 48.0 percent of the teacher respondents either strongly agreed or agreed respectively that gender stereotypes limited a girl's performance. This is because gender stereotypes limited a student's performance to what was acceptable and an individual's potential was not taken into account. As shown in Table 4.26, girls believed that they were not able to perform in certain subjects like Mathematics. Gender socialisation begins when a child is born. This socialisation propagated the societal stereotypes that girls were only good in certain subjects like languages and humanities. Boys were also socialised to believe that they were the best in Mathematics and Science and they were not supposed to be defeated in these subjects by the girls.

Figure 4.12

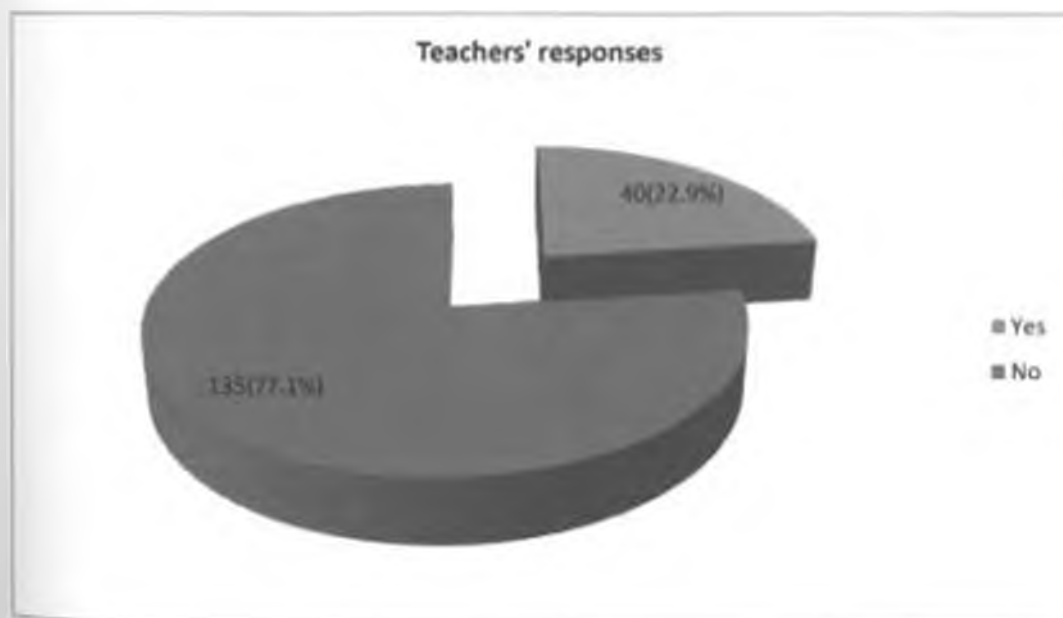
Students' responses on what they associated good academic performance with



The results of Figure 4.12 show that 5.3 percent of the boys associated good performance with luck. On personal effort 40.1 percent of the boys associated good performance with personal effort and 5.3 percent on intelligence, while 9.0 percent of the girls associated good performance with intelligence. Although the differences in the students' responses are not significant, one can note that a higher percentage of boys attributed good academic performance to personal effort, and a higher percentage of girls than boys attributed good performance to intelligence.

Figure 4.13

Teachers' responses on whether students were likely to choose tasks outside the stereotyped gender roles in class



According to Figure 4.13 above, 135 of the teacher respondents representing 77.1 percent, stated that students were not likely to choose tasks that were outside the stereotyped gender roles in class, and only 40 respondents representing 22.9 percent said 'yes'. This results show that majority of the respondents believed that students are not likely to choose roles outside the gender stereotyped roles in the community when carrying out classroom activities. As seen in Table 4.33 during Biology practicals, girls participated in gender stereotyped roles without the teachers prompting them to do so. They were involved in cleaning the instruments and distributing samples to the rest of the students. Boy's socialisation in the community on the other hand made them to believe that cleaning is a duty to be performed by women and they were more comfortable carrying out the experiment as girls watched. Table 4.38 shows the reasons given by the respondents on whether students are likely to choose tasks that are outside the stereotyped gender roles in class.

Table 4.38

Teachers' responses on whether students would choose tasks that are outside the stereotyped gender roles in class

Reason	Frequency	Percent
Students unconsciously behave according to the society's expectations	40	32.8
Students are conditioned to behave as per the society's expectations	23	18.9
Teachers unconsciously assign students stereotyped gender roles in class	12	9.8
They could choose the tasks if they are exposed to western life style	12	9.8
Boys can take female roles and vice versa if in single sex schools	10	8.2
Modern society empowers everybody without discriminations	10	8.2
They cannot choose tasks outside the stereotyped gender roles because of societal socialization	9	7.4
Students are exposed to practical work	6	4.9

The results of Table 4.38 show that 32.8 percent of the teacher respondents stated that students unconsciously behaved according to the societal expectations. Students were also conditioned to behave according to the society's expectations. It was also important to note that students assigned themselves gender stereotyped roles in the Biology class as seen in Table 4.33. Hence, it can be inferred that socialisation was a major determinant on how students choose their roles in the school set up. In most of the cases students' choice of roles was within the societal stereotyped roles. But it was also significant to note that in the absence of the other gender, students choose roles without reference to gender. This shows that students in single sex schools had a wide range of choices to choose from unlike students in mixed schools who were limited by gender stereotypes.

Table 4.39

Teachers' responses on whether gender stereotypes contributed to girls' poor performance in key subjects like Mathematics

Response	Frequency	Percent
Strongly agree	28	16.0
Agree	114	65.1
Not sure	18	10.3
Disagree	12	6.9
Strongly disagree	3	1.7
Total	175	100.0

According to the results of Table 4.39, 16.0 percent and 65.1 percent of the teacher respondents either strongly agreed or agreed respectively that gender stereotypes had contributed to girls' poor performance in key subjects like Mathematics. Gender stereotypes did not encourage a girl to exploit her full potential. This makes students develop certain attitudes towards certain subjects because the society felt that the subjects are not meant for a girl. Girls were socialised into believing that a subject like Mathematics was a boy's subject and so even if a girl obtained low grades, she would be satisfied with her performance because she was brought up believing it was a boy's subject (Stromquist, 2007). According to previous research, emphasizing social learning of the gender stereotypes that Mathematics is not a girls' domain where she could excel, resulted in girls turning away from Mathematics and related subjects (Banaji, Greenwald & Nosek, 2002).

4.8 Influence of family factors on students' gender academic performance

This research question sought to find out the effects of family factors on male and female students' academic performance. The respondents were asked questions in the form of a questionnaire relating to this research question. Table 4.40 shows the relationship between fathers' academic level and students' performance in terms of gender.

Table 4.40

Students' grades in relation to their fathers' highest academic level

Grade	Gender	Fathers highest academic level					Total
		University	College	Secondary	Primary	Never went to school	
A_A-	Male	1	4	2	1	1	9
	Female	1	5	-	-	-	6
	Total	2	9	2	1	1	15
B+_B	Male	6	4	11	7	4	32
	Female	5	11	4	-	1	21
	Total	11	15	15	7	5	53
B-_C+	Male	1	8	7	16	7	39
	Female	9	13	4	5	4	35
	Total	10	21	11	21	11	74
C_D+	Male	2	17	16	23	14	72
	Female	2	11	21	23	7	64
	Total	4	28	37	46	21	136
D_D-	Male	-	4	1	11	1	17
	Female	-	2	6	20	5	33
	Total	-	6	7	31	6	50
E	Male	-	-	-	1	-	1
	Female	-	-	-	1	-	1
	Total	-	-	-	2	-	2

The results of Table 4.40 shows that majority of the girls who had attained grades 'A' to 'B' in their KCSE examination had fathers who had attained at least secondary to university education. This could have been as a result of motivation and encouragement given to these girls by their educated fathers. On the other hand majority of the girls with low grades of 'D' to 'D-' in their examinations had fathers who either never went to school or had attained only primary school level education.

The results of Table 4.40 were tested for significance of relationship using Chi-square test at a significance level of 0.05. The Chi-square calculated was 69.8. The critical Chi-square at 0.05 level of significance and 20 degrees of freedom was 31.4. The calculated Chi-square was greater than the critical Chi-square at a significance level of 0.05. This shows that there was a significant relationship between the students' grades and the fathers' level of academic qualifications. Girls from educated fathers were not seen to be affected by the stereotypes that had an effect on most of the students whose parents had not acquired higher education. Boys could also be said to have been favoured by the patriarchal society which encouraged boys against the girls in terms of academic performance.

Table 4.41

Students' performance in relations to mothers' level of education

Grade	Gender	Students mother highest academic qualifications					Total
		University	College	Secondary	Primary	Never went to school	
A_ A-	Male	.	4	4	1	.	9
	Female	1	4	1	.	.	6
	Total	1	8	5	1	.	15
B_ B	Male	1	5	4	16	7	33
	Female	.	7	3	10	1	21
	Total	1	12	7	26	8	54
B_ C+	Male	1	4	10	18	8	41
	Female	2	15	8	7	4	36
	Total	3	19	18	25	12	77
C_ D+	Male	.	8	15	39	12	74
	Female	3	10	19	29	6	67
	Total	3	18	34	68	18	141
D_ D-	Male	.	.	3	14	.	17
	Female	.	2	6	23	5	36
	Total	.	2	9	37	5	53
E	Male	.	.	.	1	.	1
	Female	.	.	.	1	.	1
	Total	.	.	.	2	.	2

The results from Table 4.41 show that the education level of the mothers affected students' performance by gender. The results of Table 4.40 were tested for significance of relationship using Chi-square test at a significance level of 0.05. The Chi-square calculated was 49.1 and the critical Chi-square at 0.05 level of significance and 20 degrees of Freedom was 31.4. The calculated Chi-square was greater than the critical Chi-square at a significance level of 0.05. This shows that there was a significant relationship between the students' grades and mothers' education level. The results show that like in Table 4.40 mothers who had higher education did not discriminate between a boy and a girl and they encouraged both girls and boys. Most of the parents who were entangled in cultural beliefs and practices did not motivate their daughters into academic excellence as they believed that they would finally get married even after investing in them academically. Such parents believed that girls were a source of wealth. A girl was viewed as a stranger who was in the family only temporarily.

Table 4.42**Students type of family background and gender performance**

Grades	Gender	Type of family students come from			Total
		Single	Monogamous	Polygamous	
A_A-	Male	1	6	2	9
	Female	-	6	-	6
	Total	1	12	2	15
B+_B	Male	8	19	6	33
	Female	-	20	1	21
	Total	8	39	7	54
B-_C+	Male	5	30	6	41
	Female	3	31	2	36
	Total	8	61	8	77
C_D+	Male	6	64	4	74
	Female	8	53	6	67
	Total	14	117	10	141
D_D-	Male	3	14	-	17
	Female	9	21	6	36
	Total	12	35	6	53
E	Male	-	1	-	1
	Female	-	-	1	1
	Total	-	1	1	2

The results of Table 4.42 show that the type of families students come from affected the outcome of boys and girls academic performance. The results of Table 4.42 were tested for significance of relationship using Chi-square test at a significance level of 0.05. The Chi-square calculated was 19.0. The critical Chi-square at 0.05 level of significance and 10 degrees of freedom was 18.0. The calculated Chi-square was greater than the critical Chi-square at a significance level of 0.05. This shows that there was a significant relationship between the students' grades and the type of family they come from. Girls from monogamous families performed better than girls from polygamous families.

Table 4.43

Students' performance by gender in relation to the family size

Grades	Gender	Students number of brothers and sisters in the family						Total
		1-2	3-4	5-6	7-8	9-10	11-Above	
A_A-	Male	2	1	3	2	-	-	8
	Female	1	1	4	-	-	-	6
	Total	3	2	7	2	-	-	14
B+_B	Male	4	9	5	7	5	3	33
	Female	2	8	7	2	2	-	21
	Total	6	17	12	9	7	3	54
B-_C+	Male	3	9	10	9	3	5	39
	Female	3	10	12	6	3	2	36
	Total	6	19	22	15	6	7	75
C_D+	Male	4	10	20	23	6	8	71
	Female	4	12	19	18	9	5	67
	Total	8	22	39	41	15	13	138
D_D-	Male	-	-	7	5	3	-	15
	Female	2	6	11	6	7	4	36
	Total	2	6	18	11	10	4	51
E	Male	-	-	-	-	-	1	1
	Female	-	1	-	-	-	-	1
	Total	-	1	-	-	-	1	2

The results of Table 4.43 show that girls who attained grade C+ to A were clustered around small size families. The results of Table 4.42 were tested for significance of relationship using Chi-square Test at a significance level of 0.05. The Chi-square calculated was 35.64 and the critical Chi-square at 0.05 level of significance and 20 degrees of freedom was 37.7. The calculated chi-square was lower than the critical Chi-square at a significance level of 0.05. This shows that there was no significant relationship between gender, result and the family size a student come from. Hence, the kind of family a student comes from had no effect on the students' academic performance. This result was contrary to earlier research which showed that girls from

big sized families did not perform as those from small size families. Girls from small sized families had better quality grades than those from big sized families. On the other hand boys were not affected by the size of the family they come from unlike the girls. Boys were found to be evenly distributed across the board. Students with higher grades tended to be more skewed towards a smaller family size unlike students with low grades who tended to be more skewed towards larger sized families.

Table 4.44

Teachers' responses on whether girls from financially stable families excel academically compared to girls from financially unstable homes

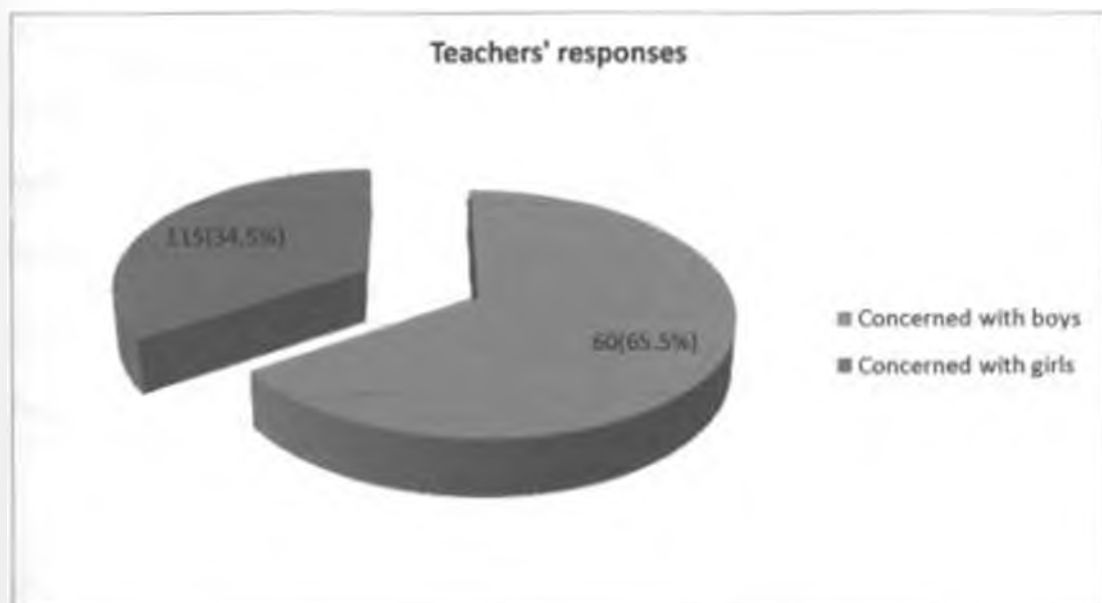
Response	Frequency	Percent
Strongly agree	41	23.4
Agree	67	38.3
Not sure	12	6.9
Disagree	34	19.4
Strongly disagree	21	12.0
Total	175	100.0

The results of Table 4.44 show that 23.4 percent and 38.3 percent of the teacher respondents either strongly agreed or agreed respectively that girls from financially stable families were more likely to perform better than girls from financially unstable

families. This could be attributed to a good conducive atmosphere for girls to do their studies. Most of the parents from financially stable homes were also able to distribute their resources to both girls and boys without any discrimination. On the other hand, parents with low income could be tempted to favour a boy at the expense of a girl.

Figure 4.14

Teachers' responses on whether parents are concerned with girls' education



The results of Figure 4.14 show teachers' responses on whether parents are concerned with girls' education as compared to that of boys. It was found out that the majority of the respondents (65.5 percent) felt that parents were more concerned with boys' education. Only 34.5 percent of the respondents felt that parents were concerned with

girls' education as compared to that of boys'. This shows that most of the parents were more concerned with boys' education than that of girls'

Table 4.45

Teachers' responses on whether girls from educated parents perform better academically

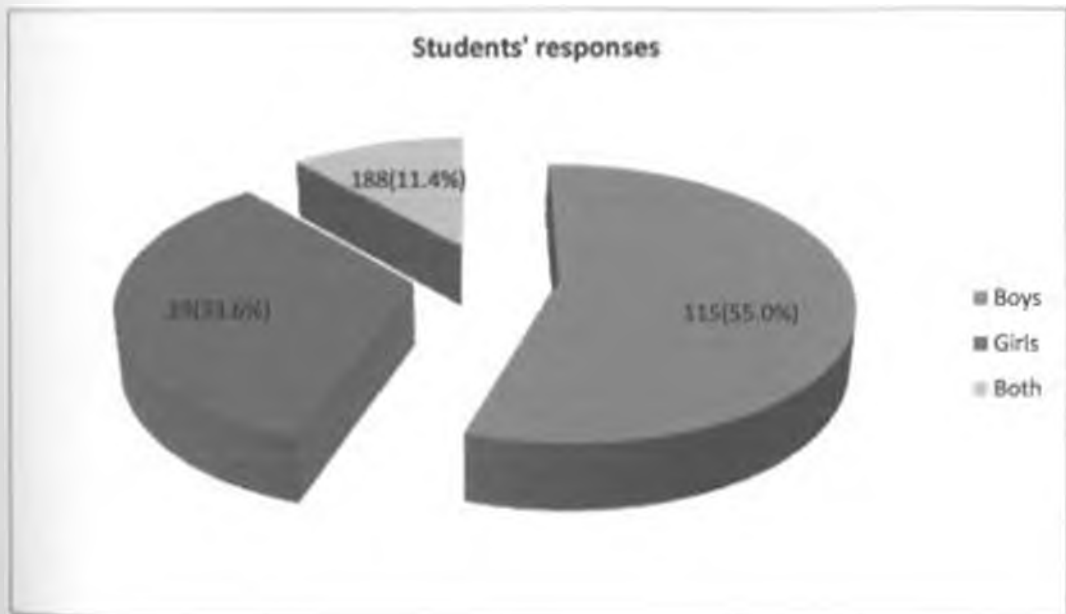
Response	Frequency	Percent
Strongly agree	40	22.9
Agree	65	37.1
Not sure	16	9.1
Disagree	46	26.3
Strongly disagree	8	4.6
Total	175	100.0

The results of Table 4.45 show that 22.9 percent and 37.1 percent of the teacher respondents either strongly agreed or agreed respectively, that girls' whose parents had higher education were likely to perform better than girls from uneducated parents. Educated parents mostly do not peg girls' performance to the traditional gender stereotypes of gender performance. Equally, girls from educated parents received more encouragement from their parents than girls from uneducated parents. Parents who are

educated are also able to equip their sons and daughters with the required learning materials unlike parents who have not gone to school. Educated parents also do not look at their daughters as an investment but they look at the whole idea from the context of empowering them in order for them to face the future with confidence. This then motivates the girls to work hard in school and they do not look at a school from the socio-cultural angle.

Figure 4.15

Students' responses on who was given more encouraging remarks by parents



According to Figure 4.15 majority of the student respondents (55.0 percent) felt that parents gave more encouraging remarks to boys than to girls. Those who felt that girls got more encouraging remarks were 33.6 percent and only 11.4 percent felt that they both got the same kind of encouragements. As seen in other parts of this study, preference for a son existed in the community where this study was carried out. A girl was viewed in relation to another person that is a husband. Many people believed that a girl would finally get married and therefore, they did not have to struggle to educate her. A girl was seen as someone who was not worth investing in since she was to benefit the family to which she was to get married. A boy on the other hand was seen as an investment for the parents and a security against old age. Hence, boys received more encouraging remarks than girls from parents. The Table 4.46 shows an example of the kind of encouraging remarks given by the parents.

Table 4.46

Students' responses on the encouraging remarks given by parents to their sons and daughters

Remarks	Frequency	Percent
Boys should know that they will become heads of their families in future	79	23.2
If a girl is educated she will get a good husband	68	19.9
Parents encouraged both to work hard and to become self reliant	68	19.9
A boy should work hard to become a responsible person in future	47	13.8
A boy should know that a man should never be beaten by a woman academically	29	8.4
A boy should know that a girl will be provided for because she will get married even if she fails her examinations	16	4.7
Girls should become role models	14	4.1
Girls should be careful not to be sexually abused and become pregnant	14	4.1
Boys should know that the parents were ready to educate them to the highest academic level they would want to reach	6	1.8

Table 4.46 shows student respondents' feelings on the encouraging remarks given by parents to their sons and daughters. The results show that 23.2 percent of the respondents felt that boys were encouraged to work hard because they were to become

heads of the family, 19.9 percent were of the opinion that parents felt that if a girl was to be educated she would get a good husband. The results show that boys were given more encouraging positive remarks by their parents than girls. The encouraging remarks given by parents to girls socialised them into inferior positions as they were mainly encouraged to work hard so that they could get good husbands or to avoid being sexually abused. On the other hand, boys were encouraged to excel in examinations because they were to become the heads of their families. Boys were reminded that they were to become heads of their families and at any given time they were never to be beaten academically by girls.

Table 4.47

Teachers' responses on whether most families encouraged a boy more than a girl to excel in education

Response	Frequency	Percent
Strongly agree	31	17.7
Agree	77	44.0
Not sure	11	6.3
Disagree	35	20.0
Strongly disagree	18	10.3
No response	3	1.7
Total	175	100.0

Table 4.47 above shows that 17.7 percent and 44.0 percent of the teacher respondents either strongly agreed or agreed respectively that parents were more likely to encourage a boy more than a girl in academic performance. As shown in Figure 4.14 in this study parents had very high expectations from a boy unlike a girl. This might be the reason why parents encouraged a boy more than a girl. Most of the parents believed that a boy would stay in the family and support them during old age. Those who held this view tended to think in the traditional way of thinking. Previous research by Radeny (2003) found out that this kind of parents did not realize how much and fast society was changing. Girls were increasingly taking positions of authority and leadership and they needed to be encouraged as much as boys.

Table 4.48

Teachers' responses on whether parents are more concerned with girls' education compared to that of boys

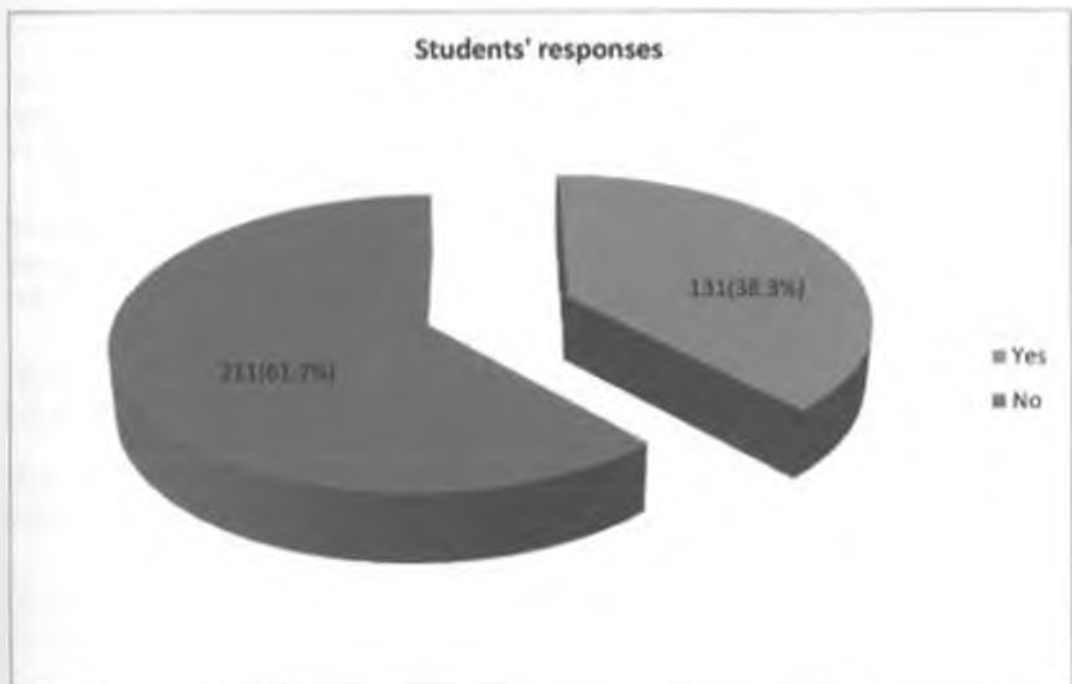
Response	Frequency	Percent
Parents believe that a boy will take care of them at old age	41	31.1
Boys will be the future family bread winners	24	18.2
Parents valued both boys and girls	24	18.2
African traditions value a boy more than a girl	13	9.8
At times girls are given more support than boys in the purchase of school materials	13	9.8
Some believe that if you empower a girl you empower the whole society	13	9.8
The ratio of boys to girls was the same in most schools	4	3.1

According to Table 4.48, 31.1 percent of the respondents felt that parents believed that a boy would take care of them at their old age. Another 18.2 percent felt that boys would be the future family bread winners. It was also important to note that some respondents felt that African traditions valued a boy more than a girl. So, to most of

the parents, girls education was not important as most probably, maybe girls would get married in future. Boys received more support from parents than girls. This could bring about gender differences in performance because boys received both moral and material support from their parents. Girls on the other hand received minimal moral and material support, and this hampered their academic progress.

Figure 4.16

Students' responses on whether parents had the same career expectations for boys as those of girls



The results from Figure 4.16 show that majority of the respondents (61.7 percent) felt that parents did not have the same career expectations for boys as that of girls. Parents had higher career expectations for boys than for girls. Girls were expected to take up stereotyped careers while boys were expected to be engaged in careers that had higher economic returns and social prestige. The reasons for these parental expectations are given in Table 4.49 below.

Table 4.49

Students' responses on why parents had certain career expectations for their children

Response	Frequency	Percent
Parents believe there are careers for boys and there are careers for girls	130	38.0
Parents have higher career standards for boys than for girls.	91	26.6
Parents value both boys and girls	67	19.6
Modern parents do not discriminate	41	12.0
Parents think a girl will get married	8	2.3
Parents think a boy will be a provider	5	1.5

Table 4.49 shows that there were a number of reasons given by the respondents on whether parents had the same career expectations for boys as those for girls. Most of the respondents at 38.0 percent felt that parents believed there were careers for boys and there were careers for girls. The results also show that 26.6 percent of the respondents felt that parents had higher career standards for boys than for girls. Parents wanted the best for boys than for the girls. Some parents thought that girls would get married even after investing on them. On the other hand boys were supposed to be providers and family heads. This could limit girls' aspiration in academic achievements as they were not encouraged to attain higher grades like the boys.

4.9 Effects of peer culture on male and female students' academic performance

This research question was to find out the effects of peer culture on male and female students' academic performance. To answer this research question various questions were asked to the respondents. Table 4.50 shows the responses by the respondents on whether peer groups socialised girls and boys in school to do what the society accepts as boys' and girls' roles in society.

Table 4.50

Students' responses on whether the peer group socialised students to accept gender roles in society

Response	Frequency	Percent
Strongly agree	70	20.5
Agree	134	39.2
Not sure	39	11.4
Disagree	75	21.9
Strongly disagree	24	7.0
Total	342	100.0

From the results of Table 4.50, 20.5 percent and 39.2 percent of the student respondents either strongly agreed or agreed respectively that the peer group socialised boys and girls in school to do what the society accepts as boys' and girls' role in society. This could be seen as the reason why even when it comes to subject choice most of the students based their choices on what was acceptable as either male or female subjects. Equally, during practicals students were assigned roles according to what was acceptable as male and female roles in society. Peer group tended to reinforce gender stereotypical behaviour and punish non-conformity which impacted on students' choices. Hence, in mixed schools, students did not have a choice of exploring new grounds but to obey the wishes of the community and their peers.

Table 4.51

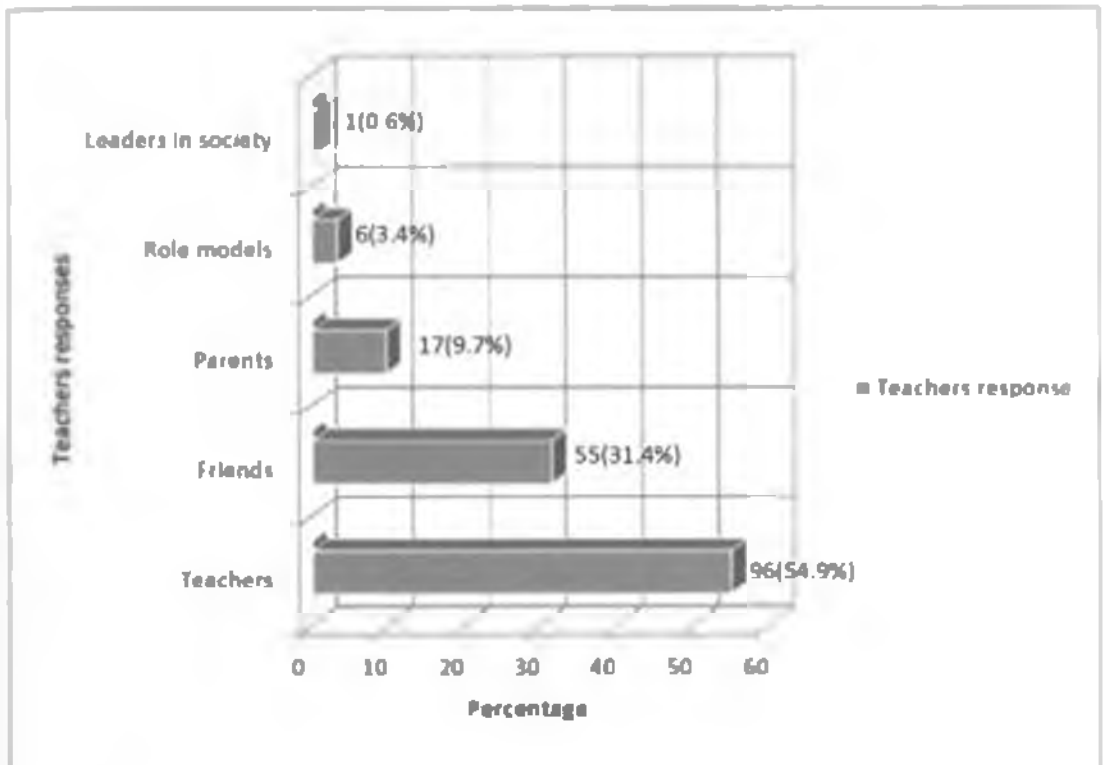
Students' responses on whether peer group accepted students who perform according to the society's expectations

Response	Frequency	Percent
Strongly agree	64	18.7
Agree	117	34.2
Not sure	56	16.4
Disagree	76	22.2
Strongly disagree	29	8.5
Total	342	100.0

The results from Table 4.51 show that 18.7 percent and 34.2 percent of the student respondents either strongly agreed or agreed respectively that the peer group tended to accept students who perform according to the society's expectations. The interactions among peers constitute a major determinant in the gender socialisation process in schools. It is as a result of society's socialisation whereby students were socialised to behave according to the society's expectations. Students who behaved contrary to these expectations were not accepted in their peer groups. It was the peer group that set the rules for socialisations and any member of the peer group that did not conform was severely punished and at times ostracised from the group.

Figure 4.17

Teachers' responses on who had more influence on students' performance



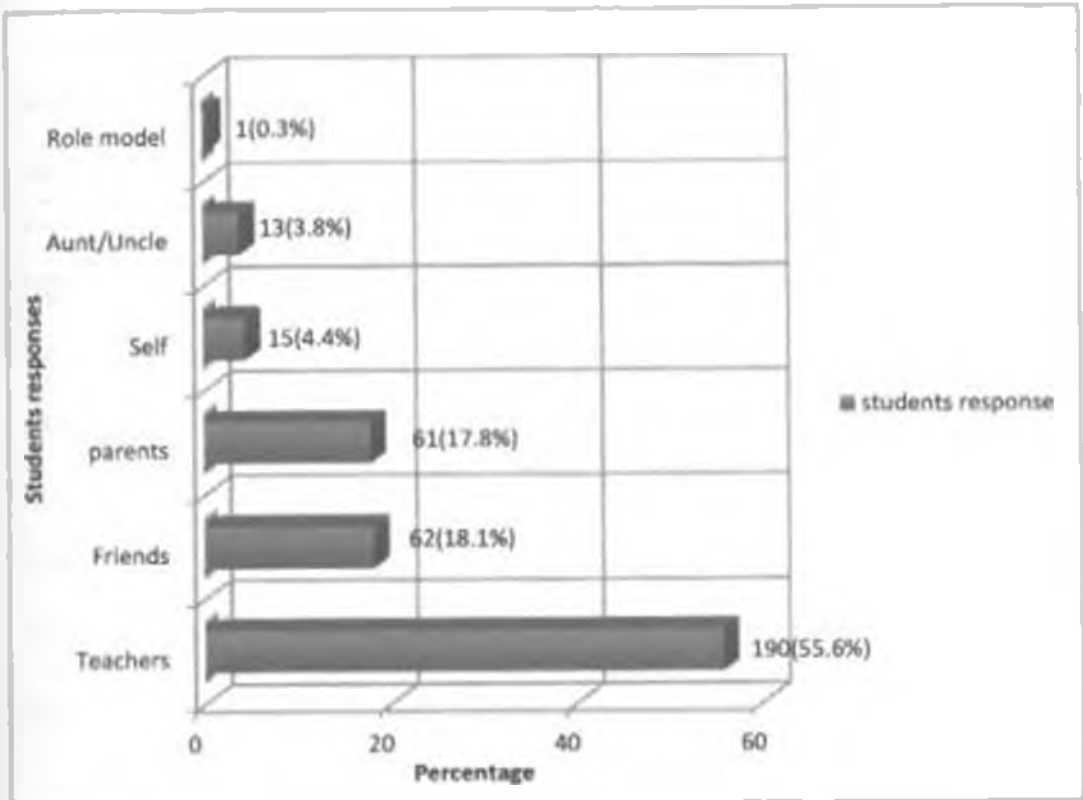
According to Figure 4.17, majority of the teacher respondents (54.9 percent) were of the opinion that teachers were the most influential people in the students' academic performance. It is important to note that only 9.7 percent of the respondents said that parents had an influence on students' academic performance. The above results show that teachers were more influential to students than any other person in their academic life. In other parts of this study, teachers were found to uphold the societal stereotypes which were passed on to the students. This being the case, teachers who were

influential to the students could propagate the gender stereotypes in the society.

Parents were seen as being among the least influential group to the students

Figure 4.18

Students' responses on who mostly influenced them in subject choice



The results of Figure 4.18 show that 55.6 percent of the student respondents felt that teachers played a bigger role in the students' choice of the optional subjects. Friends and parents come at a distant second and third place in influencing students in making

a choice of the optional subjects with 18.1 percent and 17.8 percent respectively. As seen elsewhere in this study, this could have an effect on students' stereotyped choices as most teachers had negative attitudes towards girls' competence in some subjects like Mathematics and Science. Teachers also spent a lot of academic time with the students in school. Hence their word would make a lot of difference in what the students believed in and also their attitude towards a number of issues in the society.

Table 4.52

Teachers' responses on whether peer group socialisation strengthens the society's stereotypes on boys and girls academic abilities

Response	Frequency	Percent
Strongly agree	25	14.3
Agree	90	51.4
Not sure	34	19.4
Disagree	24	13.7
Strongly disagree	2	1.2
Total	175	100.0

The results of Table 4.52 above show that 14.3 percent and 51.4 percent of the teacher respondents either strongly agreed or agreed respectively that peer group socialisation in schools strengthened the societal stereotypes on boys' and girls' abilities in academic performance. This meant that students would only work as hard as the

societal expectations. Boys in this case were believed to have higher abilities than girls. Through socialisation, most of the students had come to believe that boys were superior to girls in society. The peer group also strengthened gender stereotypes by accepting members who conformed to the dictates and demands of the gender stereotypes in society.

Table 4.53

'Teachers' responses on whether peer groups influenced students' choice of elective subjects

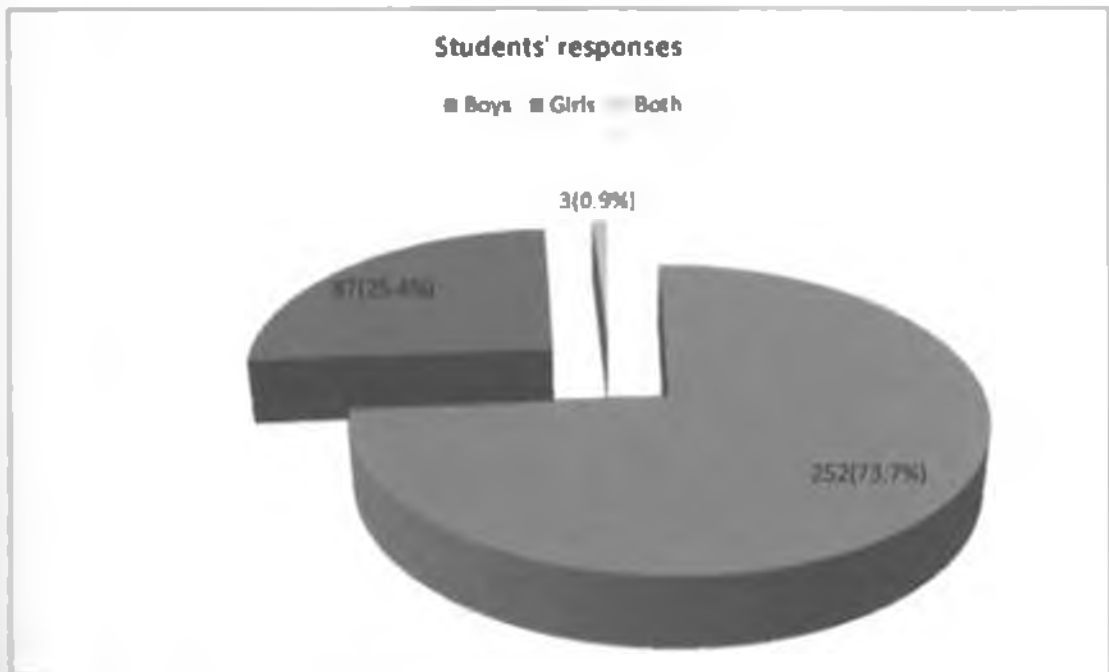
Response	Frequency	Percent
Strongly agree	25	14.3
Agree	126	72.0
Not sure	9	5.1
Disagree	13	7.4
Strongly disagree	2	1.2
Total	175	100.0

The results of Table 4.53 show that 14.3 percent and 72.0 percent of the teacher respondents either strongly agreed or agreed respectively that peer group played a very big role in students' choice of the elective subjects. Only 8.6 of the teacher respondents felt that peer group did not play a big role in students' choice of the elective subjects. In most of the cases, students value their place in group membership.

and they become sensitive on how others viewed them. Previous research by Banerjee and Lintern (2000) found out that children were more likely to act in gender-typed ways when peers were present. Students of the same gender tended to promote gender stereotypes through in-group assimilations. This made peer groups influence members of the group to choose elective subjects according to the tastes of the group membership. In most of the cases these was based on gender stereotypes.

Figure 4.19

Students' responses on whom the peer group expected to perform better in class



The results of Figure 4.19 show that majority of the student respondents (73.7 percent) stated that their peers expected a boy to perform better in class than a girl. This is a reflection of the socialisation processes that boys and girls had gone through in society, that a boy is better than a girl academically. These beliefs also made boys feel that they were academically superior to girls. In most of the cases peers serve as an important source for social comparison that children normally use to evaluate their own achievement and occupational aspirations. It was in this kind of socialisation that the peer group has come to believe that boys are academically superior to girls.

4.10 Suggestions on solving social determinants of gender differences in academic performance

Having looked at various socio-determinants of gender differences in academic performances, the respondents were asked to give suggestions towards solving the issue of gender differences in academic performance in schools. Table 4.54 shows the suggestions given by the student respondents.

Table 4.54

Suggestions on how the government can help in reducing the gender differences in academic performance

Response	Frequency	Percent
Introduce more single sex schools	114	33.3
Through affirmative action	68	19.8
By reducing cultural practices in society	52	15.2
By having equal opportunities for both boys and girls	46	13.5
By educating parents not to discriminate girls	32	9.4
By reducing the rate of girl boy relationship	17	5.0
Enhance free education	9	2.6
Making use of role models	3	0.9
Introduce easier alternative options for mathematics and science subjects	1	0.3

The results of Table 4.54 show that 33.3 percent of the respondents felt that the government should introduce more single sex schools. Single sex schools could have been seen as being more advantageous especially to the girls. The respondents might

have felt that mixed schools were not offering the best to the students and to them single sex schools would have posted better results. A significant number of the respondents also felt that the government should introduce affirmative action for girls if they did not perform as expected. The government could also help in creating equal opportunities for both boys and girls, and also by educating parents not to discriminate against girls. Parents should give equal treatment to girls and boys by meeting their needs and encouraging them to excel in school.

Table 4.55**Suggested reasons on the causes of gender differences in academic performance**

Response	Frequency	Percent
Traditional practices in the community	104	30.4
Girls poor attitude towards some subjects	73	21.3
Societal expectations that a boy is more intelligent than a girl	47	13.7
Boy-girl relationship	41	12.0
Home chores for girls	17	5.0
Girls had more challenges than boys in life which distracted them from their studies	14	4.1
A believe that girls were more passive in class	12	3.5
That girls believed they would get married even if they did not work hard	11	3.2
Lack of hard work by some students	11	3.2
Peer pressure	10	2.9
Category of school one was admitted in	2	0.7

The results of Table 4.55 show that 30.4 percent of the student respondents felt that the major cause of gender differences in academic performance were traditional practices

in the community. Most of the members of the community still believed that a boy was the main investment for the parents. Girls' poor attitude towards some subjects was also seen as a major contributing factor to gender differences in academic performance by 21.3 percent of the respondents. This is confirmed by responses from the respondents in other parts of this study whereby students were seen to have negative attitudes towards some subjects like Mathematics and Science. Majority of the girls had indicated that they would not opt for the subject if they had a choice. The society still felt that a boy was more intelligent than a girl. All these factors did not motivate a girl to excel academically unlike a boy who received all the support from the parents, teachers, peer group and the community. The students' responses were in agreement with the teachers' response as seen in Table 4.57.

Table 4.56**Teachers' suggestions on the causes of gender differences in academic performance**

Response	Frequency	Percent
Girls are discriminated by the traditions	39	26.4
Students attitudes influence performance	34	23.0
Gender stereotypes limit girls potentials	27	18.2
Girls were more affected by peer pressure	17	11.4
Boys received more moral support from the society than girls	13	8.8
Girls were not given enough time for study	6	4.1
There was lack of parental support for girls	4	2.7
Girls lacked role models limiting their potentials	4	2.7
Girls were said to be emotional and this affected their studies	4	2.7

The results of Table 4.56 show that majority of the sampled teacher respondents (26.4 percent) indicated that girls were discriminated by socio-cultural practices in their

society. Equally, they indicated that 23.0 percent of the respondents felt that students' attitudes influenced performance. The teacher respondents also indicated that gender stereotypes in the community limited girls' academic performance. This information confirmed the responses students had given that the main cause of gender differences in students' performance was traditional and socio-cultural beliefs in the society.

4.11 Regression analysis on social determinants of gender differences in academic performance

The findings of this study were subjected to Regression Analysis to establish the major social determinants of gender differences in students' academic performance in Kenya Certificates of Secondary Education (KCSE). The outcomes are shown on Table 4.57 and Table 4.58. Multiple Regression analysis is the determination of statistical relationship between two or more variables.

Table 4.57 shows the summary of regression model on social determinants of gender differences in academic performances.

Table: 4.57

Model summary regression of social determinants of gender differences in academic performance

model	R	R Square	Adjusted R square	Std Error
1	.963 ^a	.927	.925	.669

a. Predictors: (Constant), type of school attended, peer influence, students' gender, patriarchal society, classroom socialisation, family factors and gender stereotypes

Table 4.57 provides the R and R² values. Regression analysis yields a statistics called coefficient of determination or R². The R² refers to the amount of variation explained by the independent variable or variables in the equation. The values of R range from -1 to 1. The absolute value of R indicates the strength, with larger absolute values indicating the strength of the relationship. The R value is 0.963 which represents the multiple correlations and therefore, indicates a high degree of correlation. The R value indicates how much of dependent variable 'performance grade' can be explained by the independent variable i.e. social determinants variables. Adjusted R squared attempts to correct R squared to more closely reflect the goodness of fit of the model in the population. In this case R² is calculated to be 0.927 which means, 92.7 percent of the variations in a given dependent variable can be explained or can be predicted by the variables in the equation.

Table: 4. 58

The regression of social determinants of gender difference in academic performance

Model	Unstandardised coefficients		Standardised coefficients		
	B	Std Error	Beta	t	Sig.
(constant) Students' grade	1.295	.347		3.736	.000
Gender stereotypes	.699	.023	.969	30.988	.000
Students' gender	.440	.090	.090	4.864	.000
Peer groups influence	.351	.102	.065	3.448	.001
Family socialisation factors	.131	.080	.030	1.639	.002
Effects of classroom socialization	.063	.042	.034	1.505	.133
Patriarchal society	-.032	.038	-.015	-.840	.402
Type of school attended	-.051	.062	-.025	-.025	.409

Dependent Variable: Students' performance grades

The coefficients table provides multiple regression information on each variable. This provides the information necessary to predict students' grades on the social determinants of gender differences in students' performance. The Table shows that both the constant (students' grades) and the variables contribute to the model by looking at the significance column at a confidence level of 0.05. According to the table the most significant predictors are gender stereotypes, students' gender, peer groups and family socialisation factors which are equal to the significance level of 0.0 at a confidence level of 0.05. A significance level of below 0.05, shows that there is a

significant influence of the independent variables on the dependent variable. A significance level of more than 0.05 shows there is reduced or minimal influence of the independent variable on the dependent variable. The type of school attended, patriarchal society and classroom socialisation had reduced influence on gender differences in academic performance as they have a significance level above 0.05.

These findings are in corroboration with earlier research on the influence of peer groups and its effects on educational achievement. Kessels' (2005) research in German high schools had found out that peer group tends to reinforce gender stereotypical behavior and punish non-conformity, a situation that had an impact on students' subject choices in schools. The research found out that girls who excelled in physics in particular, considered themselves to be particularly unpopular with boys. There was a strong disincentive for girls to identify overtly with physics if they were to be seen as traditionally feminine. Owens's (2002) qualitative study carried out with five male adult learning groups also revealed that reliance on peer group had an effect on educational outcome.

The research findings were also in corroboration with earlier findings on significant influence of the family socialisation factor on students' academic performance. According to Eccles and Wigfield (2002) and Tuner, Steward and Lapan (2004), a number of studies have shown that parents' gender-stereotyped behavior and

expectations can undermine girls' confidence in their mathematical abilities and eventually discourage them from choosing mathematics-related courses in secondary schools. Duman (2009) in an earlier research in Turkey, found out that more educated parents are more open-minded, more willing to send their children to schools and perceive education more worthy. Although teachers influence is also seen as significant among the variables in this study, it has minimal effect. Teachers are seen as carrying into school the cultural mores and values that are dominant outside of school thereby replicating the gendered assumptions of parents and the society at large. Therefore, gender stereotypes that students carry with them to school from their family socialisation seems to be more significant than the classroom socialisation factors, patriarchal society and the type of school attended and hence their minimal influence on students academic performance in this regression outcome.

4.12 Summary of research findings

The results of this chapter show that the major social determinants of gender differences in academic performance were gender stereotypes, students' gender, family socialisation factors and peer group. The results also show that the type of school attended, patriarchal society and classroom socialisation had minimal or reduced influence on social determinants of gender differences in academic performance. Teachers in the classroom reinforced the traditional belief of the superiority of the boy in academic performance. During classroom interactions, weak boys were being referred to as being weak like girls. Stereotypes limited girls' performance to subjects

that were traditionally seen as girls' subjects. Peer group influenced students to behave according to the society's expectations. Students who behaved contrary to that expectation were not acceptable to their peer group.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter gives a summary of the main findings in this study. It also gives conclusions and recommendations on how to deal with determinants of gender differences in academic performance. The chapter also gives suggestions for further research.

5.2 Summary of the study

The purpose of this study was to investigate the social determinants of gender differences in academic performance in Kericho and Kipkelion Districts. The study then sought to explore the influence of different male and female students' school experiences that affected their academic performances. The study investigated the types of schools attended, influence of patriarchal society, classroom interactions, gender stereotypes, family factors and peer culture and their relations to male and female students' academic performance.

Literature review was carried out in areas related to this study. Most of the literature was mainly from the western world where a lot of studies have been carried out. From the literature review, it was established that little had been done in the area of social determinants of gender differences in academic performance in Kericho and Kipkelion Districts.

The sample for the study consisted of 517 respondents, 342 students and 175 teachers. The study used stratified random sampling to select the students' respondents. The study mainly used two research questionnaires as a source of data collection. Descriptive statistics was used in data analysis. This mainly made use of frequencies and graphical representations through bar graphs and pie charts.

5.3 Findings of the study on the effects of the type of school attended on students' academic performance

The study found out that according to the opinion of the student and teacher respondents, girls in mixed schools were not given a chance to develop their potential due to societal beliefs and socialisation. Most of the times boys dominated the classroom process in mixed schools. The results also show that both teachers and students were in favour of single sex schools whereby 79.5 percent of the respondents felt that single schools were better than mixed schools. Only 8.6 percent and 3.4 percent of the teacher respondents preferred mixed boarding and mixed day schools respectively. Mixed schools also had a lot of challenges that brought about the glaring differences between the performance of girls and boys in KCSE examinations. Girls also did not participate in classroom activities in mixed schools.

In mixed schools, it was found out that girls were called upon less than boys by the teachers, and that boys received more attention when answering questions and they received more encouragement to work through the problems. In mixed classes, teachers encouraged students to maximize their potential based on societal gender

stereotypes. They also believed that boys were more intelligent than girls and all the hard questions were directed to the boys. In mixed schools, girls did not volunteer to contribute to classroom discussions as they shied away from exchanging words with boys in the classroom. Girls' voluntary participation in mixed schools was also rated as average by 42.4 percent of the respondents, poor by 22.5 percent of the respondents and very poor by 5.6 percent of the respondents.

Most of the respondents felt that students especially girls would maximize their potential in single sex classes. In these classes, there were fewer distractions from the students of the opposite sex. Students also felt free to contribute to the lesson without being conscious of the opposite gender. It is evident that students were less affected by gender stereotypes in single sex schools where they were able to explore into nontraditional fields. Girls in single sex schools recorded higher grades than students in mixed schools whereby out of the 64 grade C+ and above scored by the sampled girls, 50 girls representing 78.1 percent were from single sex schools and only 21.9 percent were from mixed schools. They were also found to be more confident and they displayed more leadership skills compared to girls in mixed schools. Equally, boys in single sex schools felt free to be themselves and to explore new fields than when they were in the same class with girls. In single sex schools, boys did not follow the stereotyped gender roles that they had been socialised by the society.

5.3.1 Influence of patriarchal society on male and female students' academic performance

The objective of this study was to find out the determinants of gender differences in academic performance in KCSE examinations. The study has brought to the fore various social determinants of gender differences in academic performance. According to students and teacher respondents, patriarchal society is one of the determinants of gender differences on male and female students' academic performance. The respondents felt that negative attitudes by the patriarchal society towards the education of the girl child had impacted poorly on the education of the girl child. It was felt by the respondents that in patriarchal society a girl child who did not make it academically still had a golden chance of getting married. The same society condemned the underperformance of the boy child. Patriarchal society created an environment that was suitable for the boy child. They felt that a girl would get married and leave but it was not the same for the boy child who was to remain in the family.

The analysis of this study showed that a boy was under great pressure from the society to perform. The socialisation that a boy went through in the patriarchal society made him believe that a girl was inferior in terms of academic performance. A boy who was defeated by a girl in school did not feel as if he was man enough as the society expected him to perform far much better than a girl. A boy who underperformed in class was referred to as being weak as a woman. Patriarchal society generally

undermined the intelligence of women and it perpetuated gender inequality to an extent of allowing male domination in almost every sector

5.3.2 Establish whether social classroom interactions affects male and female students' differently

The study revealed that teachers unconsciously reinforced the traditional beliefs of the male child superiority in academic performance. Girls' socialisation during classroom interactions limited their potential as it tailored them to gender stereotyped careers. During practical lessons and in the sharing of duties in the classroom, girls were relegated to the traditional roles of washing the instruments and distributing of the specimen. Girls did not also seek for clarifications from the teachers whenever they did not get a concept correctly. On the other hand, a boy was courageous enough to seek for the teacher's help inside and outside the classroom. This gave a boy more advantages compared to a girl when it came to academic performance. During classroom interactions, a boy was also seen as being more intelligent than the girl by the teachers and fellow students.

Students were also being socialised to identify with male and female subjects by the teachers. In classroom interactions girls were found to be passive participants, and their traditional socialisation did not allow them to publicly express themselves in the presence of their male counterparts. It was also found out that girls were more adversely affected by the girl-boy relationships in the classroom than boys.

It was also clear from this study that schools reinforced gender stereotypes and sex segregation. Schools were then seen as active agents of perpetuating the behavioural difference between males and females. Classroom interactions were also seen to reflect the gender differences in society because the division of duties in the classrooms were done in line with the gender role stereotypes in society. This scenario also made girls to feel inadequate academically and it was not surprising that they underperformed in their KCSE examinations.

5.3.3 Influence of gender stereotypes on male and female students' academic performance

The results of this study show that gender stereotypes significantly influenced the academic performance of male and female students. According to the respondents gender stereotypes influenced girls and boys in their choice of subjects as seen elsewhere in this research. Subject choices were done through the traditional way of doing things. Boys believed certain subjects like Mathematics were not meant for the girls but for the boys. These stereotypes limited girls' career aspirations as they were socialised to be subordinate to the boys.

Male and female students had been socialised into believing that men were better in mathematics than women. This shows that through socialisation and societal gender stereotypes most of the students had come to believe on the male superiority in the classroom and in subjects like Mathematics and Sciences. Negative stereotypes concerning women's mathematical aptitude might have contributed to their relatively

poor performance and perseverance in mathematical fields. This made most of the female students to feel that if Mathematics was not an optional subject they would not have chosen it as an optional subject.

During practical classes students were assigned duties according to gender stereotypes in society. Teachers also consciously or unconsciously assigned students duties according to gender roles in their communities. In these classes girls either observed boys carrying out the practical work or they were washing the instruments. When it comes to the national examinations, girls had not carried out enough experiments to adequately seat for the practicals in national examinations.

According to students and teacher respondents, parents with low level education were found to encourage boys more than girls because to them, girls were a source of wealth and they were seen as being on transit to different families who would benefit from their education. On the other hand, boys were seen as the custodians of the family interests and they needed to acquire the best academically.

5.3.4 Influence of family factors on male and female students' academic performance

The analysis on the influence of the family factors towards male and female students' academic performance shows that parents were more concerned with the education of the boy unlike that of the girl. It is evident from the respondents that parents gave more encouraging remarks to a boy than they did to a girl. Most of the parents felt that girls would get married and maybe benefit the family where they would get married. A boy

on the other hand was seen as the person to safeguard the family name and take care of his parents at their old age

The outcome of this study also showed that educated parents did not favour either gender. Girls from parents with college or university education had very supportive parents unlike those students whose parents had basic education or had none. The results show that there was a significant relationship at 0.05 significant levels between parents' education and students' performance. Girls whose parents had higher education performed better than girls whose parents had low level education. It can also be said that parents who had higher education had outlived the traditional stereotypes of the superiority of the boy and they treated all the children equally. This motivated students from this kind of families to post more positive results than students from families who had attained minimal level of education.

Parents acted as role models to their sons and daughters and if they were negative about their daughters' education, the girls would continue under-achieving. As seen in this study, parents played a very big role in encouraging their children to academic excellence. Hence they should use positive remarks in order to encourage their children to academic excellence. Parents were found to have constantly reminded their sons that they were to become the custodians of the family wealth and they should perform better academically than their sisters.

5.3.5 Effects of peer culture on male and female students' academic performance

It is evident from the results that peer group influenced students to behave according to the society's expectations. Students who behaved contrary to their peer group expectations were not acceptable to their group. Hence, peer group tended to reinforce the gender stereotypical behaviour and non-conformity was severely punished by a member being ostracised from the group.

It was also important to note that according to the student respondents, teachers had a greater influence on students' academic performance compared to their peer group. Parents were seen as being the least influential to the students' performance. But students acknowledged the role played by their peer group in their choice of the optional subjects.

5.4 Conclusions

The study has brought out to the fore various social determinants of gender differences in academic performance. The study shows that the type of school attended was a determinant on gender difference in academic performance. Girls in single sex schools had better grades than girls in mixed schools. Hence, it is evident that students in single sex schools performed better than students in mixed schools. Girls also performed better in single sex schools than in mixed schools. Boys performed better than girls in mixed schools.

Teachers had also developed a negative attitude towards mixed schools and most of them preferred to teach in single sex schools. Only a few teachers preferred to teach in mixed boarding and in mixed day schools. It is also evident that most students preferred to join single sex schools. This brought about gender differences in performance as teachers and students joined mixed schools with a negative attitude towards them. The type of school attended was then found to be a determinant of gender difference in KCSE performance in secondary schools.

Students in mixed schools felt that they would have performed better in single sex schools than in mixed schools. The study shows that majority of the students respondents felt that teachers' reinforced gender stereotypes of male superiority in class. There were also a number of distractions from the opposite gender and most of the respondents stated that girls were more distracted than boys in mixed classes. Mixed schools were therefore found not to be suitable for the education of girls. Although the schools were more suitable for boys, boys were also found to be far much better off in single sex schools than in mixed schools in terms of exploring into nontraditional stereotyped roles.

The study also showed that patriarchal society negatively affected the academic performance of girls. Majority of the student respondents stated that patriarchal society encouraged boys more than a girls to excel academically. Boys were more favoured by the patriarchal society than girls. Boys' socialisation motivated them to work harder.

than girls both at home and at school. A boy who never performed academically was seen as a failure in the community, a weakling or he was not man enough and was despised by the society. This made boys work hard to attain better grades than girls. The study also found that classroom interaction and socialisation had a negative effect on the performance of girls. Duty allocations and classroom participation was found out to be in favour of the boy. The study showed that teacher respondents stated that patriarchal society felt that it was normal for a girl to underperform in class but it was seen as weakness for boys to underperform. Teachers and peer group also socialised students into believing that boys were better than girls in terms of academic performance.

Gender stereotypes were statistically one of the major determinants of gender differences in academic performance in KCSE examinations. Boys and girls were socialised into believing in the gender stereotypes propagated by the society that boys were more superior to girls in certain subjects. This limited the academic potential of girls to subjects that were seen as being less rigorous. Girls were also socialised and made to believe that they were less intelligent than boys. The study shows that majority of the student respondents felt that men had more mathematical abilities than women. These notions made them believe that even if they did not excel academically, they had another better alternative in marriage. The family also played a significant role in determining the gender differences in academic performance in KCSE examinations. Parents were more concerned with boys' academic performance than with that of girls. Boys also received more encouraging remarks from parents who

were more concerned with boys' academic performance than with that of girls'. But girls from parents with higher education had better grades than girls who had parents who had not gone to school. From the results of regression analysis, the major social determinants of gender differences in academic performance were gender of students, peer group and gender stereotypes.

5.5 Recommendations

Based on the key findings of the study on social determinants of gender differences in academic performance a number of recommendations are made:

1) Address negative attitudes towards the education of the girl

In view of the relatively poor performance of the girl compared to the boy, the society's negative attitude towards the education of the girl should be immediately addressed by the community leaders, the church and the opinion leaders in society. According to this study, the community that the students lived in socialised the boy into academic superiority. The study also showed that negative attitude in society contributed to a girl's poor academic performance. Despite the gender policy put in place in the promotion of girls' education, this largely remains on paper and it has not been implemented. Girl's rights are also abrogated by customary socialisation and practices that exist concurrently with statutory law and are simultaneously applied.

The Ministry of Educations (MOE) should therefore explore new ways of improving

the academic performance of girls, especially in rural areas where traditional patriarchal beliefs are still upheld. This is because although access has been improved, academic achievement in terms of good grades is still dominated by boys. Seminars should, therefore, be intensified by the Ministry and NGOs like FAWE to highlight the plight of girls in academic performance. The Ministry should also study the existing gender policy guidelines in education in order to address their weaknesses.

ii) Address the negative impact of co-educational schools on the education of male and female students

The Ministry of Education, school sponsors, community leaders and parents should address the negative impact of co-educational schools on the education of male and female students. The Ministry should also come up with a policy of doing away with co-educational schools especially at the secondary school level because they have a negative impact on the education of female students. Co-educational schools strengthened the gender stereotypes in society and students in these schools were not able to explore into new nontraditional stereotyped domains like Mathematics for girls. This study therefore recommends that more single sex schools should be introduced in order to improve the performance of the girl child. This would also allow boys to explore in areas like English seen as feminine by the society and the peer group. It has been revealed in this study that students from single sex schools were able to explore in nontraditional areas unlike students in mixed schools. Girls in single sex schools

were also seen to be having more confidence and were found to be in a position to freely ask questions in class. Most of the co-educational schools which produce good results have been found to be two schools in one. That is, girls learn separately from the boys although they are in one school. The phasing out of co-educational schools should be carried out by first having boys and girls learning separately in the same schools where the community cannot afford to build new classes.

iii) Streamlining of gender policies in education

The national policy on gender and development (2002) provides a framework for the state to reduce gender imbalance and inequality. The policy mandates the government to address gender inequalities strategically through established institutional frameworks. The Sessional Paper No.2 2006 on gender equality and development provides a framework for gender mainstreaming in policy, planning and programming. But most of these policies have not been fully implemented. Where there has been an attempt at the implementation of these policies, they lack proper coordination between the government and the NGOs. Therefore, there should be proper coordination and harmonisation of the National policy on gender which has remained uncoordinated by the Ministry, NGO's and other agencies. Most of the policies have also emphasised on retention and access to education without addressing academic improvement. According to Yates (2010), gender policy alone is not good enough and clear guidelines to help people at different levels on how to implement the policy should be developed. Senior managers who have also been socialised through a gender stereotyped society should go beyond socio-cultural barriers in policy implementation.

iv) Address negative gender stereotypes that affect both boys and girls

The societal gender stereotypes should be addressed. Kenya Institute of Education (KIE) should be asked to initiate a revised curriculum that introduces a subject on gender studies in secondary schools. Although there have been some efforts in designing gender sensitive materials, adequate monitoring of the actual implementation of the program has not been put in place. Teacher training colleges should also come up with a curriculum that trains teachers on identifying gender disparities in learning institutions. Student respondents had stated that boys received more attention from teachers in class than girls. This shows that gender stereotypes are entrenched in our society and if a revised curriculum is not put in place and continually evaluated and improved, girls will continue lagging behind boys in academic performance. The wide gap in gender difference in KCSE performance shows that the programs put in place were not effective in improving girls' performance and a new approach to solving the problem needs to be initiated. Hence, the introduction of gender studies in the secondary schools curriculum. The issue of ad hoc uncoordinated NGOs should also be addressed in order to streamline gender advocacy groups towards the improvement of academic performance.

v) Address the role of parents in improving gender equity in society

The Ministry of Education should come up with programs that will address parents' negative attitude towards the academic performance of girls. Parents who had at least

some college education had shown that if parents were supportive towards girls' education, girls' academic standards would improve. Seminars for parents should be organized in schools whereby parents who have been at the fore front of educating their daughters can be used to enlighten other parents who had negative attitudes on the education of girls. A policy should be put in place in such a way that it will be mandatory for all Teachers Parents Association (PTA) and Board of Governors (BOG) meetings in secondary schools to have an agenda on gender equity and academic performance in their schools. The government and other stakeholders should come up with programs that enlighten parents who had low level education to encourage their children to attain good grades. Although the Ministry of Education had a gender desk, parents have largely not been incorporated in the Ministry's programs and most parents were not aware of government guidelines on improving gender equity in academic outcomes (Yates, 2010)

vi) Schools to invite role models in society

Schools should be asked to invite role models who will talk to the students on the need of working hard, irrespective of whether one is a girl or a boy. The young role models whom the students can be able to identify with should organise open forums where the issue of the girls' performance will be discussed. Equally, boys and girls who have excelled in nontraditional gender stereotyped sector should be invited to enlighten the students on the expectations in those fields. Hence, through demystifying the

nontraditional gender stereotyped careers, more boys and girls might be able to take the challenge. Most of the teacher respondents stated that girls felt that they were not proficient enough in subjects like Mathematics. Through role models of girls who had excelled, they would be encouraged to work hard in the stereotyped subjects.

vii) Re-inducting the teachers on the issues of social determinants of gender differences in education

Despite the progress made in improving access to education opportunities, inequalities in terms of performance continue to exist, a situation that needs to be urgently addressed. Therefore, the Unit on gender in the Ministry of Education in corroboration with Kenya Institute of Education (KIE) should intensify the program of organising short courses to retrain serving teachers in handling the girls in situations where boys dominate in a class. This is a program that has not been fully implemented by the Ministry. Teachers should also be trained on how to encourage girls to improve in their classroom contributions. Teachers who are already serving should be re-inducted so that they are able to interpret the curriculum without being gender biased towards the boy. Kenya Institute of Education (KIE) in collaboration with the Ministry of Education should also initiate an introduction of a unit in gender studies in all teacher training colleges. Enlightened teachers would be in a better position to fight gender stereotypes in schools and in society.

5.6 Suggestions for further research

While every attempt was made to add new knowledge in the area of social determinants of gender differences in academic performances, the researcher recognises a few themes that other researchers may want to address or investigate

These areas are:

- (i) A study of social determinants of gender differences in academic performance in primary schools should be carried out and be compared with the secondary schools.
- (ii) Since teachers play a bigger role in curriculum implementation and interpretation, a study should be carried out in teacher training colleges to find out whether social determinants of gender issues have been addressed in the teacher college syllabus
- (iii) A study should be carried out on girls' performance in tertiary institutions and the type of school they attended
- (iv) A study should be carried out on the implementation of various government policies on gender and education in schools

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APPENDIX: A

LETTER OF INTRODUCTION

Mhuru David N P

Department of Educational Administration and planning

University of Nairobi

P.O Box 30179-00100

Nairobi

The Principal,

Re: Permission to carry out a research in your school

I am a postgraduate student at the University of Nairobi pursuing a PhD Degree in Curriculum Studies in the Department of Educational Administration and Planning I am conducting a study on the social determinants of gender differences in KCSE performances in Kericho and Kipkelion Districts Your school is among those which have been identified for this noble exercise I am hereby seeking permission to interview teachers and students through questionnaires

The questionnaires are designed for this research purpose only and therefore the responses given shall be absolutely confidential

Thanks in advance

Yours Faithfully,

Mhuru David N P

APPENDIX: B

TEACHERS' QUESTIONNAIRE

This questionnaire is designed to seek your opinion and views regarding the social determinants of gender differences in KCSE performance in Kericho and Kipkelion Districts. Please answer all the questions as honestly as possible and to the best of your knowledge. Do not write your name anywhere and remember there is no wrong or correct answer. The answers given will only be used for the purpose of this study only and will be treated with utmost confidence.

Teachers' questionnaire		
S/N	Questions	Responses (Circle the most appropriate answer)
PART A: BACKGROUND INFORMATION		
1.1	Indicate your gender	Male (1) Female (2)
1.2	Indicate your highest professional qualifications	M ED (1) B ED (2) B A/BSc (3) S I (4) Diploma in Ed (5) Any other (Specify) (6)
1.3	Indicate your teaching experience in years	Over 16 years (1) 11-15 years (2) 6-10 years (3) 1-5 years (4)

1.4	Which kind of school would you prefer to teach given an option?	Boys' Day (1) Boys' Boarding (2) Girls' Day (3) Girls' Boarding (4) Mixed Day (5) Mixed Boarding (6)
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PART B INFORMATION ON THE TYPE OF SCHOOL STUDENTS ATTENDED

2.1a	Do univariate univariate single-sex schools perform better academically than students univariate coeducational schools?	Yes (1) No (2)
2.1b	Please explain your answer in 2.1a	
2.2a	From your experience how would you rate the performance of boys in mathematics?	Very good (1) Good (2) Average (3) Poor (4) Very poor (5)
2.2b	From your experience how would you rate the performance of girls in Mathematics?	Very good (1) Good (2) Average (3) Poor (4) Very poor (5)
2.3a	From your experience how would you rate the performance of boys in English?	Very good (1) Good (2) Average (3) Poor (4) Very poor (5)
2.3b	From your experience how would you rate the performance of girls in English?	Very good (1) Good (2) Average (3) Poor (4) Very poor (5)

24a	How would you rate the participation of boys in class discussions in boys' school?	Very good (1) Good (2) Average (3) Poor (4) Very poor (5)
24b	How would you rate the participation of girls in class discussions in girls' schools?	Very good (1) Good (2) Average (3) Poor (4) Very poor (5)
24c	How would you rate the participation of boys in class discussions in mixed schools?	Very good (1) Good (2) Average (3) Poor (4) Very poor (5)
24d	How would you rate the participation of girls in class discussions in mixed schools?	Very good (1) Good (2) Average (3) Poor (4) Very poor (5)
25	From your own opinion do you agree that coeducational schools put pressure on boys to perform more better than girls	Strongly Agree (1) Agree (2) Not Sure (3) Disagree (4) Strongly Disagree (5)
26	In mixed schools girls are more passive than boys	Strongly Agree (1) Agree (2) Not Sure (3) Disagree (4) Strongly Disagree (5)
27	In mixed schools girls are not given a chance to develop their full potential	Strongly Agree (1) Agree (2) Not Sure (3) Disagree (4) Strongly Disagree (5)

PART C PEER GROUP INFORMATION

3.1a	Peer pressure is a key factor that affects students' performance in secondary schools?	Yes(1) No(2)
3.1b	Please explain your answer in 3.1a above	
3.2a	Does peer pressure influence students' choice of elective subjects?	Yes (1) No (2)
3.2b	Please explain your answer in 3.2a	
3.3	Peer pressure determines whether students do their home work or not?	Strongly Agree(1) Agree (2) Not Sure(3) Disagree(4) Strongly Disagree(5)
3.4	Who among the following influences most students' academic performance?	Friends (1) Teachers (2) Parents (3) Others(specify) (4)
3.5	Peer group influence affects boys and girls academic performance differently?	Strongly Agree (1) Agree (2) Not Sure (3) Disagree (4) Strongly Disagree (5)
3.6	Do you agree that peer group influences students' choice of elective subjects	Strongly Agree (1) Agree (2) Not Sure (3) Disagree (4) Strongly Disagree (5)
3.7	Peer groups socialisation in schools strengthens the society's stereotype on boys and girls abilities in academic performance	Strongly Agree (1) Agree (2) Not Sure (3) Disagree (4) Strongly Disagree (5)

3.8	Peer group socialisation in schools influences boys and girls to perform according to society's expectations	Strongly Agree.....	(1)
		Agree.....	(2)
		Not Sure.....	(3)
		Disagree.....	(4)
		Strongly Disagree.....	(5)

PART D CLASSROOM INTERACTIONS INFORMATION

4.1	Classroom interactions lead boys and girls to perform differently in different subjects	Strongly Agree.....	(1)
		Agree.....	(2)
		Not Sure.....	(3)
		Disagree.....	(4)
		Strongly Disagree.....	(5)
4.2	Who controls the experiment apparatus during Science practicals between boys and girls in mixed schools?	Boys.....	(1)
		Girls.....	(2)
4.3	Socialisation of girls at home contributes to their class performance and participation in classroom discussions?	Strongly Agree.....	(1)
		Agree.....	(2)
		Not Sure.....	(3)
		Disagree.....	(4)
		Strongly Disagree.....	(5)
4.4	Socialisation of girls at school contributes to their class performance and participation in classroom discussions?	Strongly Agree.....	(1)
		Agree.....	(2)
		Not Sure.....	(3)
		Disagree.....	(4)
		Strongly Disagree.....	(5)
4.5a	If Mathematics was an optional subject do you think most girls would opt for it?	Yes.....	(1)
		No.....	(2)
4.5b	Please explain your answer		
4.6	Girls feel they are not proficient enough in certain subjects like mathematics in the presence of boys	Strongly Agree.....	(1)
		Agree.....	(2)
		Not Sure.....	(3)
		Disagree.....	(4)
		Strongly Disagree.....	(5)
4.7	How often do girls ask questions in class in mixed schools?	Very Often.....	(1)
		Often.....	(2)
		Rarely.....	(3)
		Never.....	(4)
4.8	How often do boys ask questions in class in mixed schools?	Very Often.....	(1)
		Often.....	(2)
		Rarely.....	(3)
		Never.....	(4)

4 9	Girls are more passive in class than boys	Strongly Agree (1) Agree (2) Not Sure (3) Disagree (4) Strongly Disagree (5)
4 10a	Do the textbooks you use in class encourage a girl child to academic excellence compared to a boy?	Yes (1) No (2)
4 10b	Please explain your answer in 4 9a above	
4 11	Who are conscious about their work in class between boys and girls?	Boys (1) Girls (2)
4 12	In mixed schools boys contribute more in class than girls	Strongly Agree (1) Agree (2) Not Sure (3) Disagree (4) Strongly Disagree (5)
4 13	Do you agree that boys prefer a more competitive classroom atmosphere than girls	Strongly Agree (1) Agree (2) Not Sure (3) Disagree (4) Strongly Disagree (5)

PART I - STEREOTYPES INFORMATION

5 1	Are students in mixed schools likely to choose tasks that are outside the stereotyped gender roles in society such as girls leading in class discussions and dissecting of rabbits in a Biology class?	Yes (1) No (2)
5 2	Please explain your answer	

5.3	Gender stereotypes have contributed to girls' poor performance in key subjects like Math's	Strongly Agree..... (1) Agree..... (2) Not Sure..... (3) Disagree..... (4) Strongly Disagree..... (5)
5.4	Gender stereotypes brings about differences in academic performance between boys and girls	Strongly Agree..... (1) Agree..... (2) Not Sure..... (3) Disagree..... (4) Strongly Disagree..... (5)
5.5	Academically weak boys are mostly referred to as being weak like girls	Strongly Agree..... (1) Agree..... (2) Not Sure..... (3) Disagree..... (4) Strongly Disagree..... (5)
5.6	Girls are mostly encouraged to pursue courses that will make them fit in careers that will not make them work far away from home	Strongly Agree..... (1) Agree..... (2) Not Sure..... (3) Disagree..... (4) Strongly Disagree..... (5)
5.7	Most teachers look at a boy as being more dominant in academic performance	Strongly Agree..... (1) Agree..... (2) Not Sure..... (3) Disagree..... (4) Strongly Disagree..... (5)
5.8	Gender stereotypes limits girls academic aspirations	Strongly Agree..... (1) Agree..... (2) Not Sure..... (3) Disagree..... (4) Strongly Disagree..... (5)
PART I PATRIARCHAL SOCIETY INFORMATION		
6.1a	In your own opinion, does the community you live in expect a boy or a girl to perform better in school?	Boys..... (1) Girls..... (2)

6.1b	Please explain your answer in 6.1a above	
6.2a	Do classroom interactions actively promote the gender differences that occur in society?	Yes (1) No (2)
6.2b	Please explain your answer in 6.2a above	
6.3	Girls in patriarchal society are socialised into inferior status in terms of academic performance	Strongly Agree (1) Agree (2) Not Sure (3) Disagree (4) Strongly Disagree (5)
6.4	Traditional society does not inspire a girl into academic excellence as compared to a boy	Strongly Agree (1) Agree (2) Not Sure (3) Disagree (4) Strongly Disagree (5)
6.5	Do you agree that the society you live in socialises a girl to aspire on taking subjects that will lead her to careers that will make her a good homemaker?	Strongly Agree (1) Agree (2) Not Sure (3) Disagree (4) Strongly Disagree (5)
6.6	How does society view a boy who underperforms?	
6.7	How does society view a girl who underperforms?	
PART G: FAMILY INFORMATION		
7.1	Do you believe that parents-child interactions are among the key forces that leads to a Child's academic performance?	Yes (1) No (2)
7.2	Do parents have the same career expectation for girls as that of boys?	Yes (1) No (2)

7.3	In your own opinion do you agree that a family encourages a boy more compared to a girl in academic achievement	Strongly Agree.....(1) Agree.....(2) Not Sure.....(3) Disagree.....(4) Strongly Disagree.....(5)
7.4a	In your own opinion are parents concerned with girls' education as compared to that of boys?	Yes.....(1) No.....(2)
7.4b	Please explain your answer	
7.5	Students from stable homes tend to excel academically than those from unstable families.	Strongly Agree.....(1) Agree.....(2) Not Sure.....(3) Disagree.....(4) Strongly Disagree.....(5)
7.6	Girls from educated parents perform better than girls from parents who are not educated	Strongly Agree.....(1) Agree.....(2) Not Sure.....(3) Disagree.....(4) Strongly Disagree.....(5)

PART I INFORMATION ON THE WAY FORWARD

R.1	How can equality in boys and girls performance be achieved in secondary schools?	
R.2	How do you think the performance of girls can be improved in mixed schools?	
R.3	In your own opinion what mainly causes differences in boys and girls academic performance in secondary schools in Kenya?	

THANK YOU FOR ANSWERING THESE QUESTIONS

APPENDIX: C

STUDENTS' QUESTIONNAIRE

This questionnaire consists of questions asking for information on social determinants of gender differences in KCSE performance in Kericho and Kipkelion Districts. The information is intended for research purpose only and will be used to make recommendations on secondary school examination performance. Please note that this is not an examination. In that case there is no right or wrong answer. The answer you give will be treated with utmost confidence.

STUDENTS' QUESTIONNAIRE		
Name of the school Your Name Your Index Number	2010 KCSE RESULTS.....	
S/N	Questions	Responses <i>(circle the most appropriate answer)</i>
PART A: BACKGROUND INFORMATION		
1.1	Indicate your Gender	Male (1) Female (2)
1.2	In which type of family do you come from	Single family..... (1) Monogamous family..... (2) Polygamous family(3)
1.3	How many brothers and sisters do you have in your family	Brothers Sisters

14	In which type of school are you in?	Boys Boarding (1) Boys Day (2) Girls Boarding (3) Girls Day (4) Mixed Boarding (5) Mixed day (6)
15	Indicate your KCPE marks	
16	Given an option which school would you prefer to be in?	Boys Boarding (1) Boys Day (2) Girls Boarding (3) Girls Day (4) Mixed Boarding (5) Mixed day (6)
17	Indicate the highest academic level of your father?	University (1) College (2) Secondary (3) Primary (4) Never went to school (5)
18	Indicate the highest academic level of your mother?	University (1) College (2) Secondary (3) Primary (4) Never went in school (5)
19	Indicate your father's occupation	
110	Indicate your mother's occupation	
PART B: INFORMATION ON THE TYPE OF SCHOOL ATTENDED		
21a	Who faces more challenges that affect their academic performance between a boy and a girl	Boy (1) Girl (2)

2.1b	Please indicate the kind of challenges faced from your choice in question 2.1a	
2.3	In mixed schools boys and girls are allocated duties according to the traditional society's gender role duty allocations	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
2.4a	How often do boys and girls shy off from contributing in a class lesson in a mixed school?	Always (1) sometimes (2) At no time (3) Not sure (4)
2.4b	How often do boys and girls shy off from contributing in a class lesson in a single sex school?	Always (1) sometimes (2) At no time (3) Not sure (4)
2.5a	How would you rate voluntary participation of boys in class discussions in boy's schools?	Very good (1) Good (2) Average (3) Poor (4) Very poor (5)
2.5b	How would you rate voluntary participation of boys in class discussions in mixed schools?	Very good (1) Good (2) Average (3) Poor (4) Very poor (5)
2.5c	How would you rate voluntary participation of girls in class discussions in girl's schools?	Very good (1) Good (2) Average (3) Poor (4) Very poor (5)

2 5d	How would you rate voluntary participation of girls in class discussions in mixed schools?	Very good (1) Good (2) Average (3) Poor (4) Very poor (5)
2 6	Who encouraged you more to excel in your last exam?	Friends (1) Teachers (2) Parents (3) Others (specify) (4)
2 7	In mixed schools girls are never given a chance to develop their full potential in the presence of boys	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)

PART C : PEER GROUP INFORMATION

3 1	Peer groups socialise girls and boys in school to do what the society accepts as boys and girls roles in society	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
3 2	Peer groups tend to accept students who perform according to the society's expectations even in the classroom	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
3 3	Whom do you consult more on academic issues? (Please indicate one)	Friends (1) Teachers (2) Parents (3) Others (specify) (4)

3 4	Whom does your peer group expect to perform better in class between a boy and a girl?	Boy (1) Girl (2)
3 5	You have by now chosen the subjects that you want to do in your KCSE. Please indicate one of your favourite subjects	
3 6	Indicate one of your worst subjects	
3 7	Who mostly influenced you in making a choice of your optional subjects in KCSE? (Please tick one)	Friends (1) Teachers (2) Parents (3) Others(specify) (4)
3 8	Indicate which category of subjects most of your friends are taking	Humanity subjects (1) Science Subjects (2)
3 9	Do you agree that the subjects you chose are the same as those chosen by your friends in the elective category?	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
3 10	Peer group socialises its members to academic excellence depending on the society's expectations	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
3 11	Indicate which academic level most of your friends near your home who have finished schooling reached	University (1) Secondary (2) Primary (3) Other(Please indicate) (4)

3 12	What effect does a peer group have on a student's academic achievement?	
3 13	How can you rate the preparedness of your friends for the coming KCSE examination	Very good (1) Good (2) Average (3) Poor (4) Very (5)

PART D: CLASSROOM INTERACTION INFORMATION

4 1	Who gets more praises from the teachers for getting the answer right, between a boy and a girl in class?	Boy (1) Girl (2)
4.2a	Who is asked a more difficult question by the teachers during the class lessons between a boy and a girl?	Boy (1) Girl (2)
4 2b	Please explain the answer you have given in 4 2a above	
4 3	During classroom interactions academically weaker boys are referred to as being 'weak like girls'	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
4 4	Boys receive more attention in class activities from teachers than girls?	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)

4 5	Girls receive more attention in out of class activities from teachers than boys	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
4 6	Who are more distracted by the opposite sex in a mixed school between boys and girls?	Boys (1) Girls (2)
4 7	In your own opinion who seeks more clarifications from the teachers during class discussions in a mixed school?	Boys (1) Girls (2)
4 8	In class do you believe in working as a group or individually?	Individually (1) In groups (2)
4 9	Teachers encourage girls to take the same optional subjects as boys	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
4 10	Girls are more active in class than boys in a mixed school	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
4 11	How anxious are you for the coming KCSE examinations?	Very anxious (1) Somewhat anxious (2) Slightly anxious (3) Not at all anxious (4)
4 12	Compared to boys girls are passive participants in class	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)

4 13	Teachers still reinforce the traditional belief of male superiority in the classroom	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
4 14	How can you rate your preparedness for the coming KSC'E examination?	Very good (1) Good (2) Average (3) Poor (4) Very poor (5)
4 15	How often do you ask questions in class?	Very Often (1) Often (2) Rarely (3) Never (4)
4 16	How many times have you repeated a class if any	Once (1) Twice (2) Three Times (3) Any Other (indicate) (4)

PART E: GENDER STEREOTYPES INFORMATION

5 1a	If Mathematics was an optional subject, would you choose the subject?	Yes (1) No (2)
5 1b	Please explain your answer	
5 2	A girl is better than a boy in maths	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)

53	A boy is better than a girl in English	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
54	Which activities are girl's involved in during Biology practical's like when dissecting a rabbit in mixed schools?	
55	Do you agree that men have more mathematical ability than women?	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
56	Whenever duties and responsibilities are being allocated in mixed schools girls are allocated duties that are considered suitable for girls in the society	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
57	Students tend to think that boys academically perform better than girls	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
58	What would you associate good performance with	Good luck (1) Personal effort (2) Intelligence (3)

PART I: PATRIARCHAL SOCIETY INFORMATION

6 1a	In your own opinion does the community you live in expect a boy or a girl to perform better in school?	Boy (1) Girl (2)
6 1b	Please explain your answer in 6 1 above	
6 2	The community I live in looks at a boy as the protector of the family interest and that he should get the best in terms of education	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
6 3	The community I live in socializes a boy into big dreams of academic achievement	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
6 4	Socialization in my community restrains a girl's ambition academically?	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
6 5	The community I live in does not socialize a girl into building her academic confidence compared to that of a boy	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
6 6	In the traditional society girls were encouraged to excel more than boys	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)

6.7	The community I come from looks at a boy as the one who will establish the continuity of the family and he should get the best academically	Strongly Agree(1) Agree (2) Not sure(3) Disagree (4) Strongly Disagree (5)
6.8	The community I come from socialises a boy to academic superiority	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
6.9	Do you agree that negative attitudes by the society towards a girls' education contribute to a girl's poor academic performance compared to that of boys?	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)

PART G: FAMILY INFORMATION

7.1	Do your parents give encouraging remarks more often to your brothers or your sisters?	Brothers (1) Sisters (2)
7.2	Give examples of one of such encouraging remarks given by parents in question 7.1 above	
7.3	Do you think parents are equally concerned with girls' education as that of boys?	Yes (1) No (2)
7.4a	Do parents have the same career expectations for boys as those of girls?	Yes (1) No (2)

7 4b	Please explain your answer in 7 4a above	
7 5	My parents are concerned with my school performance	Strongly Agree..... (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
7 6	My parents are less concerned whether I do my homework or not?	Strongly Agree (1) Agree (2) Not sure (3) Disagree (4) Strongly Disagree (5)
7 7	How often do your parents check your school work?	Very Often (1) Often (2) Rarely (3) Never (4)
7 8	How often do you discuss your school work with your parents?	Very Often (1) Often (2) Rarely (3) Never (4)
7 9	How often do you discuss your school work with your friends?	Very Often (1) Often (2) Rarely (3) Never (4)

7.10	What are your plans after your KCSE examination?	
------	--	--

PART III: WAY FORWARD INFORMATION

8.1	In your own opinion what causes major differences in academic performance between boys and girls in secondary schools?	
8.2	How do you think the government can help in reducing the differences in academic performance between boys and girls in secondary schools?	
8.3	If you are in a mixed school list the factors that negatively affect your studies in school.	

THANK YOU FOR ANSWERING THESE QUESTIONS

APPENDIX: D

DOCUMENT ANALYSIS GUIDE

This document analysis guide is for collecting data on students' academic performance

1) Type of school _____

2) Number of girls in single sex and mixed schools who got the following grades in 2010 KCSE examination?

Girls (Single sex schools)

- a) A A- _____
- b) B+ B _____
- c) B- C+ _____
- d) C D+ _____
- e) D D _____
- f) E _____

Girls (Mixed schools)

- a) A A- _____
- b) B+ B _____
- c) B- C+ _____
- d) C D+ _____
- e) D D _____
- f) E _____

3) Number of boys in single sex and mixed schools who got the following grades in 2010 KCSE examination?

Boys (Single sex schools)

- a) A A- _____
- b) B+ B _____
- c) B- C+ _____
- d) C D+ _____
- e) D D _____
- f) E _____

Boys (Mixed schools)

- a) A A- _____
- b) B+ B _____
- c) B- C+ _____
- d) C D+ _____
- e) D D _____
- f) E _____

APPENDIX: E
RESEARCH AUTHORIZATION

REPUBLIC OF KENYA



NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Office name: "NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY"
Telephone: 254-020-341540, 2212102
354-020-310571, 2212102
Fax: 254-020-2212215, 2102100, 2102140
E-mail: ncst@ncst.go.ke

PO Box 30633-00100
NAIROBI-KENYA
Website: www.ncst.go.ke

Our Ref:

NCST/RE I/12/1/SS/46/5

Date:

8th Feb 2010

Mbura David Nganga P.
University of Nairobi
P. O. Box 30197 - 00100
NAIROBI

Dear Sir,

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "*Social determinants of gender differences in KCSE performances in secondary schools in Kericho and Kipkelion Districts*" I am pleased to inform you that you have been authorized to undertake research in Kericho and Kipkelion Districts for a period ending **31st May 2012**.

You are advised to report to the District Commissioner Kericho and Kipkelion Districts and the District Education Officer Kericho and Kipkelion Districts before embarking on the research project.

On completion of the research, you are expected to submit four copies of the research report/thesis to our office.

PROF. S. A. ABDULRAZAK Ph.D, MBS
SECRETARY

Copy to:

**APPENDIX F:
RESEARCH PERMIT**

PAGE 2

PAGE 1

THIS IS TO CERTIFY THAT

Prof./Dr./Mr./Mrs./Miss _____

DAVID N. P

of (Address) NAIROBI UNIVERSITY

PO BOX 10197 NAIROBI

has been permitted to conduct research in _____

Location,

KERICHO AND KIPKELION District,

WILDI VALLEY Province.

on the topic ENVIRONMENTAL DETERMINANTS OF

GENDER DIFFERENCES IN KCSE

PERFORMANCE IN SECONDARY

SCHOOLS IN KERICHO AND KIPKELION

DISTRICTS

for a period ending 31ST MAY No. 12

Research Permit No. NCST/RII/12/1/00148

Date of Issue 05.02.2010

Fee received SHS 2000



[Signature]
Applicant's
Signature

[Signature]
Secretary
National Council for
Science and Technology