

INFLUENCE OF SECONDARY SCHOOL GIRLS' PERCEPTION OF GENDER ROLES ON THEIR PERFORMANCE IN CHEMISTRY IN ETAGO DIVISION, GUCHA SOUTH DISTRICT, KENYA

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A Research Project Report Submitted to the Graduate School in Partial Fulfillment of the Requirements for the Award of Master of Education Degree in Guidance and Counseling of Egerton University

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DECLARATION AND RECOMMENDATION

Declaration

I declare that this research project report is my original work and has not been previously presented for the award of a degree in any other university.

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Date 16/04/2012

George Okong'o

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Recommendation

This research project report has been submitted for examination with my approval as the University Supervisor.

Sign 

Date 16/04/2012

Dr. B.E.E. Omulema,

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DEDICATION

This research project report is dedicated to my dear wife Irene and our children Stanley, Enock and Caleb.

ACKNOWLEDGEMENT

I am grateful to my supervisor, Dr. B.E.E. Omulema for his valuable feedback and scholarly guidance in the course of this study. I am also grateful to Etago Division Education Officer for according me the necessary assistance and allowing me to carry out the study in the division. I am grateful to all principals, teachers and students who assisted and responded to the questionnaires that were used for the study. Special thanks go to my family for their encouragement, patience, understanding and moral support accorded to me during the study. To all who assisted me to complete this study, may God bless you.

ABSTRACT

This study sought to assess the influence of secondary school girls' perception of gender roles on their performance in chemistry. Biased perceptions of gender roles by secondary school girls require the intervention of guidance and counseling. This can be achieved through effective guidance and counseling programmes in secondary schools. The findings of this study are expected to help school counselors in designing counseling programmes that address the issue of perception of gender roles and its influence on how secondary school girls perform in chemistry. This study employed *ex-post facto* research design and it was carried out at Etago division, Gucha South district. The division has 17 secondary schools with a student population of 3556. The target population was 1533 girls in the schools while the accessible population was 924 girls in the sampled schools. A sample of 92 girls was selected using simple random sampling technique. A questionnaire was formulated for data collection. The reliability of the items was established using the split-half method where a reliability coefficient of 0.78 was obtained. Validity was established through experts scrutinizing and examining the items. The data collected was analyzed using descriptive statistics where the mean, percentages and frequencies were used. Data analysis was done by the aid of the Statistical Package for Social Sciences (SPSS) computer programme version 11.5 for windows. The findings indicate that the gender roles assigned to secondary school girls at home and in schools consume most of the girls' time which could have been used on their studies. This impact negatively on the academic performance of the girls in chemistry. Based on these findings, it is recommended that guidance and counseling programmes should be strengthened in schools and be extended to teachers and parents. It is also recommended that secondary school girls should be exposed to women of high academic and professional achievement to act as role models. The government should also enforce the affirmative action so that 30% of the secondary school teachers are female, especially in rural areas of Kenya.

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LIST OF ABBREVIATIONS AND ACRONYMS

C.D.F - Constituency Development Fund

K.C.P.E - Kenya Certificate of Primary Education

K.C.S.E – Kenya Certificate of Secondary Education

K.N.E.C – Kenya National Examinations Council

CHAPTER ONE

INTRODUCTION

1.1 Background Information

Gender roles are learned in childhood (Moore, 1996). Parents' expectations and perceptions of their children lead them to encourage different forms of behavior. Moore has observed that in Britain, when boys and girls are given choices of subjects to study, they choose quite different ones. More girls than boys study Biology, French, Music and Drama whereas more boys study Mathematics, Physics and Chemistry. Moore has further observed that in Britain teachers, like parents, have different expectations of behavior and performance for boys and girls. The difference in perception of boys and girls by teachers strengthens the hidden curriculum where boys and girls are taught different things at school, although it is not officially organized that way.

Lack of role models and the presence of a hidden curriculum affect the academic performance of girls in chemistry (Moore, 1996). The hidden curriculum will determine the way teachers act towards girls and therefore expect different behavior and academic standards from them. Therefore, each student and teacher must master this curriculum if the student is to make his or her way satisfactorily through the school. This will require guidance and counseling for both the teachers and students. According to Scanzoni and Scanzoni (1988), gender roles are reinforced both at home and in schools. Scanzoni and Scanzoni contend that the school environment can encourage the girls to be absent from school. They argue that roles such as cleaning of toilets by girls can encourage the girls to be absent. This will encourage loss of learning time for the girls. Since sciences are practical oriented, girls who miss practical lessons due to absenteeism will find it difficult to understand the theoretical aspects alone. Thus such girls are most likely to perform poorly in the affected subjects.

Gender disparities as well as societal, cultural biases are widespread in many societies in Africa (Mutie & Ndambuki, 1999). These disparities spread from home to school and are reflected in the academic performance of girls at the end of every academic circle. These disparities are a result of differences in perception of boys

and girls which has resulted in the underutilization of human resources. This is because girls are not given the opportunity to explore their full academic potentials due to the assignment of gender roles at the expense of their learning.

Marger (1999) has observed that in most African countries, girls are given less academic opportunities than boys. Most parents prefer girls to stay at home and help them with domestic chores. Mostly, school going girls are allowed to attend day schools while their counterpart boys attend boarding schools. This phenomenon is reinforced by parental and societal differences in perception of boys and girls.

Differences in perception of boys and girls is evident in Kenya (Oywecha 2004) In most communities in Kenya parents prefer boys to girls in all aspects of life including the provision of educational services. These differences in perception have permeated schools where teachers unconsciously treat girls differently from the boys. As a result boys in mixed secondary schools are given more recognition than girls. Oywecha has also observed that in classroom situations (in mixed secondary schools) girls tend to be less assertive, ask few questions and participate less as compared to the boys.

Personal stereotypes contribute to poor academic performance of girls in chemistry (Oywecha, 2004) Girls have developed such stereotypes as mathematics and sciences are for boys. These stereotypes are reinforced by teachers especially during teaching of chemistry. Oywecha has also observed that during practical lessons, girls are usually assigned cleaning tasks while the boys do the calculations and compiling of experiment reports.

The Kenya national examinations council has observed that overall performance for girls has been low for the past several years (KNEC, 2008). In the years 2006 and 2007, there was no girl in the top ten candidates nationally while in the previous years the number of boys was always more than that of girls. In chemistry, boys have always outperformed girls nationally. During the years 2005, to 2007 male candidates performed better than female candidates in chemistry.

A study carried out by Oywecha (2004) revealed that gender roles are evident in schools. During a prize giving party in one of the schools in Etago Division, female teachers and girls were allocated domestic chores of cooking food, serving and washing utensils while their male colleagues participated in the feasting and entertaining of visitors. She also observed that during a CDF meeting attended by the local Member of Parliament in April 2008, women and girls were seen dancing, singing, and ululating to the visitors while the men and boys sat and enjoyed the entertainment.

Oywecha has also observed that in the Kisii community, funeral arrangements affect school girls more than boys. This is due to the roles that girls are assigned during these occasions. The situation is worse for girls in day schools because even if they go to school during the day they are expected to work all evening long at night and in the morning before going to school. On the other hand, absenteeism from school due to funeral arrangements and attending to sick relatives contributes to poor academic performance of girls (<http://www.Newsfromafrica.Org/new/project/girlchild.htm>). When girls miss practical lessons in chemistry due to absenteeism, it becomes difficult for them to understand the theoretical aspect only. Thus, such girl is likely to perform poorly in the subject.

1.2 Statement of the Problem

The academic performance of girls in chemistry has been poor for the past several years at K.C.S.E level in Kenya (KNEC, 2008). Results obtained from the KNEC indicate that boys have been outperforming girls in chemistry for several years. In the year 2005 a total of 116, 826 girls sat for K.C.S.E chemistry examinations and attained a percentage mean of 24.54% in the subject as compared to 136 684 boys who scored percentage mean of 29.44% which was higher than that of girls. In the year 2006 boys also performed better than girls in chemistry where a total of 111, 969 girls sat for the chemistry examination and attained percentage means score of 22.56% while 124,932 boys sat for the same examinations and attained a percentage mean score of 27.01%. The trend continued in 2007 where 122,532 girls sat for the chemistry examinations and attained a percentage mean score of 22.65%. Boys who sat for the same examinations were 144,299 and attained a percentage mean score

of 27.69% which was higher than that of girls. A similar trend has been observed in Etago Division where for several years boys have outperformed girls in chemistry at K.C.S.E. level. Therefore, this study sought to find out how secondary schools girls' perception of gender roles influence on their performance in chemistry in Etago division.

1.3 Purpose of the Study

The purpose of this study was to find out how secondary school girls' perception of gender roles influences their performance in Chemistry in Etago division, Gucha South District, Kenya.

1.4 Objectives of the Study

This study was guided by the following objectives:

- i) To determine how secondary school girl's perception of gender roles is reinforced at home and in schools in Etago division. ✓
- ii) To determine how secondary school girls' perception of gender roles influences the grades they score in chemistry in Etago division.
- iii) To determine how secondary school girls' perception of gender roles influence the amount of time spent on learning chemistry in Etago division ✓
- iv) To determine how guidance and counseling can help in dealing with secondary school girls' perception of gender roles in Etago division. ✓

1.5 Research Questions.

This study responds to the following research questions:

- i) How is the secondary school girls' perception of gender roles reinforced at home and in schools in Etago division?
- ii) How does secondary school girls' perception of gender roles influence the grades they score in chemistry in Etago division?
- iii) How does secondary school girls' perception of gender roles influence the amount of time spent on learning chemistry in Etago division?
- iv) How can guidance and counseling help in dealing with secondary school girl's perception of gender roles in Etago division?

1.6 Significance of the Study.

This study will help school counselors in designing individual and group counseling programmes for secondary school girls to help create awareness of their perception of gender roles. Group counseling will be done during special meetings of students such as class conferences, parents' days and prize giving days. Individual counseling programmes will help to provide the girls with an opportunity to realize their full academic potential hence improve on their academic performance not only in chemistry but also in other subjects.

1.7 Scope of the Study.

This study was carried out in Etago Division, Gucha South District. The study involved day secondary schools and focused on the influence of secondary school girls' perception of gender roles and how it influences their performance in chemistry. Perception of gender roles by secondary school girls may influence how they perform in other subjects but that was not considered in this study. The study focused on chemistry as a subject because this is the researcher's area of specialization where he has a deeper understanding of the problem of study.

1.8 Limitations of the Study.

During this study data collection was carried out during school days. This required more time for data collection because each school had its own timetable and routine. This resulted to more visits to the sampled schools hence more financial implications. Some schools are located in areas with poor roads. During the rain season, the roads were impassable hence data collection was delayed.

1.9 Assumptions of the Study.

The following assumptions were made in this study.

- i) That gender roles are universal to all girls and are expressed at home and in schools.
- ii) That secondary school girls in Etago division are not aware of the influence of their perception of gender roles on their performance in chemistry.
- iii) That the responses given by the respondents were true and reflected their views on their perception of gender roles.

1.10 Definition of Terms.

The following are operational definitions of terms that have been used in this study:

- Gender-** This refers to the characteristic of one being boy or girl. Gender here refers to the perceived characteristic that one is a girl.
- Gender identity-** It refers to the realization by girls that they are indeed girls and therefore should identify themselves with roles that girls are expected to perform either by their parents or their teachers.
- Gender roles-** This refers to the duties, activities and responsibilities assigned to girls on the basis of their being female. It also includes all activities, duties and responsibilities that are perceived to be feminine.
- Gender stereotypes-** Refers to the attitude and beliefs that certain duties, activities and roles can only be performed by girl.
- Hidden curriculum-** It refers to all the attitudes, beliefs and perceptions that girls learn at home and in schools without being taught but through observation.
- Perception -** It refers to the girls' beliefs and attitudes towards gender roles.
- Performance-** This refers to the grades girls score at K.C.S.E level. It also includes the grades they score in chemistry where the best grade is A, B is good, C is average, D is below average, and E is poor.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature review. The literature covers gender roles in different societies, influence of stereotypes on secondary school girls' perception of gender roles, development of gender roles, influence of parents on secondary school girls' perception of gender roles, gender roles in schools and guidance and counseling.

2.2 Gender Roles in Different Societies

The society plays an important role in the training and propagation of gender roles and their perception to its members (Marger, 1999). It is the society which defines femininity and masculinity together with the roles and perceptions associated with each. The society also approves or disapproves gender specific behaviors and roles, thus becoming the source of dividing the world into feminine and masculine. According to Sears, Peplau and Taylor, (1991) the distinction between male and female is a universal organizing principle in all human societies. As children, boys and girls are expected to learn different skills and to develop different personalities. As adults, men and women typically assume distinctive gender-linked roles as husband or wife, mother or father. However these roles are not universal in all cultures. Each culture defines a set of roles that are appropriate for boys or for girls.

Weston (1977) has observed that in every society, males and females are acknowledged to be different in physical characteristics and expected to be different in behavior. Very young children soon learn what behavior is expected of them as boys or girls. By the age of three; most children have achieved gender identity. Cross-cultural studies carried out by Weston firmly established that differences between boys and girls are not inborn characteristics. In every culture, boys and girls are socialized differently and therefore adopt different interpretations of the gender roles they are expected to assume. Each culture establishes definitions of what is proper or natural for men and women to do, feel, talk about and wear.

Masculinity and femininity of a person have specific norms (Broom, Selznick & Dorroch, 1981). The norms of femininity stress delicacy, passivity, dependence, emotionality, weakness, nurturance, a social orientation and verbal skill. On the other hand, norms of masculinity stress on toughness, aggressiveness, independence, rationality, strength, competitiveness, a desire for achievement and skill at mathematics and science. These norms are closely related to the assignment of gender roles to boys and girls. Roles associated with femininity are assigned to girls in every society, while those associated with masculinity are assigned to boys. Differences in gender roles centre on three related elements. First, there are the functions or tasks of males and females in society. The division of labour according to gender or task segregation is a common feature in most societies. Secondly, there is the collection of personality traits that the society considers to be appropriate for each gender. Lastly, there is the actual sexual behavior that is considered to be appropriate for each sex. Girls therefore, are expected to perform particular functions in society, exhibit specific personality traits and show behavior that the society considers appropriate for them. These expectations soon creep into the school where teachers harbor certain expectations as to how girls are expected to perform in various subjects.

Weston, (1977) has observed that at birth, the human infant is confronted by a world that divides it's inhabitants into two distinct groups on the basis of their more obvious primary or biologically determined sexual characteristics .In every society, each of these two groups eventually adopts different roles. These roles involve differences in temperament, sexual behavior, economic function, family authority, dress, and social status. Therefore , gender is used throughout the world not only as a basis for assigning activities but also for ascribing rights, duties, property and social status. Most societies organize their institutions to favour males rather than females. This ultimately disadvantages the girls both at home and in school, which will be reflected in their academic performance.

According to light (1975), gender roles do not develop naturally and inevitably as a by-product of physical maturation, but are acquired gradually through experience. They involve an awareness of physical distinction, a consciousness of sex-specific

activities, skills and modes of self-preservation and covert feelings of liking or disliking for the interests reserved for one's sex. Gender identity and perception of gender roles depend on social learning than upon genetic makeup of an individual (Scanzoni & Scanzoni, 1988). Therefore, a male child is reared as a boy while a female child is reared as a girl. To be reared as a boy means learning to act as males are expected to act in society while to be reared as a girl means learning to act as females are expected to act in society. These expectations influence an individual's life, right from the time of birth through life. In secondary schools, these expectations have permeated the whole curriculum where girls are expected to perform differently from the boys. Mostly, boys are expected to perform better in sciences and mathematics while girls are expected to do well in languages and art subjects. As a result, a girl who performs well in sciences and mathematics is usually seen to be peculiar and more often than not is assigned masculine characteristics by other girls. This situation is similar in chemistry, which for long has been assumed to be the male's domain. It is surprising that even female chemistry teachers do expect little from their students, a situation, which has continued to disadvantage the girls (Oywecha, 2004).

Weiner (1986) argues that in most cases boys' success in any task is seen as resulting from ability. In contrast, girls' success is more often attributed to the ease of the task, to extreme effort or to luck. Ability attributions usually produce more favorable evaluations of successful performance by girls. Thus, if a girl performs well in a certain subject, then that subject is either easy or the girl is lucky or has worked extremely hard. Differences in attributions for boys' and girls' performance may create a subtle bias, which diminishes recognition of girls' skills and instead explain their success as due to situational or chance factors. These gender-based attribution differences are common and they can influence an individual's personality and behavior in social situations. In a school situation, teachers of sciences and mathematics harbor this attribution differences and therefore they expect very little from girls as far as their academic performance in these subjects is concerned.

According to Karen (1993) one is not born, but rather becomes a woman .It is not true that women are naturally inclined to housework or to childcare, but rather social-cultural and economic circumstances tend to channel them into occupying such roles. Once they occupy such roles, they transmit them to their girls unconsciously through cultural socialization. In most African societies, women and girls generally shoulder the bulk of domestic responsibilities in any given household. This is because it is what is seen as culturally appropriate feminine behavior, and not because women are biologically inclined to do so. This cultural conditioning ultimately affects life choices of girls, where girls will accept roles that society considers appropriate for them and not the roles they are able to do.

According to Scanzoni and Scanzoni (1988), female socialization has concentrated more on the expressive dimension of life than on the instrumental dimension; thus putting girls and women at a disadvantage in the economic-opportunity system as compared to boys and men. The instrumental dimension of life consists of behaviors and qualities such as autonomy, activity, creativity, drive, ambition, courage, assertiveness, leadership abilities mastery and other qualities associated with getting a job done. On the other hand, the expressive dimension of life include qualities such as nurturance, tenderness, warmth, caring, empathy, showing affection through words and gestures and everything else concerned with interpersonal relationships. These forms of socialization have greatly influenced the life choices of careers for both boys and girls. As a result, some subjects have literally been assumed to be the male domain such as chemistry, physics, mathematics, woodwork and engineering. On the other hand, languages and home economics are assumed to be female domain. This has greatly disadvantaged the girls especially when it comes to performing certain roles during practical in sciences. Roles related to cleaning and cooking are left for the girls. That is why home economics is rarely if not at all offered in boys' schools.

According to Mutie and Ndambuki (1999), gender disparities as well as social and cultural biases are widespread in many societies in Africa. Mutie and Ndambuki have argued that unless there is systematic intervention to remove gender disparities in education, half of the human resources in most countries will be underutilized.

They have further observed that socio-cultural beliefs and practices in schools often discourage girls from learning and subsequently lower their aspirations and output in terms of their academic achievements. Therefore, the provision of efficient guidance and counseling in schools should assist in the improvement of the self- image of girls and provide them with skills, awareness and knowledge which will enable them to confront various social inadequacies both in school and at home.

2.3 Influence of Stereotypes on Girls' Perception of Gender Roles.

Carlson and Buskist (1997) have observed that gender roles tend to conform to the society's gender stereotypes. Very few real differences exist between the sexes and those that do are relatively small. They have further observed that girls tend to show earlier verbal development, are better at expressing emotions and interpreting emotional cues, and show more compliance with adults and peers. On the other hand, boys tend to have better spatial abilities, are more aggressive, and tend to take more risks. Several studies conducted in different African societies have revealed that almost all agricultural operations such as hoeing, planting, weeding, harvesting, winnowing, threshing transportation and marketing activities were predominantly performed by women and girls (Imam, 1989). This was in addition to animal husbandry practices, crafts, construction work and other domestic chores, all of which are part of cultural division of labour by sex. However, cross-cultural evidence clearly reveals that, not only is the division of labour by sex not universal, but there is no reason why it should be. Many African societies provides sufficient evidence that there are no exclusively female roles. Thus, in reality biological characters of girls are not reason why girls should not perform well in chemistry. The fact that they are girls does not bar them from excelling in the subject.

According to Mutie and Ndambuki (1999) gender representation in certain occupational roles can be linked to societal influences such as socialization and sex role stereotyping. The family and the school, in this case, are seen to be the two main agents of this role orientation. Generally the behavior and expectations of others, social-cultural and other environmental concerns and practices have an influence on the attitudes and perception of gender roles of secondary schools girls. Negative stereotypes regarding girls' ability in chemistry has a debilitating effect on

their attitude towards the subject and as a result the girls will pay little attention to the subject thus influencing their careers and occupational choices.

Marger (1999) has observed that training in gender specific roles begins at birth and continues throughout life thus influencing the girls' perception and attitude towards gender roles. From the moment of her birth, social and cultural attitudes conspire to give the girl less than the family or society would provide for her brother. It is the boy who usually receives the bulk of available resources including education, food, and parental attention and healthcare. Preference for sons in many societies encourages neglect and exploitation of the girls. Thus, it is extremely difficult for the girl to outgrow the cultural prejudices, which surround her at birth. More often than not, the duties assigned to the young girl and other duties later are under-valued. By the time the girls are in secondary school they harbor the prejudice that they cannot do as well as the boys in sciences. In a number of Kenyan communities, it is girls who spend more time on house hold chores than boys (Oywecha, 2004). Duties such as cooking, fetching water and firewood leave the girls with very little time for study while at home. In case a family member falls sick, girls drop out of school to look after the sick relative. The situation gets worse when a mother dies; forcing the girl to take over her mother's responsibilities. Early parentification of girls has been exacerbated by the HIV/AIDS pandemic (<http://www.newsfromafrica.org/new/projects/girls/child.htm>).

2.4 Development of Gender Roles

The family is the basic unit of any society. In the family, parents play an important role in training their children on gender roles which influence their attitude and perception of the roles. Parents do this through a hidden curriculum, which is usually implemented and transmitted to children unconsciously through socialization (Broom, Selznick & Dorroch, 1981).

According to Light (1975), gender roles are to a large extent constructed by parents, especially the mother. This is because the mother spends most of her time with the children during their formative years of development. Construction of these roles begins at birth and continues throughout life. Parents tend to handle infant girls more

warmly and affectionately than they do for infant boys. They also tend to be more tolerant of assertiveness and physical aggression in infant boys. When the child reaches the age of two or three, what were at first casual, half-conscious distinctions become explicit lessons. Parents begin to actively discourage or at least ignore behavior they consider inappropriate. Boys are expected to outgrow dependency and clinging where this kind of behavior is accepted from girls. Girls are supposed to be pretty, clean, neat, sweet and popular. Boys should be clever, strong and fearless. Light has further observed that parents are not children's only source of information on how they are supposed to act; brothers and sisters, other children, teachers, television and books provide additional models for gender specific behavior. All these become the source of secondary school girls' attitude and perception of gender roles.

Sears *et al* (1991) have observed that the gender of other people influences our perception and evaluation of them and their behavior. Therefore, gender is a characteristic of the target of impression formation, that is, our gender stereotypes can influence our perception of individuals and bias our evaluation of the roles they perform. Thus, the stereotypes held by parents about girls and boys influence how the parents train them. Similarly, the stereotypes held by teachers about boys and girls will influence how they will teach them.

Maccoby and Jacklyn (1975) have observed that parents indirectly encourage gender-stereotyped play by seeking out children of the same sex as playmates for their own children. Some parents make a deliberate attempt to encourage their children's interest in both masculine and feminine activities with the hope that doing so will help keep all opportunities for achievement and self-expression open to them, regardless of their gender. Maccoby and Jacklyn have further observed that almost everywhere, men and women are treated unequally. In most industrialized countries, laws prohibit overt sexual discrimination. But despite these laws, women have more difficulty obtaining prestigious jobs, and the higher levels of government and industry tend to be dominated by men.

A research done by Carlson and Buskist (1997) revealed that by the time children begin to play with other children outside the home, peers have a significant influence on the development of their gender roles. The research further showed that the behavior of two-to-six-years-old children was even more influenced by the knowledge of a baby's gender than was the behavior of adults. By the time children are three years old, they reinforce gender-typed play by praising, imitating or joining in the behavior. In contrast, they criticize gender-inappropriate behavior. Carlson and Buskist argue that the strongest difference in the way parents socialize their sons and daughters appears to be their encouragement of gender –typed play and the choice of gender-appropriate toys. Many parents encourage their boys to play with trucks, blocks and other toys that can be manipulated and encourage their girls to play with dolls. Fathers are less likely to give dolls to one year-old boys than to one-year-old girls. This becomes the basis of specific gender roles for the children.

2.5 Influence of Parents on Secondary School Girls' Perception of Gender Roles

According to Scanzoni and Scanzoni (1988), the assignment of specific roles by the parents to their children (boys or girls) depends on the parents 'level of education. The less education parents have, the more likely they are to have different expectations for sons and daughters and to treat the two sexes differently. Parents with more education tend to be less traditional in the gender –role training they give to their girls. Less education means limited job opportunities and persons with limited educational opportunities are less likely to raise questions about traditional values and customs. Thus, parents with limited educational opportunities are likely to train their girls on specific traditional gender-roles, thus propagating the educational disparities between boys and girls. Parents with little education are also likely to be more traditional and cultural in orientation and perception of gender roles. As a result they will give their girls more domestic chores at the expense of their academic progress. This will influence the kind of attitude and perception the girls will have about the gender roles they are assigned.

According to Belkin and Faw (1989), the family environment and sub cultural norms play an important role on how well or poorly children do on standardized tests at school. When setting such tests, teachers make an assumption that all children have

similar home backgrounds, values and language competencies. However, family experiences of an individual girl and the subjection of the girl to particular cultural practices have a significant influence on her academic performance. The extent to which a girl is subjected to cultural practices depends on her parents' level of education. Parents with low levels of education are more likely to subject their girls to a wide range of cultural practices than parents with higher levels of education. The family environment is made up of dos and don'ts alongside specific gender roles for girls. Belkin and Faw have further observed that in most African cultures; girls are seen as a cheap source of domestic labor. Once there is a girl in the family parents do not readily go for house helps. Instead, they engage the girl in domestic chores at the expense of her schooling. Excess domestic duties consume much of the girls' time and energy which could have been used for improving her academic performance.

Marger (1999) has observed that gender roles are a product of socialization, discrimination and other forms of social control by the parents at home. The extent of socialization, discrimination and social control by parents depend on their level of education. Proof of this position is found in the fact that women with the same level of education do not fill the same roles the same way from one society to another. This is because women in different societies have different perception of gender roles. This observation has been enforced by Zanden (1988) who contends that gender roles are largely a matter of social definition and socially constructed meanings and perceptions. Thus, definition of what constitutes men's and women's roles differ from one culture to another. Moreover, the correct or expected behavior and roles for males and females constantly undergo change. As social conditions change, gender roles will also change accordingly. This change is now what is required in schools and at home in order to check on the secondary school girls' perception of gender roles and its influence on their academic performance in chemistry. This change can be achieved through sensitization of students, parents and teachers through guidance and counseling programmes in schools.

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2.6 Gender Roles in Schools.

Kirby *et.al* (1997) have observed that gender roles in schools have permeated the whole curriculum. Both teachers and students have been socialized to exhibit specific gender roles. Teachers enforce these roles by assigning students gender specific roles and by expressing related prejudices and stereotypes depending on their perception of the roles.

According to the ministry of education (2005) girls lack role models in secondary schools. Generally, statistics from the ministry show that female teachers account for only about 30% of the teaching staff. However, most of the female teaching staff are found in urban areas, leaving very few female teachers in the rural areas. The situation is similar with chemistry where the bulk of teachers are male, while the few female chemistry teachers are largely in urban schools. Oywecha (2004) argues that the few female chemistry teachers are generally gender insensitive in their interaction with girls. Observations made by Oywecha in Kenyan secondary schools revealed that girls perceived male teachers to be less discriminatory towards them than female teachers. Therefore, the few female teachers who are meant to be role models end up being a barrier to the girls' academic achievement in chemistry. Baldrige (1975) has also asserted that lack of role models for girls to pattern their academic lives after has contributed to their poor academic achievements.

One of the first applications of intelligence tests when they were devised early in the 20th century was to discover whether boys were better endowed than girls (Watson, 1966). Gradually the results established the conviction that there is no real deference in intellectual level between boys and girls. At a given stage of development, girls may talk or read a little better than the boys, but the advantage does not last long. By secondary school age, there is no significant different between the sexes in aptitude for higher education. According to Watson, personality differences show fairly consistent superiority for the girls. Watson has observed that more boys than girls turn out to be behavior problems and truants at school. Similarly, more boys than girls are referred to child-guidance clinics while under achievement are twice as characteristic of gifted boys as gifted girls. At adult level, four times as many men as women become chronic alcoholics while on the other hand, criminal population is

largely male. This shows that if girls are given the right environment to learn and exploit their potentials at schools, they will do as much better as their male counterparts, and even better. This is evident in several ways, for instance, the exploits of sportswomen in recent years in fields such as track; field athletics and swimming have seriously undermined the notion of invincible male physical superiority. In intellectual matters, a few women in spite of great odds have proved themselves to be every bit as competent as men. Similarly in the political arena, more women are now coming up and taking ministerial posts, which in the recent past were a male domain.

2.7 Guidance and Counseling

Guidance and counseling is important in dealing with secondary school girls' perception of gender roles and its influence on their performance in chemistry. The main objective of guidance and counseling is to help secondary school girls to realize their full academic potential so that they can use it to improve on their performance in chemistry. Counseling will also help to provide the girls with awareness, skills and knowledge that will enable them to address the issues of gender roles at home and in schools. Guidance and counseling will also help to improve the self-image and confidence of the girls so that they can broaden their educational and occupational aspirations (Mutie & Ndambuki, 1999). Generally the objectives of guidance and counseling for secondary school girls are:

- i) To help the girls gain insight into the origins and the development of emotional difficulties related to their perception of gender roles. This will lead to an increased capacity of the girls to take rational control over their perception of gender roles.
- ii) To assist them to move towards fulfilling their potential in academic performance.
- iii) To provide them with skills, awareness and knowledge which will enable them to confront various social inadequacies that influence their performance in chemistry.

- iv) To assist them to develop a positive attitude towards themselves. This will help them to move towards a greater level of self- acceptance and self- understanding and hence make them to be more aware and realistic about their abilities and limitations by overcoming biased self- perceptions.

Counseling to secondary school girls can take the form of group or individual counseling. Group Counseling is a form of therapy which posits that people benefit from shared experiences while focusing on a particular issue (Barbara, 1985). The role of the counselor is to manage contributions from members of the group. The principle behind group counseling is the idea that dealing with specific issues may cause isolation and a feeling that one is alone in facing problems. Therefore, group counseling attempts to counteract this isolation by assembling girls with similar issues to enforce that difficulties are not singular to one girl.

Additionally when a girl gets to know that there are other girls with similar troubles, she gets comfort and courage to face the challenges as a group or individually. Therefore, if the secondary school girl's perception of gender roles is addressed through group counseling, the girls will get to encourage one another and support each other to overcome the challenges associated with their perception of gender roles. During group counseling, the school counselor should avoid being judgmental of members of the group but instead he/she should acknowledge and honour the girl's individual diversity and perceptions. Group counseling for secondary school girls can be applied when counseling girls of a particular class or when counseling all the girls in the school. It can also be applied when counseling girls who are facing similar challenges or difficulties irrespective of their class or form.

Individual Counseling is a form of counseling that focuses on an individual client. Individual counseling facilitates the exploration and resolution of personal problems and issues according to the needs of the individual (Hall and Lindzey, 1978). Hall and Lindzey explain individual counseling as a collaborative process in which a unique, confidential helping relationship is developed between a counselor and a willing client. During this process, the school counselor deals with the most intimate part of the girls' being. Hall and Lindzey have observed that individual counseling

requires a well established office and storage equipment for the client's information to be kept confidential. The process is more private and confidential and it provides the counselee with freedom to express herself without fear or shame. In this relationship, the school counselor acts as a facilitator to help the girl to understand more accurately herself and the world around her. Individual counseling can apply when counseling individual girls who are facing difficulties related to their perception of gender roles and its influence on how each girl performs in chemistry. Each girl's perception of gender roles is addressed individually while trying to understand the girl's current situation. The attitude held by each girl toward chemistry can also be addressed effectively through individual counseling.

2.8 Theoretical Framework

The following theories are the basis of this study:

2.8.1 Albert Bandura's Social Learning Theory.

Bandura's social learning theory posits that people learn from one another through observation, imitation and modeling (Bandura, 1986). He asserts that people learn through observing others behavior, attitudes and outcomes of those behaviors. Thus this theory explains human behavior in terms of continuous reciprocal interaction between cognitive, behavioral and environmental influences. According to Bandura, (1977) modeling is the basis of observational learning and we learn new responses by observing the behavior of other people. Bandura and other social learning theorists contend that the acquisition of gender identities, gender roles and behaviors is not the product of an Oedipus conflicts but rather is a gradual process of learning. They suggest that parents, teachers and other adults shape a child's behavior by reinforcing responses that are deemed appropriate to the child's gender role and discouraging the inappropriate ones. Bandura also asserts that vicarious reinforcement is basic in social learning. This is where learning or strengthening behavior is through observing the behavior of others and its consequences rather than experiencing the reinforcement or consequences directly.

According to Bandura, observational learning occurs when a person observes and imitates behaviour of others. Bandura described four main processes that are involved in observational learning and these are:-

- (i) Attention– This is the process of attending to what the model is saying or doing.
- (ii) Retention – This is the process of coding the information and keeping it in memory so that it can be retrieved later. The information comes from the model's actions.
- (iii) Production – Is the process of imitating the model's actions and reproducing those actions by the learner.
- (iv) Reinforcement – These are the incentive conditions that will help the learner to repeat the behaviour or actions of the model. Inadequate reinforcement may lead to failure by the learners to repeat the actions of the model, thus affecting learning.

Santrock (2005) has explained that these four processes are essential for effective observational learning. In this study, the four processes are essential for learning by secondary school girls. The girls use these processes for acquiring or learning perceptions of gender roles and attitude towards chemistry. Biased perceptions of gender roles and negative attitude towards the subject are likely to result in poor academic performance of the girls in chemistry. Through observational learning, the girls can be assisted through appropriate models and mentors. These could be high profile women in society, especially those with distinguished academic and professional achievements.

In the social learning theory, abnormal behaviour is viewed as learned behaviour and therefore it can be unlearned (Lahey, 2002). According to Lahey, abnormal behaviour is learned from inappropriate experiences of classical conditioning, operant conditioning and modeling. Lahey posits that individuals are abnormal because their environment taught them so. In the context of this study, secondary school girls' biased perceptions and attitudes are taken to could have been learnt from their environment (teachers, parents and other students). Therefore, the role of the school counselor is to assist the girls to unlearn the biased perceptions and attitudes and learn more adaptive ones. In this study, observation, imitation and

modeling are deemed to be the cause of biased perceptions of gender roles by secondary school girls. The girls learn this through direct observation or imitation of role models in schools and at home. To unlearn these biased perceptions then the girls will be required to observe and imitate the right models both at school and at home.

2.8.2 B.F. Skinner's Stimulus –Response Theory.

According to Skinner, (1953) learning is a function of change in overt behavior. Skinner asserts that changes in behavior are the result of an individual's response to events (stimuli) that occur in the environment. A response produces a consequence and when particular stimulus-response pattern is reinforced or rewarded, the individual is conditioned to respond. Both negative and positive reinforcements are necessary for strengthening responses while an aversive stimulus reduces responses.

Santrock (2005) has explained that B.F. Skinner's stimulus – response theory can be applied to two types of learning; classical conditioning and operant conditioning. Classical conditioning is learning by which a neutral stimulus becomes associated with a meaningful stimulus and acquires the capacity to elicit a similar response (Kosslyn & Rosenberg, 2004). Kosslyn and Rosenberg have explained classical conditioning as a type of learning that involves the association between two stimuli which results in an anticipation of events (Associative learning). On the other hand, operant conditioning (instrumental conditioning) is a form of learning in which the consequences of behaviour change the probability of the behaviour's occurrence (Santrock, 2005). In operant conditioning, behaviour of an individual operates on the environment and the environment in turn operates on the behaviour. Thus, the environment is important in the process of learning new behaviours. Environmental experiences and influences at home and in school contribute to secondary school girls' perception of gender roles.

One of the applications of operant conditioning is in behaviour modification where the principles of operant conditioning are used for changing human behaviour. In this approach, consequences for behaviour are established to ensure that more adaptive actions are reinforced. This can be applied in changing secondary school

girls' perception of gender roles and their attitude towards chemistry. In both classical and operant conditioning, a stimulus determines the type of response elicited from an individual. To change the response, the action must be to change the stimulus. In this study, secondary school girls' perception of gender roles can be described as the stimulus and the responses are the secondary school girls' performance in chemistry. Therefore, the school counselor should endeavour to change the girl's perception of gender roles in order to achieve a change in their attitude towards the subject and consequently their academic performance in the subject. Skinner's theory asserts that biased perceptions of gender roles by secondary school girls are a response to a biased stimulus in the girl's environment both at home and in school.

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2.9 Conceptual Framework

The following model represents the conceptual framework of this study. It presents the independent variables, the intervening variables and the dependent variables.

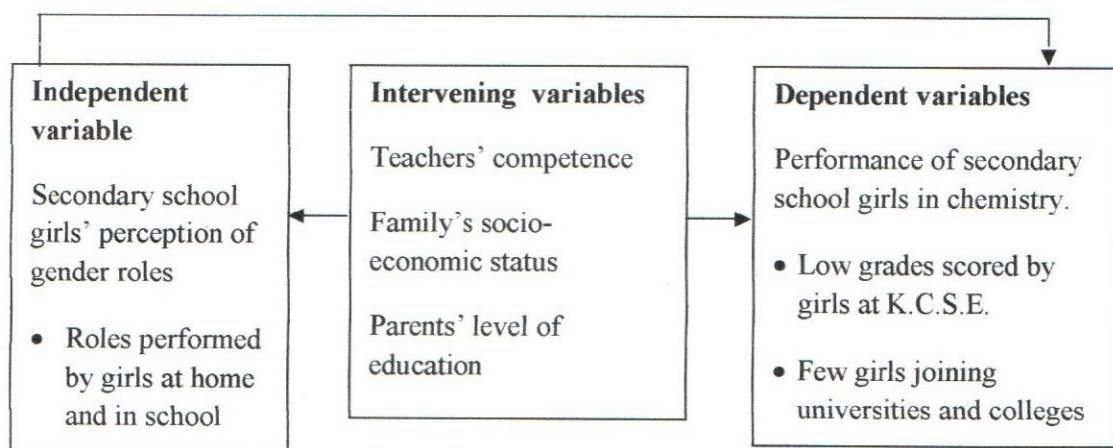


Figure 1: Influence of girl's perception of gender roles on their performance in chemistry.

In this model, secondary school girl's perception of gender roles is the independent variables. It influences how the girls perform in chemistry. If the girls perceive gender roles negatively, then they will resent performing those roles and as a result they will spend more time on those roles at the cost of their academic performance. This will result in development of a negative attitude and the attainment of low grades in chemistry by the girls at KCSE level. On the other hand, if the roles are perceived positively then the girls will spend less time performing them and remain with more time for their studies. This will foster a positive attitude towards chemistry and as a result the girls will score higher grades in the subject compared with girls who have a negative attitude towards the subject.

Teachers' competence contributes to the secondary school girls' perception of gender roles and their performance in chemistry. Competent teachers will effectively deliver the subject content and help to create a positive attitude in the girls towards chemistry. When girls are poorly taught, they end up developing a negative attitude towards the subject which will be indicated by low grades scored by the girls at KCSE level. The negative attitude contributes to the negative perception of gender

roles by the girls, especially those roles associated with chemistry during practical lessons.

The family's socio-economic status can influence the girls' perception of gender roles and hence their performance in chemistry. Families with low socio-economic status may not be able to hire house helps to assist with domestic chores. Girls from such families end up doing most of the domestic chores, thus having very little or no time for their studies. Such girls are likely to perform poorly in chemistry. On the other hand, families with high socio-economic status are likely to afford the services of house helps. As a result, their girls do very little or no domestic chores. Such girls have enough time for their studies when they are at home; hence, they are likely to perform better in chemistry.

Parents' level of education influence the secondary school girls' perception of gender roles and their performance in chemistry. As Scanzoni and Scanzoni (1998) have noted, parents with low levels of education tend to be more traditional in the assignment of gender roles to their children. Such parents contribute to the negative perception of gender roles which in turn promotes a negative attitude towards roles associated with chemistry. This will influence the girls' attitude towards the subject directly, thus, determining how the girls perform in the subject.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research design, the study area/location, the population, sampling procedures and sample size, the instruments that were used, data collection procedures and data analysis.

3.2 Research Design

The researcher used *ex-post facto* research design because there was no treatment of the subjects before completing the questionnaires (Tuckman, 1978). In this research design, gender roles had already taken their course at home and in schools and their effects are expressed by the poor academic performance of girls in chemistry. Secondary school girls' perception of gender roles is the independent variable while academic performance in chemistry is the dependent variable. The researcher could not control the independent variables in this study since their manifestations had already occurred (Kerlinger, 2000).

3.3 Study Area/Location

This study was carried out at Etago division, Gucha South district. The division is bordered by Ogembo division to the East, Nyamarambe division to the North and Trans-Mara to the South and West. The location was selected because of its large number of day secondary schools. The location was also convenient to the researcher and most of the schools in the division are of the same category (mixed day schools)

3.4 Population

Etago division has 17 secondary schools with a student population of 3556 (Etago Division Office, 2009). The schools comprise of 15 mixed day schools, 1 mixed boarding school and 1 girls' boarding school. The target population for this study was the 1533 girls in all the secondary schools in Etago division. This is the population to which generalizations of the results of this study will be made. The accessible population was 924 girls in the 8 sampled schools. This is the population

of girls from where the sample was selected using simple random sampling technique. A sample size of 92 girls was selected.

Table 1

Population of girls in secondary schools in Etago Division, 2009

Nature of school	No. of Schools	Girls	Boys
Mixed day	15	1182	1871
Mixed boarding	1	110	152
Girls' boarding	1	241	----
Boys' boarding	0	0	0
	17	1533	2023

Source: Etago Division Education Office, 2009.

3.5 Sampling Procedure and Sample Size.

The researcher used simple random sampling technique to select 8 schools from the 15 secondary schools in the division. The sample of the study was also selected from the 8 schools using simple random sampling technique and consisted of 92 girls. The 92 girls represented 10% of the accessible population which is a representative sample for a descriptive study (Mugenda and Mugenda, 2003). To ensure representativeness, a sampling frame was used from which the sample was obtained at random thus giving all the schools an equal opportunity to be selected for the study.

Table 2Sample size.

School	Number of girls	Sample
1	120	12
2	102	10
3	88	9
4	73	7
5	106	11
6	84	8
7	110	11
8	241	24
Total	924	92

3.6 Research Instruments

The researcher formulated a questionnaire that was used for data collection. The questionnaire was appropriate because it allows for self – administration and anonymity of the respondents (Kasomo, 2006). Items in a questionnaire capture a wide range of data on the area of study. The questionnaire solicited for information on secondary school girls’ perception of gender roles and how the perception influences their performance in chemistry.

3.6.1 Reliability of the Instrument

Reliability is a measure of the degree to which a research instrument yields consistent results or data. (Mugenda and Mugenda, 2003). In this study the reliability of the instrument was established using the split – half reliability estimates. This was done using information from a pilot study that involved 10 respondents. The responses obtained were divided into two equivalent halves and using the two halves, a Pearson correlation co-efficient was computed. A correlation coefficient of 0.78 was obtained indicating that the items were reliable and therefore the instrument could yield consistent results or data during the study.

3.6.2 Validity of the Items

Validity of the items was done by expert examination and scrutinizing of the items. In this approach, experts were identified and given the instrument to examine if its items would measure what it intended to measure. The experts then examined and scrutinized the items and gave recommendations on which items were to be dropped and the ones to be retained. Based on these recommendations, items which were deemed to measure what they were intended to measure were retained and used in the questionnaire for data collection, while those items which were not were dropped.

3.7 Data Collection Procedures

Data was collected using the formulated questionnaire. Upon approval of the research proposal by the Department of Psychology, Counseling and Educational Foundations of Egerton University, the researcher went to the Divisional Education Officer, Etago Division with an introductory letter for permission to carry out the research. After getting permission from Divisional Education Officer, Etago division and principals of the schools involved, the questionnaires were administered to the respondents by the researcher with the assistance of class teachers. The respondents were given one day to complete the questionnaires and return them to the researcher the following day.

3.8 Data Analysis

The data collected using the formulated questionnaire was analyzed using descriptive statistics where the mean, percentages and frequencies were used. The analysis was done with the aid of the Statistical Package for Social Sciences (SPSS) computer programme version 11.5 for windows.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the results and discussions of the study based on the objectives which were:

- i) To determine how secondary school girl's perception of gender roles is reinforced at home and in schools.
- ii) To determine how secondary school girls' perception of gender roles influence the grades they score in chemistry in Etago division
- iii) To determine how secondary school girls' perception of gender roles influence the amount of time girls spent in learning chemistry in Etago division.
- iv) To determine how guidance and counseling can help in dealing with secondary school girls' perception of gender roles.

4.2 Demographic Characteristics

The expected sample size of girls was 92. However, some four questionnaires were not returned because the respondents were absent from school when the researcher collected the questionnaires. This represented a 4.3% drop in the student sample size from 92 to 88, giving a response rate of 95.7% which is acceptable. The respondents were of various ages as shown in table 3.

Table 3

Age of respondents

Age	Frequency	Percentage
12 – 14	32	36.36
15 – 17	43	48.87
18 – 20	11	12.50
21 and above	2	2.27
Total	88	100.00

Table 3 shows the different ages of the respondents. The table shows that 36.36% of the respondents were aged between 12 and 14 years while 48.87% were aged

between 15 and 17 years. Girls who were aged between 18 and 20 years represented 12.5% of the total number of girls while the remaining 2.27% of the girls were above 21 years old.

4.3 Reinforcement of secondary school girls' perception of gender roles.

The first objective of this study sought to determine how secondary school girls' perception of gender roles is reinforced at home and in schools. This is done through the assignment of various gender specific roles. When the girls are in school, they are assigned gender specific roles as shown in table 4.

Table 4

Roles assigned to girls in school

Role	Frequency	Percentage
Fetching water for use in the laboratory	82	93.18
Cleaning the laboratory	77	87.50
Cleaning apparatus after experiments	62	70.45

The responses indicate that 93.18% of the secondary school girls are assigned the role of fetching water for use in the laboratory in their schools. This shows that most schools in Etago division do not have a reliable source of water for use in their laboratories. As a result, the schools rely on water from springs and water tanks around the school as their major source of water. Most girls are assigned the duty of ensuring that the water is transported to the laboratories to be available for use. The results also indicate that 87.5% of the girls are assigned the role of cleaning the laboratory while 70.45% of the girls indicated that they are involved in the cleaning of apparatus after experiments.

The roles assigned to secondary school girls in schools directly reinforce their perception of gender roles. This is because the roles provide the girls with learning experiences that are gender specific and thus enhance biased perception of gender roles. Secondary school girl's perception of gender roles are also reinforced indirectly through observation of how gender specific roles are assigned to female

teachers in schools. During certain functions in schools, such as parents’ day meetings, female teachers are assigned gender specific roles as shown in table 5.

Table 5
Roles assigned to teachers during parents’ day

Role	Male	Female	Both	Total
Master of ceremonies	88 (100)	0 (0)	0 (0)	88 (100)
In-charge of foods / Purchases	6 (6.8)	79 (89.8)	3 (3.4)	88 (100)
Serving foods	0	88 (100)	0	88 (100)
Entertainment	76 (86.4)	8 (9.1)	4 (4.5)	88 (100)

The results in table 5 show that during parents’ day meetings in schools in Etago division, 100% of the teachers who are assigned to be master of ceremonies were male teachers. Those who were assigned to be in-charged of foods and purchases were 6.8% male, 89.8% female and 3.4% both male and female teachers. On the other hand, 86.4% of the teachers assigned to be in charge of entertainment were male while 9.1% were female. The remaining 4.5% are cases where both male and female teachers were assigned to be in charge of entertainment.

The assignment of gender specific roles to female teachers provides a learning environment for the girls where the girls learn vicariously through observing what the female teachers are doing. This indirectly reinforces the secondary school girls’ biased perceptions of gender roles. On the other hand, the female teachers act as role models for the girls where the girls imitate what the female teachers are doing. Therefore, by carrying out gender specific roles, the female teachers are modeling the girls who in turn will learn to accept the gender specific roles.

* Secondary school girls’ perception of gender roles is also reinforced at home where girls are assigned gender specific roles as shown in table 6.

Table 6Roles assigned to girls at home.

Role	Frequency	Percentage
Preparing meals	88	100
Fetching water	81	92.04
Feeding animals	26	29.55
Weeding, planting, harvesting	84	95.45
Caring for the young children	78	88.64
Cleaning	88	100

The results in table 6 show that 100% of the girls were assigned the role of preparing meals when they are at home while 92.04% were involved in fetching water. The girls also indicated that 29.55% were involved in feeding animals at home. Girls who were involved in planting, weeding and harvesting were 95.45% while 88.64% of the girls indicated that they were involved in taking care of their siblings. The results also show that 100% of the girls are assigned cleaning roles when they are at home.

The roles assigned to girls when they are at home help to reinforce biased perception of the roles. The roles provide the girls with gender biased experiences at home. Similarly girls experience these roles vicariously by observing the roles their mothers perform at home and those assigned to other girls and women in society. Thus, the mothers, other girls, women and female teachers act as role models for the secondary school girls. By observing the roles assigned to these people, the girls learn and reinforce biased perceptions of gender roles which requires the intervention of guidance and counseling.

4.4 Influence of secondary school girls' perception of gender roles on the grades they score in chemistry.

The second objective of this study sought to determine how secondary school girls' perception of gender roles influence the grades they score in chemistry. The grades the girls had scored for three consecutive terms are shown in table 7.

Table 7

Grades scored by girls in chemistry for three terms.

Grade	Term 1	% ge	Term 2	%ge	Term 3	%ge
A	1	1.14	0	0	0	0
B	10	11.36	4	4.54	12	13.64
C	20	22.73	26	29.55	30	34.09
D	43	48.86	50	56.82	35	39.77
E	14	15.91	8	9.09	11	12.50

The results obtained show that 1.14% of the girls scored grade A in the first term while none of them scored the grade in the second and third terms respectively. Those who scored grade B were 11.36% in the first term, 4.54% in the second term and 13.64% in the third term. Those who scored grade C were 22.73% in the first term and 29.55% in the second term while 34.09% scored grade C in the third term. Majority of the girls scored grade D for the last three terms with 48.86% scoring the grade in the first term, 56.82% in the second term and 39.77% in the third term respectively. Some girls scored grade E in chemistry where 15.91% scored the grade in first term, 9.09% in the second term and 12.5% in the third term. These results indicate that most girls in Etago division perform poorly in chemistry. As Oywecha (2004) has observed, the poor performance could be due to the roles the girls are assigned at school and at home which have influenced their attitude towards the subject. Oywecha has also noted that non-participation by girls in class activities influence on how they perform in the subject. Learners who are passive in class will learn less as compared to those who actively participate in learning activities. When the girls were asked to indicate if the grades they scored in chemistry were influenced by their perception of gender roles, the responses in table 8 were obtained.

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Table 8

Influence of the girls' perception of gender roles on the grades they scored in chemistry

Response	Frequency	Percentage
Strongly Agree	46	52.27
Agree	15	17.05
Unsure	2	2.27
Disagree	18	20.46
Strongly Disagree	7	7.95
Total	88	100

The responses in table 8 show that 52.27% of the respondents indicated that they strongly agreed that the grades they scored in chemistry were influenced by their perception of gender roles while 17.05% indicated that they agreed. Those who were unsure were 2.27% while 20.46% of the respondents disagreed. The remaining 7.95% of the respondents strongly disagreed that the grades they scored in chemistry were influenced by their perception of gender roles.

4.5 Influence of secondary school girls' perception of gender roles on the amount of time they spend in learning chemistry.

The third objective of this study sought to determine how secondary school girls' perception of gender roles influence the amount of time spent in learning chemistry. The amount of time a girl spends on learning chemistry influences the grades scored in the subject. Secondary school girls' perception of gender roles influence the amount of time allocated for studying chemistry by the girls as shown in table 9.

Table 9Amount of time spent on studies per day.

Time	Frequency	Percentage
Less than one hour	28	31.82
1-2 hours	45	51.14
2-5 hours	13	14.77
More than 5 hours	2	2.27
Total	88	100.00

The results in table 9 indicated that 31.82% of the girls spend less than one hour on their studies when they are at home. Girls who spend 1 to 2 hours a day on their studies were 51.14% while those who spend 2 to 5 hours a day were 14.77%. Those who spend more than 5 hours a day were 2.27%. These results show that most girls spend few hours on their studies when they are at home. Most likely they spend most of their time on household chores which they are assigned by their parents or guardians. As Belkin and Faw (1989) have noted, excess domestic duties consume much of the girls' time and energy which could have been used for improving on their academic performance. The few girls who have time for their studies when they are at home are the ones who are likely to perform well at school as compared to those who do not have enough time for their studies.

Secondary school girls' perception of gender roles depend on how the girls have been socialized at home and in school (Scanzoni & Scanzoni, 1988). Socialization of girls concentrate on the expressive dimension of life which includes qualities such as nurturance, tenderness, warmth, caring, empathy, showing affection through words and gestures and everything else concerned with interpersonal relationships. Socialization and sex role stereotyping encourages girls to spend a lot of time on the expressive qualities and end up with little time for their studies.

The perception of gender roles by secondary school girls determine the bulk of responsibilities they shoulder at home and in school. This has been observed by Karen (1993) who posits that in most African societies, it is women and girls who shoulder the bulk of domestic responsibilities in any given household. Oywecha

(2004) has also observed a similar trend in Kenyan communities where it is the girls who spend more time on household chores than boys. In this way, girls find it difficult to concentrate on their studies before completing the roles assigned to them either at home or in school. As a result, the girls spend less time on academic assignments and personal studies.

Large number of domestic responsibilities presents secondary school girls with little opportunity to plan and manage their time properly. As Belkin and Faw (1989) have observed, domestic duties consume much of the girls' time and energy which otherwise could have been used for improving on their academic performance. Poor planning and management of time by secondary school girls require the intervention of guidance and counseling (Mutie & Ndambuki, 1999). Effective guidance and counseling services should provide the girls with awareness, knowledge and skills that will enable them to manage and plan their time properly. This will help the girls to move towards achieving their full potential in performance in Chemistry.

4.6 The Role of Guidance and Counseling

The fourth objective of this study sought to find out how guidance and counseling can help in dealing with secondary school girls' perception of gender roles. Guidance and counseling can effectively address the secondary school girls' perception of gender roles if there are established guidance and counseling departments in schools. The departments should have equipped structures with a qualified counselor and reference materials for use. If these facilities are not available, guidance and counseling cannot be effective in schools. Responses obtained in table 10 indicate that most schools lack a well established guidance and counseling department in Etago division.

Table 10.

Established guidance and counseling departments.

Response	Frequency	Percentage
Department present	28	32
No department	60	68
Total	88	100.00

In table 10, 32% of the respondents indicated that they have well established guidance and counseling departments in their schools while 68% of the respondents indicate that they lack established guidance and counseling departments in their schools. Lack of established guidance and counseling departments in schools pose a challenge to school counselors because it is an impediment to individual counseling which requires privacy and confidentiality. As Hall and Lindzey (1978) have noted, established guidance and counseling departments are necessary for storage of client files and information. In schools where there are no guidance and counseling offices, the school counselor may resort to using places in the school that may not guarantee privacy to the girls. This will make the girls to shy off from the school counselor and as a result, challenges facing them will not be addressed effectively by the school counselor. In such cases, the school counselor may resort to group counseling which is not effective in addressing individual girls' challenges. Lack of established guidance and counseling departments may make school counselors to resort to group counseling. Table 11 shows how group and individual counseling are used in Etago division.

Table 11

Approaches to counseling

Approach	Frequency	Percentage
Group counseling	48	54.55
Individual counseling	18	20.45
Both	22	25.00
Total	88	100.00

The responses in table 11 indicate that 54.55% of the respondents say that group counseling is commonly used in their schools, while 20.45% indicate that individual counseling approach is employed in their schools. The remaining 25% indicate that both group and individual counseling approaches are employed in their schools. These responses show that group counseling is popular with secondary school counselors in Etago division. This may be partly attributed to the lack of established guidance and counseling departments in the schools and partly due to the nature of problems facing the secondary school girls. Group counseling is appropriate in cases

where members of a group have common or similar challenges. As Barbara (1985) has observed, people benefit from shared experiences while focusing on a particular issue of concern during group counseling.

Guidance and counseling in schools can help secondary school girls to address their biased perception of gender roles and its influence on how they perform in chemistry. When the girls were asked to indicate whether guidance and counseling has effectively addressed their perception of gender roles, the responses in table 12 were obtained.

Table 12

Effectiveness of guidance and counseling.

Response	Frequency	Percentage
Yes	26	29.55
No	62	70.45
Total	88	100.00

The responses obtained in table 12 shows that 29.55% of the respondents indicated that guidance and counseling in their schools has effectively addressed secondary school girls' perception of gender roles and its influence on their academic performance in chemistry while 70.45% indicated that guidance and counseling has not effectively helped in dealing with their perception of gender roles. These responses, therefore, show that guidance and counseling in most schools in Etago division has not been effective. This requires the intervention of all stakeholders in order to make it effective. Effective guidance and counseling will help secondary school girls, not only when they are in school but the knowledge and skills gained can be applied even at home. This will help to improve the girls' self-image and confidence so that they can broaden their educational and occupational aspirations.

Guidance and counseling can play a significant role in helping secondary school girls to gain insight into the origins and the development of emotional difficulties related to their perception of gender roles. This will increase their capacity of taking rational control over their perception of gender roles. It will also help secondary

schools girls to move towards fulfilling their potential in academic performance in chemistry by providing them with skills, awareness and knowledge that will enable them confront various social inadequacies that influence their performance in chemistry. Guidance and counseling will also assist secondary school girls to develop a positive attitude towards themselves and chemistry. This will help them to move towards a greater level of self-acceptance and self-understanding which will make them to be more aware and realistic about their abilities and limitations by overcoming biased self-perceptions and biased perceptions of gender roles.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter presents the summary, conclusion, recommendations and suggestions for further research.

5.1 Summary

Based on the findings of this study, the following are the major findings:

- i) That biased perceptions of gender roles by secondary school girls are reinforced directly through the gender specific roles they are assigned at home and in school. The biased perceptions are also reinforced through observations made by the girls on their role models. The role models include female teachers, parents, other girls and women in society.
- ii) That the roles assigned to secondary school girls at home and in school consume most of the girls' time which could have been used on their studies. Valuable time is spent on performing these roles at the expense of learning.
- iii) That gender roles assigned to girls at home and in schools impact negatively on the academic performance of secondary school girls in chemistry.
- iv) That guidance and counseling has not effectively addressed the issue of biased perceptions of gender roles by girls in Etago division. Most schools in Etago division lack an established and functional guidance and counseling facility.

5.2 Conclusion

In conclusion, based on the findings of this study, it can be concluded that:

- (i) The way girls perceive gender roles will determine the extent to which they accept and participate in undertaking those roles. The gender roles assigned to girls take up most of their study time which negatively impacts on their academic performance. Less study time means poor revision and incomplete or poorly completed assignments.
- (ii) Gender roles influence negatively on the performance of girls in chemistry. Other than spending a lot of time on the roles, girls may develop a negative attitude to the subject. Cleaning the laboratory and apparatus can lead to the development of a negative attitude toward the subject. The negative attitude is reinforced by the lack of role models for girls in most schools. Teachers'

perceptions of gender roles determine the extent to which they assign gender roles to girls in schools.

- (iii) Biased perception of gender roles by secondary school girls can be addressed through effective guidance and counseling programs. This will help the girls to develop a positive attitude and hence improve their performance not only in chemistry but also in other subjects. Effectiveness of guidance and counseling can be achieved through adequate training of the counselors and having a well equipped guidance and counseling facility in the school.

5.3 Recommendations

The following recommendations were arrived at from the study:

- (i) School counselors should extend guidance and counseling services to parents and teachers. Mostly counseling services are limited to students but there is need to extend these services to parents and teachers who may be directly or indirectly contributing to the girls' biased perception of gender roles.
- (ii) School counselors should expose girls to women who have high academic and other professional achievements to act as role models. High profile women should be invited to schools to give talks and inspire girls to high achievement.
- (iii) The government should enforce the affirmative action in schools so that at least 30% of teachers in each school are female. This should be enforced mostly in schools that are located in the rural areas.

5.4 Suggestions for Further Research

The following are the suggestions for further research:

- (i) Research should be carried out to find out if secondary school boys' perception gender roles equally influence their performance in chemistry as they do for girls.
- (ii) Research should be carried out to establish the other factors that contribute to poor academic performance of girls in chemistry.
- (iii) A similar study should be carried out in other divisions and districts to increase the generalizability of the findings to the national level.
- (iv) This study should be replicated after 5 to 10 years in Etago division to check if the perception of secondary school girls about gender roles has changed.

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APPENDICES

APPENDIX A: RESEARCH QUESTIONNAIRE

This questionnaire is meant to collect information on the perception of gender roles and their impact on the academic performance of girls in chemistry. You have been identified as a key respondent to provide valuable information. Kindly provide your responses as honestly as possible. The information you give will be kept confidential and will be used for nothing else but for this study only.

Questions

1. Indicate your age by ticking appropriately

Age (Years)	
12 - 14	
15 - 17	
18 - 20	
21 and above	

2. Do you think there are some roles which are specifically meant for girls and others for boys in your school?

(a) Yes

(b) No.

3. Use the following rating scale to indicate the response most appropriate to you: Strongly Agree (SA), Agree (A), Unsure (U), Disagree (D), Strongly Disagree (SD).

Statement	SA	A	U	D	SD
Girls perform better than boys in chemistry					
Girls do better in languages than sciences					
Girls assist better in cleaning than boys					

4. Who fetches water for use in the Laboratory in your school?

Boys	
Girls	
Both boys and girls	
Lab Technician	

5. Who cleans the laboratory and apparatus after experiments in your school?

Boys	
Girls	
Both boys and girls	
Lab Technician	

6. Did you participate in the previous parents' day meeting in your school?

(a) Yes

(b) No.

7. Kindly indicate by ticking the sex of the teachers who were assigned the following roles.

Role	Male	Female	Both
Master of ceremonies			
In charge of food / purchases			
Cooking foods			
Serving foods			
Entertainment			

8. Indicate by ticking the students who were assigned to assist with the following roles:

Role	Male	Female	Both
Cooking foods			
Serving foods			
Entertainment			
Ushers			
Cleaning utensils			
Security			
Technician			

9. Tick the activities that you are assigned to do when you are at home.

Preparing meals	
Fetching water	
Feeding animals	
Weeding, planting, harvesting	
Caring for the young children	
cleaning	

10. Indicate the positions you have taken in your class for the last three terms

Term	Position
1	
2	
3	

11. Show the grades you attained in chemistry for each of the three terms

Term	Grade attained in chemistry
1	
2	
3	

12. Use the following rating scale to indicate the response most appropriate to you concerning the given statement: Strongly Agree (SA); Agree (A); Unsure (U); Disagree (D); Strongly Disagree (SD).

Statement	Responses				
The grade you score in chemistry is influenced by your perception of the gender roles you are assigned at home and in school.	SA	A	U	D	SD

13. Estimate the amount of time you spend on your studies when you are at home per day during weekends and holidays by ticking (✓) appropriately.

Less than 1 hour	
1-2 hours	
2-5 hours	
More than 5 hours	

14. Do you think the roles assigned to you at home and in school impact negatively on your performance in chemistry?

(a) Yes

(b) No

15. Do you have an established and functional guidance and counseling department in your school?

(a) Yes

(b) No

16. Which approach is commonly used for counseling students in your school?

Group counseling	
Individual counseling	
Both	

17. Do you think guidance and counseling in your school has effectively addressed the issue of perception of gender roles and its influence on how you perform in chemistry?

(a) Yes

(b) No

Thank you for sparing your time to respond to this questionnaire.

George Okong'o.

Project Executant.

APPENDIX B: LETTER OF PERMISSION

**ETAGO DIVISION,
P.O.BOX 2,
NYAMARAMBE.
14-08-2009.**

**TO ALL PRINCIPALS,
ETAGO DIVISION.**

RE: MR. GEORGE OKONG'O TSC. NO. 419776

The above teacher is a Master of Education in Guidance and Counseling student at Egerton University. He is currently carrying out research in the division for his studies. He is a teacher at Mesabakwa secondary school. Kindly cooperate with him during his data collection in your school.

Thank-you.

Yours faithfully



MR. STEPHEN O. MOMANYI

**DIVISIONAL EDUCATION OFFICER
ETAGO DIVISION.**

DIVISIONAL EDUCATION OFFICER
ETAGO DIVISION
DATE 14-8-2009