INFLUENCE OF E-MENTORING ON SELF-ESTEEM, SELF EFFICACY AND ACADEMIC ACHIEVEMENT OF SECONDARY SCHOOL GIRLS IN NAIROBI AND KIAMBU COUNTIES, KENYA

NDEKE, FLORENTINA NDUNGE, MED

E83/12895/2009

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF DOCTOR OF PHILOSOPHY IN THE SCHOOL OF EDUCATION, KENYATTA UNIVERSITY

FEBRUARY 2015
DECLARATION

I declare that this Dissertation is my original work and has not been presented for a degree in any other university. The dissertation has been complemented by referenced works duly acknowledged. Where text, data, graphics, pictures or tables have been borrowed from other works including the internet, the sources are specifically accredited through referencing in accordance with the anti-plagiarism regulations.

[Signature]

NDEKE FLORENTINA NDUNGE
E83/12895/2009

We confirm that the work reported in this dissertation was carried out by the candidate under our supervision as University supervisors.

[Signature]

DR. JACINTA KWENA
Department of Educational Psychology
Pwani University- Kilifi

[Signature]

PROF. FREDRICK OKATCHA
Department of Educational Psychology
Kenyatta University

05/08/2015
DATE

20/01/2016
DATE

5/2/2016
DATE
DEDICATION

To my family, especially my late parents- Maurice Ndeke and my mother Agnes Kithei who always had great interest in my education and to Linda Lockhart, founder and president of Global Give Back Circle; her dedication to this powerful mentorship programme inspired my writing of this dissertation.
ACKNOWLEDGEMENT

First and foremost, I give thanks to God for His abundant grace which has seen me through this work. “If the Lord does not build the house, in vain does the builder labour”.

I am very grateful to my supervisors, Dr. Jacinta Kwena. Aswani, formerly of Educational Psychology Department Kenyatta University but currently at Pwani University, and Professor Fredrick Okatcha of Educational Psychology Department, Kenyatta University for their invaluable assistance in this study. I am forever indebted to them for their intellectual guidance throughout my studies particularly as I wrote this dissertation.

Much thanks to all the participants in this study for the time they took to answer my questionnaire with honest and dedication. This however, could not be possible without the support of the principals of the two schools that participated in this study; namely, Margaret Wanjoji of Starehe Girls and Sr. Damiana Mutiso (ASN) of St. Martin’s Girls Kibagare; to them I say God bless. To Ann, the director of Blessed Generation Home, I say “shukrani” for allowing me pilot my instruments with your students.

To Patrick Kutoto of Egoji Teachers’ College who helped me analyse my data, and Dr. Gacheri Mwangi of English department Kenyatta University for editing this work. To all those many friends who may not be mentioned by name but have journeyed with me in the course of my studies and have made a contribution in one way or another, I say “God bless you mightily”.

Finally, my sincere thanks go to all the Assumption Sisters of Nairobi for their financial, moral, and spiritual support throughout my studies.
TABLE OF CONTENTS

DECLARATION ................................................................................................. ii
DEDICATION ..................................................................................................... iii
ACKNOWLEDGEMENT ..................................................................................... iv
TABLE OF CONTENTS ...................................................................................... v
LIST OF TABLES ............................................................................................... ix
LIST OF FIGURES ............................................................................................ x
ABBREVIATIONS ............................................................................................ xi
ABSTRACT ......................................................................................................... xii

CHAPTER ONE: INTRODUCTION ...................................................................... 1

1.1 Introduction ............................................................................................... 1

1.2 Background to the study ........................................................................... 1

1.3 Statement of the Problem .......................................................................... 9

1.4 Purpose of the Study .................................................................................. 11

1.5 Objectives of the Study ............................................................................ 11

1.6 Research Questions ................................................................................... 12

1.7 Research Hypotheses ................................................................................. 12

1.7.1 The Alternative Hypotheses ................................................................. 13

1.8 Significance of the study .......................................................................... 13

1.9 Limitations and delimitations of the study ................................................. 14

1.9.1 Limitations of the study ..................................................................... 14

1.9.2 Delimitations of the study ................................................................. 15
### Chapter One: Assumptions of the Study

1.10 Assumptions of the study ................................................................. 15

1.11 Theoretical and Conceptual framework ........................................... 16

1.11.1 Theoretical Framework ............................................................... 16

1.11.2 Conceptual Framework .............................................................. 20

1.12 Operational Definition of terms ...................................................... 22

---

### Chapter Two: Review of Related Literature ........................................... 24

2.1 Introduction ....................................................................................... 24

2.2 Mentoring Relationships ................................................................. 24

2.3 E-mentoring and self-esteem ......................................................... 25

2.4 E-mentoring and self-efficacy ....................................................... 35

2.5 E-mentoring and academic achievement ....................................... 42

2.6 Duration in e-mentoring programme and students’ self-esteem
   and self-efficacy .................................................................................. 48

2.7 Summary of Literature Review and Gap Identification ................. 53

### Chapter Three: Research Methodology .............................................. 55

3.1 Introduction ....................................................................................... 55

3.2 Research Design .............................................................................. 55

3.3 Variables of the study ..................................................................... 56

3.4 Location of the study ...................................................................... 56

3.5 Target Population ........................................................................... 57

3.6 Sampling Techniques and Sample size ......................................... 57

3.6.1 Sampling Technique ................................................................. 57
3.6.2 Sample size ................................................................. 58
3.7 Research Instruments ..................................................... 59
3.7.1 Self-Esteem questionnaire ........................................... 60
3.7.2 Self-efficacy questionnaire ........................................... 61
3.7.3 Focus Group Discussion Guide .................................... 62
3.7.4 Document Analysis ..................................................... 63
3.8 Pilot Study ................................................................. 63
3.9 Reliability and validity of the Instruments ......................... 64
3.9.1 Validity of the Research Instruments ............................. 64
3.9.2 Reliability of the Research Instruments ......................... 65
3.10 Data Collection Techniques ........................................... 65
3.11 Data Analysis ............................................................. 68
3.12 Logistical and Ethical Considerations .............................. 69

CHAPTER FOUR: DATA ANALYSIS, RESULTS

AND DISCUSSIONS ............................................................. 70
4.1 Introduction ............................................................... 70
4.2 Demographic Information .............................................. 71
4.2.1 Distribution of participants’ age by parental status .......... 72
4.2.2 Distribution of participants’ parental status by study group .... 73
4.2.3 Distribution of participants’ by school, class and membership
to GGBG ............................................................... 75
4.2.4 Duration of participants by class in the programme ........... 76
4.3 Participants’ level of self-esteem ...................................... 77
4.4 Participants’ Levels of Self-efficacy ........................................... 83
4.5 Length of time in the E-mentoring on Participants’ Self-esteem ..... 87
4.6 Length of time in the e-monitoring and participants’ self-efficacy . 90
4.7 Influence of e-mentoring on academic achievement ................. 93
4.8 Summary of findings ............................................................... 99

CHAPTER FIVE: SUMMARY, CONCLUSIONS
AND RECOMMENDATION.......................................................... 102
5.1 Introduction .............................................................................. 102
5.2 Summary of the study findings ............................................... 102
5.3 Conclusions ........................................................................... 104
5.4 Recommendations of the study .............................................. 105
5.5 Suggestions for Further Research ......................................... 106

REFERENCES .............................................................................. 107

APPENDICES

APPENDIX I .................................................................................. 116
Self-Esteem Questionnaire ............................................................. 117

APPENDIX II ................................................................................ 121
A. Letter of authorization to use self-efficacy scale ....................... 121
B. Letter requesting permission to use self-efficacy scale .............. 122

APPENDIX III ............................................................................... 123
Group Discussion Guide ............................................................... 123
Permit to Conduct Research ......................................................... 124
LIST OF TABLES

Table 3.1: Sampling Frame ................................................................. 59
Table 3.1: Scale Reliabilities ............................................................... 65
Table 4.1: Participants by Parental Status ............................................. 72
Table 4.2: Parental Status by Study Group ........................................... 73
Table 4.3: Distribution of Participants by School, Class, and their
        Membership in GGB ............................................................... 75
Table 4.4: Duration of Participants in Programme by Class ....................... 76
Table 4.5: Descriptive Statistics of Participants’ Levels of Self-esteem ....... 78
Table 4.6a: Group Statistics .................................................................. 80
Table 4.7: Descriptive Statistics on Participants’ Levels of Self-efficacy ....... 84
Table 4.8: The t-test Results of E-mentoring and Participants’ Self-efficacy .... 86
Table 4.9: ANOVA test on Length of Time in E-mentoring and Self-esteem ...... 88
Table 4.10: Post hoc Results of Multiple Comparison of Length of Time
        in E-mentoring ........................................................................ 89
Table 4.11: ANOVA test on length of Time in E-mentoring and self-efficacy ..... 91
Table 4.12: Post hoc Results on Length of Time in E-mentoring
        and self-efficacy ...................................................................... 92
Table 4.12: Descriptive Statistics of Participants Academic Achievement ....... 94
Table 4.14a: Academic Achievement Group Statistics ............................... 95
Table 4.14b: Results of t-test of E-mentoring and Participant’s Academic
        Achievement (English, Kiswahili, Mathematic) ............................. 96
Table 4.15: Summary of hypotheses testing ........................................... 99
LIST OF FIGURES

Figure 1.1: Relationship among e-mentoring, self-esteem, self-efficacy and And academic achievement..............................................................21
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANOVA</td>
<td>Analysis of Variance</td>
</tr>
<tr>
<td>BCE</td>
<td>Before Christian Era</td>
</tr>
<tr>
<td>EMA</td>
<td>e-Mentoring Africa</td>
</tr>
<tr>
<td>GGBC</td>
<td>Global Give Back Circle.</td>
</tr>
<tr>
<td>GPA</td>
<td>Grade Point Average</td>
</tr>
<tr>
<td>INTER</td>
<td>Innovation</td>
</tr>
<tr>
<td>IPPA</td>
<td>Inventory of Parent and Peer Attachment</td>
</tr>
<tr>
<td>ISE</td>
<td>The Index of Self-Esteem</td>
</tr>
<tr>
<td>LD</td>
<td>Learning Disabilities</td>
</tr>
<tr>
<td>LISTEN</td>
<td>Linking Individual Students to Educational Needs</td>
</tr>
<tr>
<td>NACOSTI</td>
<td>National Commission of Science and Technology</td>
</tr>
<tr>
<td>NLD</td>
<td>No Learning Disabilities</td>
</tr>
<tr>
<td>SES</td>
<td>Self- Efficacy Scores</td>
</tr>
<tr>
<td>SPPA</td>
<td>Self-Perception Profile for Adolescents</td>
</tr>
<tr>
<td>STEM</td>
<td>Science, Technology, Engineering, and Math</td>
</tr>
</tbody>
</table>
ABSTRACT

This study sought to establish the influence of e-mentoring on self-esteem, self-efficacy, and academic achievement of secondary school students in Nairobi County. The study was guided by five objectives namely. The first objective was to establish the levels of self-esteem of students in the e-mentoring programme with those of students not participating in the programme. Second objective sought to contrast the levels of self-efficacy levels of students in e-mentoring programme with those of students not participating in the programme. Third was to compare the levels of self-esteem of students at different years in the mentoring programme. Fourth objective was to establish the levels of self-efficacy of students at different years in the e-mentoring programme. Lastly, the fifth objective was to compare the academic achievement of students in the e-mentoring programme with those of students not in the programme. Mixed research designs were used. The study adopted purposive and simple random sampling techniques. The population of the study consisted of all students in form three and forms four in the two schools (277). The sample size was 92 participants drawn from GBBC members and non-GBBC. Data were collected using self-esteem questionnaire, self-efficacy questionnaire, and document analysis and focus group discussion guide. The Statistical Package for Social Sciences was used whereby data were analyzed using t-test and Analysis of Variance (ANOVA). The following three hypotheses were tested using t-test: There is no significant difference in self-esteem levels between those students in and those not in the e-mentoring programme. There is no significant difference in self-efficacy levels between those students in and those not in the e-mentoring programme. There is no significant difference in academic achievement scores between those students in and those not in the e-mentoring programme. One Way Analysis of Variance was used on the following two null hypotheses: There is no significant difference in self-esteem levels between students at different years of the e-mentoring programme. There is no significant difference in self-efficacy levels between students at different years of the e-mentoring programme. The study found significant differences between those students in e-mentoring and non e-mentoring groups. The findings of this study suggest that the e-mentoring programme had positive influence on the e-mentees’ self-esteem \( t(90) = 13.021, p<0.01 \), self-efficacy \( t(90) = 8.818, p<0.01 \) and academic achievement \( t(90) = 2.675, p<0.01 \). Length of time in the e-mentoring programme was also found to impact positively on the e-mentees’ self-esteem and self-efficacy; that is \( F_{3, 52} (0.05) = 18.387 \) and \( F_{3, 52}(0.05) = 18.384 \) respectively. The study is significant in that it may help improve the GBBC e-mentoring programme and other future e-mentoring programmes in Kenyan schools. In conclusion, the study reaffirmed the importance of e-mentoring relationships as a timely option to the traditional methods of mentoring which are proving to be difficult due to changing times. The study also came up with several recommendations. One of the recommendations that were derived from the study is that future studies could look at the levels of self-esteem, self-efficacy and academic achievement of e-mentee before the implementation of the programme in order to ascertain to what extent the e-mentoring programme has influence on the e-mentees. Implications of the study are discussed.
CHAPTER ONE

INTRODUCTION AND CONTEXT OF THE STUDY

1.1 Introduction

This chapter entails the background of the study, statement of the problem, the purpose of the study, the objectives of the study, research questions, research hypotheses, assumption of the study, limitations of the study, delimitations of the study, significance of the study, theoretical and conceptual frameworks and operational definitions of terms.

1.2 Background to the study

According to the Webster Dictionary of English Language, a mentor is a wise and trusted advisor. The term also refers to a person who is experienced or trained, and willing to share some of their accumulated experiences with less experienced people (Rhodes, 2006). Mentors provide guidance and support to developing individuals in various ways. For example, Fletcher (2000: 238) observed that mentors guide and support trainees to ease them through difficult transitions. By so doing, mentors help expand mentees horizons and increase their chances of success at certain levels, while at the same time they guide, support and assist the mentees to enable them to boldly face new challenges. The process in which mentors offer guidance and help mentees is known as mentoring action.

Mentoring is an old practice that has gained momentum in recent years. It involves smoothing the way, enabling, reassuring, as well as directing, managing and instructing mentees. Etymologically, mentoring can be traced back to the
Greek mythology of Homer’s Odyssey in the eighth century BCE. In this mythology, a certain goddess named Athena impersonated herself in human form and became a mentor who undertook social, moral, spiritual, and cultural mentoring with Telemachus (son of King Odyssey) in support of his father Odysseus. Athena’s role was to support and inform Telemachus during the time his father was unable to support as he was busy fighting in the war of Troy (Adam & Scott, 1997 as cited in Culpepper, 2008 p. 24). The relationship between Telemachus, the mentee, and Athena, the mentor, became the prototype for the contemporary mentor-mentee relationships. Mentoring, therefore, has come a long way since the time of the Trojan Wars. According to Klassen and Clutterbuck (2001), mentoring has become a subject of passionate academic research and extensive testing.

The concept of mentoring is dynamic and has taken on different meanings in different decades and with different disciplines. For instance, a mentor in the traditional African society was seen as a person who was entrusted with the care and teachings of the youth as they went through different apprenticeships in order to instil in them some skills. This type of mentoring was done both on a one to one and face-to-face basis. The face to face mentoring ensured that the mentee had the opportunity to ask for clarifications, thus enabling the mentor to confirm whether the mentee had understood the instructions. Omolewa (1980) states that the mentor’s role then was to inculcate moral etiquette and acquisition of skills such as carpentry, weaving, brick-laying, blacksmithing, shoemaking, and traditional medicine. The youth, after acquiring basic skills often benefited from
the patronage of more experienced professionals to further improve on the already acquired skills. However, as Collier (2009) points out, changing times have seen parents away from home (some could be working outside home, in school as adult learners, in jail, in exile, or simply fooling in the village) and relatives not playing their roles as mentors. These scenarios necessitate the establishment of programmes that would continue to play this vital role of mentoring especially among the young people.

In the United States and Europe, there have been increased emphases on programmes designed to facilitate both formal and informal mentoring relationships, with practitioners, research policy makers, and different groups looking to mentoring as a promising form of intervention for both children and the youth. DuBois and Karcher (2005) report that by the time of their study, there were at least 4,500 agencies that were providing mentoring, including 500 Big Brothers, Big Sisters of American agencies, Popular National initiatives (such as America’s promise, and Federal Legislation promoting mentoring). In their meta-analysis study of 73 mentoring programmes to find out their effectiveness, DuBois, Portillo, Rhodes, Silverthorn, and Valentina (2011) observe that there were five thousand programmes serving about three million youths in the United States of America. These programmes reflect a widespread belief that the presence of a mentor in the life of a young person not only supports healthy growth and development, but also serves as a protective factor against many risks facing today’s youth.
In the realm of education, mentoring is used to assist learners and weaker students or those with specific learning needs or difficulties. For example, DuBois and Silverthorn (2005) carried out a study which found that those youths who were mentored during the adolescence stage performed well in school, had a high level of self-esteem and life satisfaction than those who were not mentored. Herrera, Grossman, Kauh, Feldman, and McKaken (2007) also found that other benefits that accrued from mentoring included improvements in the participants’ academic achievements and perceived scholastic efficacy. Although most of these programmes (mentoring programmes) use the face-to-face method of mentoring, there are other forms of mentoring that have emerged in the course of time, especially with the advent of information technology.

A core outcome of the revolution of information technology is the concept of e-mentoring. This concept employs the method for leveraging electronic communications to provide mentoring opportunities to wider and diverse groups of people. The emergence of this technology, in particular, the internet, has pushed the mentoring skills a notch higher and ushered in a new way of communicating between mentors and mentees. Electronic mentoring (E-mentoring) programmes have developed along the same lines that face to face mentoring programmes developed (Spencer & Liang, 2009). The developments in e-mentoring have levelled the playing field since they provide opportunities for those who would otherwise have been left out simply because face to face mentorship has become rare.
E-mentoring is a mentoring relationship in which two parties, the mentor and mentee, are in different locations, countries or continents and communicate through electronic for example through email. Laura and Sharan (2002) define e-mentoring as a computer-mediated and mutually beneficial relationship between a mentor and mentee. This relationship allows for learning, advising, encouragement and modelling that are egalitarian and qualitatively different from traditional face-to-face mentoring. Other synonyms for e-mentoring given by Kasprisin, Single, Single and Muller (2003) are tele-mentoring, cyber mentoring, virtual mentoring and online mentoring.

E-mentoring has been used alongside face to face mentoring in education. However, e-mentoring proponents have argued that the two approaches are not comparable as they are affected by different circumstances and the availability of resources. For instance, Single and Single (2005) argue that e-mentoring does not replace face-to-face mentoring but rather extends it. Spencer and Liang (2009) observed that e-mentoring offers a realistic way of providing a forum for busy adults and youths to build meaningful relationships because it is a convenient and effective method of mentoring as one can get a mentor from any part of the world. E-mentoring makes a profound impact in the sense it is immediate and leaves a written record which may be accessed at a later time. Generally, e-mentoring could guarantee several beneficial practices to the e-mentees, however, for the purpose of this study, the researcher focused on three aspects namely, self-esteem, self-efficacy and academic achievement, and particularly on the inter-relationship...
between adolescents’ development and how they may be influenced by e-mentoring.

Aronson, Wilson and Akert (2005) define self-esteem as the extent to which people view themselves as good, competent and decent. Brown (1998 cited in Passer et al. 2009: 679) notes that high self-esteem is related to much positive behaviour, while low self-esteem may contribute to a person’s reaction to the challenges of everyday life. Self-esteem may be fostered by different factors, and as such the feedback received from other people or from parents may have either a positive or a negative impact on a person’s sense of self-esteem. In their study, Lackovic-Grgin and Dekovic (1990) found that younger adolescents had higher self-esteem than older adolescents. They also noted that today’s adolescents have very few deep relationships with adults and other significant persons outside the family. Therefore, this study compared self-esteem, self-efficacy and academic achievement of students in e-mentoring programmes with those of students who are not in e-mentoring programmes.

Bandura (1997) defines self-efficacy as “people’s judgments of their capabilities to organize and execute courses of action required in attaining designated types of performance”. A strong sense of self-efficacy enhances human accomplishment and personal well-being in many ways. For example, self-efficacious students work harder and achieve more than students who are less efficacious (Pajares, 2005). Beliefs about self-efficacy may be influenced by various factors, among them mastery experiences, modeling, vicarious experience provided by social models and social persuasions. However, ordinary realities are
made up of setbacks and frustrations, and people must therefore have a robust sense of personal efficacy to sustain the perseverant effort needed to succeed in life (Bandura, 1994).

Educational institutions have been reported to lead the way in the development of e-mentoring. For example, Crossman (1999) while concurring with this assertion, states that e-mentoring is generally school-based and frequently focuses on improving academic achievement. In Kenya, there have been attempts to introduce e-mentoring programmes in secondary schools, for example e-Mentoring Africa (eMA), which is an online mentoring programme that empowers teenagers to navigate through life’s challenging issues like HIV/AIDS. Another operational e-mentoring programme in Kenya is “The Global Give Back Circle (GGBC)”.

The GGBC programme was introduced in Kenya in 2006 by Linda Lockart, an American lady whose aim was to use the programme to have the Kenyan youth connect and get enriched by more experienced people outside their learning institutions. The programme started in three institutions in Kenya, namely, Stahere Girls school, St. Martin’s Girls’ Kibagare, and Blessed Generation (here referred to as school A, School B, and school C respectively) . The three learning institutions were chosen for the programme because they have a common criterion of admitting needy and bright students. All the three institutions have a particular bias towards the less fortunate financially, and those who lack proper adult supervision during their upbringing. Again, apart from the above identified criteria, the schools had an already existing internet connection
which is one of the key requirements for e-communication as the mentor and mentee mainly communicate through e-mails (Wairimu, 2010).

The GGBC provides one to one structured e-mentoring between e-mentors in the US, Europe and Africa, and with other needy students in the already identified schools, particularly those who make it to high school and through university, college and/or business school. Single and Muller (1999: 108) define structured e-mentoring as an e-mentoring that occurs within a formalized programme environment which provides training and couching to e-mentees in order to increase the likelihood of engagement in the e-mentoring process. The e-mentoring communication process relies on programme evaluation to identify improvements for future programmes and to determine its impact on the participants.

Within the GGBC programme, communication involves bringing forth knowledge on specific skills and talents needed to provide a sustainable solution to the entire development of the mentee. In addition, the programme facilitates group workshops twice a year whereby experienced individuals are invited to help train the e-mentees and to equip them with different leadership and career focusing skills (Lockart, personal communication, 2009). In order to find out some of the skills the programme has impacted more on the e-mentees, the researcher investigated the influence of e-mentoring programme on self-esteem, self-efficacy and academic achievement of secondary school girls in Kenya.
1.3 Statement of the Problem

The adolescent stage has been known to be a very critical and sensitive period of development. The accompanying physical and emotional changes make this stage of development precarious. Traditionally, adolescents were guided through this period by experienced adults. Guidance and counseling services have also been part of a very long tradition that may have been there since the beginning of human existence and which continues even today. The emergence of modern lifestyles has seen family structures change, and those adults who traditionally used to guide youths are no longer available. The advent of technology has also left youths at the expense of a world full of make-believe, movies, magazines and social media. The alternative to these pervasive and preferred sources of information, therefore, is to be found in formally organized but credible mentoring and e-mentoring programmes that would seek to provide accurate information so as to positively influence the character formation of the young people through modeling. E-mentoring has thus come up as an effective tool to support mentoring relationships at a time when face-to-face relationships are proving impractical due to the different commitments today’s adults find themselves in.

In the US and other Western countries, studies on the influence of e-mentoring in the lives of the adolescents have been conducted and have yielded different results. Examples include researches done on effects of e-mentoring on academic performance, on positive attitudes towards school and on relationships with peers, and on parental relationship (Karcher, 2009; Rhodes, 2002).
Campbell-Whatley’s (2001) study points out that e-mentoring enhances better attitudes towards school, increases feelings of competency and positive relationships with friends and family. In their study, Single and Single (2005) found that the benefits of e-mentoring were psychosocial and instrumental to the mentee. Internationally, studies on e-mentoring have explored the impact of e-mentoring on both the academic and attitudinal benefits of students on aspects such as self-esteem, self-efficacy and other domains. These studies have been conducted in other countries using different methodologies and their findings may not be generalized to our African context. Moreover, e-mentoring in Africa are quite rare and scarce.

In the Kenyan school system, face-to-face mentoring programmes exists in some secondary schools where mentoring is done by old students and teachers such as in Buruburu Girls, Parklands and Loreto Matunda. Other schools have similar mentoring programmes although they do not use the term mentoring explicitly. The main purpose of these face to face programmes in these schools where they exist is to improve on academics. Although mentoring is gaining momentum in Kenyan schools, there is lack of systematic ways that support the upcoming programmes or the ones that are geared towards finding out their effectiveness. Moreover, there is scanty empirical information or records of studies that may have been carried out in the schools to ascertain the influence of these face to face mentoring or e-mentoring programmes on the lives of students. Given the attention that mentoring and information technology in communication are receiving throughout the world, research is needed to establish its influence on
various domains of students’ behaviour in Kenya. The aforementioned observations, therefore, inspired this study which sought to establish at the local level, the influence of e-mentoring on self-esteem, self-efficacy and academic achievement of secondary school girls in Nairobi and Kiambu Counties who are within the Global Give Back Circle e-mentoring programme in Kenya.

1.4 Purpose of the study

The purpose of this study was to explore and compare the levels of self-esteem, self-efficacy and academic achievement of the students in the GGBC programme with those of students not in the programme. To achieve this purpose, the following research objectives, research questions, and hypotheses were formulated.

1.5 Objectives of the study

The objectives of this study were to:

i. Compare the levels of self-esteem of students in the e-mentoring programme with that of students not participating in the programme.

ii. Contrast the levels of self-efficacy levels of students in e-mentoring programme and that of students not participating in the programme.

iii. Compare the levels of self-esteem of students at different years in the e-mentoring programme.

iv. Establish the levels of self-efficacy of students at different years in the e-mentoring programme.
v. Compare the academic achievement of students in the e-mentoring programme with that of students not in the programme.

1.6 Research Questions

The following research questions guided the study:

i. Is there a significant difference in the levels of self-esteem between those students in the e-mentoring programme and those not participating in the programme?

ii. Is there a significant difference in the levels of self-efficacy between those students in the e-mentoring programme and that of students not participating in the programme?

iii. Is there a significant difference in the levels of self-esteem between students at different years in the e-mentoring programme?

iv. Is there a significant difference in the levels of self-efficacy between students at different years in the e-mentoring programme?

v. Is there a significant difference in academic achievement between students in the e-mentoring programme and those not in the programme?

1.7 Research Hypotheses

This study was guided by the following hypotheses:
1.7.1 The Alternative Hypotheses

\textbf{Ha}_1: The self-esteem levels of students in the e-mentoring programme will be significantly different than that of students not in the programme.

\textbf{Ha}_2: The self-efficacy levels of students in the e-mentoring programme will be significantly different than that of those not in the programme.

\textbf{Ha}_3: There is a significant difference in the levels of self-esteem among students at different years of the e-mentoring.

\textbf{Ha}_4. There is a significant difference in the levels of self-efficacy among students at different years of the e-mentoring.

\textbf{Ha}_5. The academic achievement scores of students in the e-mentoring programme will be significantly different than that of those not in the programme.

1.8 Significance of the Study

Mentoring in Kenya is relatively a new area of interest and the society is just beginning to adapt to it. Therefore the study findings may benefit various groups of people in different ways; for example parents, educators, curriculum developers, various institutions and heads of organizations such as secondary schools. Firstly, it is also envisaged that the recommendations from the study may help to improve the programme and give suggestions on how it can be adopted locally. The study may also contribute in creating awareness not just of e-
mentoring but also on the whole phenomenon of mentoring in general. Thirdly, the study is envisioned to give additional knowledge to the area of e-mentoring. Lastly, the findings of this study may provide feedback to Global Give Back Circle which may lead to the evaluation of the programme in the light of the findings and especially on how to improve the programme.

1.9 Limitations and Delimitations

This section of limitation dealt with the shortcomings or the weaknesses which the researcher encountered in the course of the study while the delimitation section looked at the scope of the study.

1.9.1 Limitations of the Study

The lack of prior information regarding the levels of self-esteem and self-efficacy of the students in the GGBC before they joined the programme (pre-test) was a limitation because the researcher could not say with certainty that it was the e-mentoring programme alone that had impacted positively on self-esteem, self-efficacy, and academic achievement of the e-mentees. This is also true because individuals have varying cognitive abilities and that no one person is like the other, yet, the data collection tool treated them as though they were the same. The study also encountered several limitations mainly arising from the *ex post facto* design used. First, lack of control for independent variables and randomization of subjects meant that the researcher was not able to manipulate the independent variable as well as to randomize the study subjects. Second, the researcher was not able to identify causative factors. This means that although the researcher
established relationships between students’ self-esteem, self-efficacy, academic achievement and e-mentorship, there was the problem of deciding the cause and effect since the purpose of the study was not to identify these. Third, the study sample was too limited for proper generalization of the results. Again the use of self-report measures may have influenced the participants to respond in a socially acceptable manner at the expense of honesty. Besides, the study recognizes that self-esteem, self-efficacy, and academic achievement have multiple rather than single causes. To deal with the said limitations, the researcher therefore used a group of participants who were not in the e-mentoring programme in order to compare the variables of the study between the two groups.

1.9.2 Delimitations of the Study

i. Since the study was carried out within the institutions where Global Give Back Circle Programme that uses internet-based technologies as the medium of carrying out the mentoring activities is in place, generalizing the results to other mentoring programmes which are conducted differently from GGBC may be impossible.

ii. The participants in the e-mentoring programme study were girls only. As such the findings of the study may be limited to girls and may not be applied to mixed schools.

iii. There may be other outcomes of e-mentoring in educational setting but this study concentrated on self-esteem, self-efficacy, and academic achievement.
1.10 Assumptions of the Study

The study was based on the following assumptions:

i. The participants would give accurate and honest information to the researcher.

ii. All the students in the schools that participated in the study (including e-mentees) are treated equally in those schools; hence any difference observed would be as a result of the programme.

iii. The e-mentees were able to utilize internet effectively in their communication with the mentors.

iv. It was also assumed that the e-mentors and e-mentees had been able to develop a relationship during the time they had been communicating.

v. That the practice of e-mentoring was a cherished and desired experience by the mentees, teachers and parents; and that the information collected through this research would be useful to schools, parents, administrators and policy makers alike.

1.11 Theoretical and Conceptual Framework

1.11.1 Theoretical Framework

The study was guided by two theories: The theory of communication in mentoring relationship propounded by Kelbfleisch (2002), and the looking self-glass theory by Cooley (1902). These theories provided a lens through which the researcher established whether e-mentoring facilitates the development of
relationships, and impacts on self-esteem and self-efficacy, and whether it also enhances the students’ academic achievements.

**Theory of Communication in Mentoring Relationships**

This theory was propounded by Kelbfleisch (2002) and it focuses on the development of relationships and the communication strategies and how these relationships are maintained. Kelbfleisch likens the initiation of mentorship to the initiation of friendships and love relationships in terms of communicating relational expectations appropriately. According to him, the mentor is powerful in relationships, while the mentee is anticipated to direct more communicative attempt towards initiating, maintaining and repairing the friendships.

The theory is relevant to this study in that the mentoring process reflects the development of relationships. In this process, the e-mentor is supposed to initiate a relationship by guiding the mentee towards maintaining, and repairing relationships so that the expected outcomes, like the enhancement of self-esteem and self-efficacy are achieved. The enhanced relationship may work as a driving force to hard work that eventually translates to good academic performance. Again, the mentors act as role models mainly when good relationship is established. The process of mentoring allows the mentors to help the mentees; and in turn the mentees also desire to mentor another person later in life as part of giving back to the society what they too have received.
The Looking Glass Self -Theory

The looking-glass self theory by Cooley (1902) is a popular theory within the sociological field known as “symbolic interactionism”. It explains the formation of a self-image via reflection. The looking glass-self idea emphasizes that the self is inseparable from social life and involves some reference to others. We are, as Cooley (1902) argues, influenced by those whom we especially see as being over us. In his studies, Cooley used participant observation method with his own children in order to get an idea about the depth of the process in the development of the “self” idea. Cooley contends that “in the presence of one whom we feel to be of importance, there is a tendency to enter into and adopt others judgment of ourselves”, thus, influence is something that tends to flow from above to below.

The researcher adopted the looking –self glass theory because of the social interaction between the e-mentors and e-mentees is assumed to have some influence in the self-perception of mentees. The theory fits well with the e-mentoring process and in particular how the e-mentees self-esteem and self-efficacy may be influenced by their mentors. Yeung and Levi (2003), citing Cooley (1902), maintain that girls have, as a rule, a more impressive sociability and care more for the social image than men who have a greater power of standing alone. Therefore, the looking glass self is directly related to self-awareness, self-esteem and self-efficacy. These concepts, indeed, may be said to be formed through undergoing the process coined by Cooley as the looking glass-self idea. Thus, as the esteem and self-efficacy for the image source increases, the
impact of the projected image also increases. In this study, it was assumed that as
the e-mentor and e-mentee relationships intensify, the level of self-esteem, self-
efficacy and academic scores of the e-mentee may also increase.

When persons receive negative or condescending responses to their
appearance from a variety of persons they socialize with, they might begin to
view themselves as less physically attractive or appealing. When they receive a
positive or encouraging response to jokes or comedy, they become more apt to
engage in these social behaviours or to take pride in their social skills, especially
the ability to communicate effectively. The e-mentees are able to have better
relationships and hence communicate more effectively with their e-mentors. The
concept is somewhat related to the psychological concept of projection in which
case human beings interpret the reactions of those they socialize with in regard to
how they see themselves, feel about themselves, their appearance and project
these interpretations unto themselves. In this way, people are directly moulded,
influenced and, in some cases, entirely built up around the reflections of
themselves that they see in others. Similarly, individuals who are low in self-
esteeam are more influenced by negative feedback from others and less by positive
feedback than are individuals with high self-esteem (Shranger & Schoeneman,
1999).

Communication is a basic tenet for enabling emergence of the self and for
the social life of an individual. The communication between the e-mentor and e-
mentee, therefore, is crucial in the unfolding of the self in the mentee. It is
expected that this communication will not only enhance the self-esteem and self-efficacy of the mentees but also strengthen the effectiveness of the relationship. One's self-awareness is thus heavily influenced by these social responses, and to some degree persons become reflections of what they see projected unto them by others – a summation of the symbolic interactions and exchanges between their selves and "the other".

1.11.2 Conceptual Framework

E-mentoring is a process of relationship in which an e-mentor and an e-mentee engages in. Positive relationship between the two parties may have an influence on the e-mentees whereby they may improve on their levels of self-esteem, self-efficacy and academic achievement. On the other hand, the relationship may have a negative outcome especially if the e-mentor and e-mentee are not getting on well. In this case, the e-mentee may develop a low self-esteem, low self-efficacy and may score low in academics. This is conceptualized in Figure 1.1.
Figure 1.1: Relationship among e-mentoring, self-esteem, self-efficacy and academic achievement.

**KEY**

IV Independent Variable

DV Dependent Variable

The above framework indicates that the nature of relationship between the e-mentor and the e-mentee may lead to either positive or negative relationship. Where the relationship is positive, outcomes such as high self-esteem and high self-efficacy are expected. On the other hand, negative relationship may result in low self-esteem and low self-efficacy. High self-esteem and self-efficacy creates a conducive environment for high academic achievement, and vice versa.
1.12 Operational Definition of Terms

**Academic achievement:** - The scores attained by the students in second term of year 2012 in English, Kiswahili and Mathematics.

**E-mentoring:** – Relationship between an e-mentor and e-mentee which is established through exchange of emails (internet technology) for the purpose of guiding the e-mentee in various aspects of life.

**E-mentee:** – The secondary school student who is being mentored or guided by the e-mentor through email.

**E-mentor:**– Is an adult woman who is a trusted guide and has developed a relationship through email with a secondary school girl in order to teach, lead, guide or coach in all matters of life.

**Financially deprived students:** - These are students whose parents are not able to cater for their school fees because they are not financially able due to their economic status.

**Mentoring:** – Generally, a one-on-one relationship between an adult and a youth that continues over time and is focused on the youth’s development.

**Mentoring programme:** - An established programme designed to guide a mentor towards helping and guiding an individual’s (mentee) emotional development such as self-esteem, self-efficacy and academic achievement. The programme is designed in such a way that both the mentor and the mentee can have face to face contact except in the case of e-mentoring.
**Self-efficacy:** - This is a belief and judgment that people have about their capabilities in executing courses of action required to attain certain performances. In this study self-efficacy was measured using scores on Sherer et al (1982) self-efficacy scale.

**Self-esteem:** – Refers to the value someone gives to his or her life and accomplishments. In this study, self-esteem was measured using scores on Rosenberg Self-esteem Scale.
CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction
This chapter contains literature review of studies related to mentoring of adolescents particularly secondary school adolescents. This literature review is divided into various sections. The first section begins by giving a brief and general overview of mentoring relationships. The second section has discussed the relationship between e-mentoring and self-esteem, while the third part deals with literature related to e-mentoring and self-efficacy. Finally, the last section reviews studies that have explored the relationship between e-mentoring and academic achievement.

2.2 Mentoring Relationships
Increasing and enhancing benefits for e-mentee is a central purpose for e-mentoring programmes. These benefits are accrued through the relationship that may exist between mentors and mentees. For a mentoring relationship to build a reasonably consistent contact is needed. This contact, which is established through dialogue, is mentee-centered, interactive and both mentors and mentees contribute to this relationship. Communication therefore is central to the initiation, maintenance, and repair of mentoring relationships.

Although all mentoring programs aim to promote positive youth outcomes, they vary somewhat in their goals, emphasis, and structure. Some programs have broad youth development goals, while others focus more narrowly on improving academic performance, helping youth stay in school, preparing
youth for a particular line of work, or reducing substance abuse and other anti-social behaviors. Some programs are unstructured; others are highly structured. Although positive, sustained relationships with parents represent a critical resource for children, other adults can provide support that is similar to the support that a parent provides. This support from other adults can either be in addition to that provided by a parent or in place of support that a parent refuses or is unable to give (Jekielek, Moore, Hair, & Scarupa, 2002). Scales and Gibbons (1996) assert that the very foundation of mentoring is the idea that if caring, concerned adults are available to young people, youth will more likely become successful adults themselves.

2.3 E-mentoring and Self-esteem

Self-esteem is a widely studied phenomenon that has gained a lot of attention in today’s world. It is a complex concept that has multiple variables, each of which can serve to enhance or hinder an individual’s concept of themselves. Keith, Vidourek, Davis, and Warren (2002) carried out a study on increasing self-esteem and school connectedness through multidimensional mentoring to fourth-grade students in a Midwestern public school. Twenty-eight fourth-grade students out of the initial 283 who had earlier filled a 55-item survey were put on a five month Health Kid Mentoring programme. The programme ran for five months and focused on four components namely, relationship building, self-esteem enhancement, goal setting and academic assistance. The design used was survey and focus group discussions. Pretest-posttest data showed significant
improvements at post-test in mentored students’ self-esteem levels and positive connections to school, peers and family. Mentored students were significantly less likely to be depressed or involved in bullying and fighting at post-test than at the pretest. The mode of study applied to the fourth graders was a face-to-face mentoring programme.

The current study shifted the focus and was conducted with participants who were involved in an e-mentoring programme and who have been in the programme for more than one year. Moreover, there was no pre-test and post-test processes in the current study as it generally dealt with those students who were already in the e-mentoring programme and others who were not in the programme. In addition the study did not concern itself with relationships between the e-mentees, their families and peers as with the Keith and colleagues’ study.

Derrick (2009) examined the perceptions and opinions of six subjects in a high school mentoring program in Detroit, Michigan. The study adopted a portraiture research design and the participants comprised two African American male high school principals, two African American male at-risk high school students, and two African American male high school students who were not at-risk. The findings of the study suggested that, the mentoring relationships positively impacted the students. While the forgoing study focused on male students and their principals, the participants in the current study were female students and their principals were not involved in the study.
DuBois and Silverthorn (2005), investigated characteristics of natural mentoring relationships as predictors of adjustment outcomes among older adolescents and young adults (N = 2,053) in the Add Health study. The study reported that, a vast majority of the teens in the study (72.9%) reported having someone in their lives who served as a mentor. The results also indicated that, more than 40% of the mentors were family members, while 26% of the mentors were teachers or guidance counselors, coaches, religious leaders, employers, coworkers, neighbors, friends' parents, doctors or therapists, and others. The researchers found that the adolescents who reported having a mentor in their lives were more likely to complete high school, attend college, work more than 10 hours a week, have higher self-esteem, be more satisfied with their lives, be more physically active, and were more likely to use birth control than those who did not report having a mentor. Moreover, the adolescents who reported having a mentor were also less likely to join a gang or hurt others in physical fights, as well as less likely to take risks. It was indicated that those mentors who had intermittent contact with their mentee were less able to provide monitoring of the mentee's activities and less able to affect positive outcomes in their mentee's lives. These findings indicate that a stable relationship with a mentor results in substantial positive impacts on the mentee's life.

Koch (2010) examined the four self-report measures utilized by Big Brothers Big Sisters, including a measure of positive changes in child behavior completed by the child's parent and mentor, and measures of the strength of the mentoring relationship completed by the child and the mentor. These measures
were compared to the child's rating of self-esteem to explore the relationships between each. Based on data from 23 matches (i.e., one mentor, one child and one parent), the hypothesized relationships between the measures were not statistically supported, potentially due to the low sample size. The results revealed a statistically significant relationship between the mentor ratings of change in the child's behavior, and the mentor ratings of the strength of the mentoring relationship. Furthermore, a statistical relationship trending toward significance was shown between mentor ratings of positive changes in children's behavior and child ratings of self-esteem. While the above reviewed study investigated mentoring in general, the current study seeks to focus on e-mentoring among adolescent students in high schools.

Another study carried out by Phillips et al. (2006) explored the impact of group work and mentoring on multiple heritage children’s self-esteem, wellbeing and behaviour. The sample used was 43 children, both boys and girls aged between 8 and 15 years on whom the Rosenberg Self-esteem Scale was administered. There were improvements on the Rosenberg Self-esteem Scale from 31.415 to 33.024 (p =0.005) with more improvement among younger children and boys (p=0.004 and p=0.001); and well-being as measured by the GHQ12 improved from 1.460 to 0.8378 (p=0.111) with more improvement among older children (p=0.026). On the third measure, of problem behaviour (the Strengths and Difficulties Questionnaire) there was an improvement from 12.4 to 12.1 (p=0.716) but there was no improvement at all for girls. Mentoring was evaluated by telephone interviews between June and October 2006 with 14
mothers whose children had just completed, or were nearing completion of, mentoring (response rate 70 per cent). The findings indicated that, the mothers’ evaluations were highly positive, in that, mothers commended the positive role model effect same-sex mentors had on their children’s behaviour; but only a third said mentoring had boosted their children’s self-esteem. The above reviewed study focused on children’s self-esteem, but the current study was conducted only among girls who are in their adolescence stage in a e-mentoring programme. Hagan and colleagues’ research had its findings reported by the participants’ mothers, but in the current study the participants evaluated themselves on the stated areas of interest.

Hurd, Sánchez, Zimmerman, & Caldwell (2012) studied the effects of a mentoring program designed to help middle school girls from low income families cope with stress and improve self-esteem. A non-equivalent control group, pretest-posttest design was used. The independent variable was the mentoring program, in which the mentors were nursing students and the mentees were middle school girls. The dependent variables were stress and self-esteem scores. The program was conducted using group activities and personal approaches through the mentor-mentee relationship. At follow-up, the stress and mental health scores had improved significantly in the intervention group compared to the control group. The self-esteem scores in the intervention group were significantly higher after the intervention than scores before the intervention. While the above reviewed study focused on mentoring among girls from poor
families, the current study seeks to investigate e-mentoring among girls from both poor and moderate families and the findings could be different.

Ghosh, Reio, and Haynes (2012) explored how perceptions of reciprocal support in mentoring influence mentors’ and protégés’ intent to extend work-related help to coworkers in organizations. Mentors \((n = 82)\) and protégés \((n = 160)\) from three U.S based corporations were surveyed. Results of mediation analyses employing multiple mediation model testing shows statistical and practical significance for protégés' as mediators. The lack of support for any mediators for the mentors indicates that the process underlying the link between mentoring and OCB may differ for mentors. The above reviewed study focused on mentoring in general, while the current study seeks to investigate e-mentoring among the adolescent girls.

Leboeuf (2011) study evaluated a college-campus mentoring program for low-level or first-time offending youth. Using hierarchical regression models, it was determined that youth in Campus Corps, compared to non-participants, experienced higher levels of self-esteem, self-concept, and feelings of being important to others. The findings also indicated that, youth in higher-quality mentor relationships experienced, on average, lower rule non-compliance, higher levels of self-esteem, higher feelings of being noticed by others, and higher feelings of being important to others.

Mok (2010) investigated the impact of informal mentoring on adolescence development at an international school in Hong Kong by using both a quantitative and qualitative approach. Participants \((n = 163, \text{aged around 18})\) were self-
selected into groups ranging from ‘much mentored’ to ‘not mentored’. The variables representing positive growth were peer relations and parent relations, measured by the Inventory of Parent and Peer Attachment (IPPA), perception of scholastic competence measured by the Self-Perception Profile for Adolescents (SPPA), actual academic achievement, and global self worth also measured by the SPPA. Descriptive data on the development and nurturing of mentoring relationships were collected through a questionnaire completed by students and extensive interviews conducted with seven participants. Correlations were found between having experienced informal mentoring and positive relationships with parents, while no significant differences were found for the other variables. The results indicated that, teenagers who were mentored had better relationships with their parents as they demonstrated higher attachments to mother and father, less alienation from mother and better communication with both parents.

Schwartz, Sarah, Lowe and Rhodes (2012) studied mentoring relationships and adolescents’ self-esteem. The study reported positive relationships among the mentees. It concludes with recommended practices for mentoring programs which can contribute to positive youth outcomes. This study concentrated itself on self-esteem and other constructs as indicated in the introduction.

In another study, Culpepper (2008) examined whether or not e-mentoring had an academic and psychological impact on the mentees. The students were enrolled in a GED Exit Option program at two technical centers in a large urban school district in Florida. Each student was matched with a mentor who was a
business partner and involved with one or both of the technical centers in an advisory capacity. The students and mentors were randomly matched and never met face-to-face during the program. By using the design experiment methodology during the course of the study and examining the quality of each component of the e-mentoring model as it was being implemented, revisions were made as problems were identified during each component of the e-mentoring program. The students, mentors, and instructors who participated were co-participants in the design and analysis and provided input using surveys and focus groups at several intervals throughout the e-mentoring program. The findings showed that, there were no significant differences between the participants and the non-participants in the program as it related to self-esteem, career indecision, attendance, and academic achievement. This study undertook focus discussion only once unlike Culpepper’s study which undertook focus groups at various intervals. Moreover, Culpepper’s study used experimental design while this study adapted ex-post factor design.

Shpigelman, Shumit, and Weiss (2008) undertook a qualitative study with five teenage students, two girls and three boys from Israel special school that cater for students with various disabilities who were aged between twelve and eighteen years. The programme was run by a Computer Science teacher. The intervention lasted for three months in which mentors were supposed to send two email messages per week while the mentees were sending just one message per week. The findings indicated that mentees reported they learned how to use computer
and internet while the teacher reported that the e-mentees appeared to increase in self-image and self-esteem.

Unlike the foresaid study, the current study dealt with normal students without any disabilities. Additionally, the e-mentees in this current study had been in the e-mentoring programme for a period of more than one year. The difference in the intervention period between the two studies is quite long and so the researcher hoped that there would be positive results in the self-esteem of the participants in the current study. Furthermore the current study used quantitative instruments unlike the other one that used qualitative instruments. The current researcher, therefore, expected findings to be different due to use of different instruments.

Ahrens, DuBois, and Laura, (2010) investigated whether having naturally acquired mentor during adolescence was associated with improved adult outcomes among youth with learning disabilities. This was a longitudinal study which took six years to complete and was done in three phases. The sample was composed of 80 high school students and 52 students from middle schools in United Stated. The researcher used questionnaires and also interviewed parents. The findings indicated that mentored youths were more likely to have graduated from high school, reported a high level of self-esteem, and that generally they had more positive outcomes than the non-mentored youths. While this study was a longitudinal and interviewed parents, the current study was not longitudinal and neither did it include parents in the research. The current study also used normal
ordinary adolescents unlike the earlier study that was conducted using youths with learning disabilities.

Lara (2007) carried out a phenomenological case study of mentoring to provide a list of outcomes that mentors have as a result of being involved in a service-learning course over the course of one academic semester. 21 participants were included in this study. This study found that participants enrolled in the course for specific reasons, which included (a) forming relationships, (b) providing hope and promoting personal development, and (c) modeling goal setting. In regards to self-esteem development, the Leadership in the Community course provided the participants with a positive support system, a forum for sharing personal accomplishments, and an outlet to serve the local community by serving as a mentor. The participants displayed the ability to personally reflect about themselves and their mentoring experience in classroom interactions, mentor journals, interviews, and personal reflection papers on themes such as, personal growth, identity formation, past experiences, and experiences with their classmates.

The current study did not use interviews and mentoring journal although it used Rosenberg self-esteem scale as Lara’s study. The researcher was interested in establishing the levels of self-efficacy of e-mentees using Rosenberg scale only. From the above reviewed studies, it can be noted that most of the studies were focused on mentoring in general, and some had mixed samples and adapted different designs, however the current study intends to focus on e-mentoring
among adolescent girls. Therefore, the current study would fill these gaps that exist in literature.

2.4 E-mentoring and Self-efficacy

Mentoring has been practiced in various settings, for example in nursing and teaching professions, as well as in learning institutions like junior schools and secondary schools. Whatever the setting, mentoring has been found to enhance development of self-efficacy. Bandura (1997) postulates that at one’s self-efficacy is one of the best predictors of academic achievement. In schools, for example, following Bandura’s theory of self-efficacy, students who are involved in mentoring programmes have been found to have a sense of self-efficacy.

Flood (2012) investigated mentoring and self-efficacy among female undergraduate business students. The study adopted a survey design and the participants comprised undergraduate women in a business program at a large Midwestern university. The participants completed an online survey that collected basic demographic information and then, if the student had a mentor, the College Student Mentoring Scale, finishing with the Task-Specific Occupational Self-Efficacy Scale. The outcomes of this study are similar to other literatures that look at the relationship between mentoring and self-efficacy. The study found that mentored students did report higher self-efficacy scores than those students without mentors. The study also explored the difference in self-efficacy scores depending on the gender of the mentor but no conclusive results were found. There is also slight evidence favoring a positive relationship between mentoring
and students’ business career self-efficacy although no results were statistically significant. These findings provide additional support for further research to evaluate how the measures are related as well as evidence that points to the importance of mentoring for women in business school. The foregoing review only focused on the influence of mentoring on the self-efficacy of college participants; however, the current study focuses on the concept of e-mentoring which may bring in a new dimension that is different from what has been investigated earlier.

Vance (2012) examined the relationship between mentored ministerial field education’s four components and student efficacy beliefs in 11 professional skills for students at several evangelical seminaries in the U.S.A. A new self-efficacy survey was developed, and N=102 students from 7 seminaries participated. Practice accounted for 7.9% of the variance in self-efficacy. Observation, instruction, and feedback were more weakly correlated with self-efficacy and not significant in the regression. On a scale from 0 (“I cannot do at all”) to 10 (“Highly certain I can do”), participants’ self-efficacy in the skills ranged from 6.89 in counseling to 8.98 in “using and interpreting Scripture;” and there were indications that many participants had received a somewhat uneven field education. Only 23% of participants reported receiving sufficient practice and 19% sufficient feedback for them to become competent professionals.

While the above reviewed study was carried out in USA, the current sought to investigate the phenomenon in Kenya which is totally different in terms
of Geographical, economic, and social setups and the findings could fill gaps that exist in literature.

Allison (2010) undertook a study to explore the connection between participation in an out-of-school time creative writing for adolescent girls and development of self-efficacy in creative writing and other areas. The participants were 18 alumni members of Write Girl, a Los Angeles-based Out of School time programme. The study utilized electronic method tools such as online interviewing. The findings indicated a strong connection between confidence in creative writing skills and in other areas. Unlike the reported study, the current research had participants drawn from an e-mentoring programme that uses e-mails for its communication. While the above reviewed study concentrated on creative writing skills, this study investigated the general levels of self-efficacy. In addition, the current study compared the levels of self-efficacy of students participating in the GGBC programme and those not participating in the programme, hence the findings may be different.

Larose (2013) studied self-efficacy among college mentees. The mentors matched with college mentees evaluated their self-efficacy nine times, during their participation in an academic mentoring program. Three distinct groups emerged as follows: (a) mentors who perceived themselves as moderately efficient throughout the mentoring relationship (the moderate stable (MS) group), (b) mentors who considered themselves moderately efficient at the beginning of the match, and increasingly so as the relationship progressed (the increasing (IN) group), and (c) mentors who perceived themselves as very efficient at the
beginning of the match, but who subsequently experienced slight fluctuations of their self-efficacy (the high unstable (HU) group). Several personal and experiential factors such as the mentors’ sensitivity to distress and the mentees’ parental autonomy support predicted the likelihood of belonging to the IN or HU groups (as opposed to the MS group). These findings are interpreted according to the premises of the self-efficacy theory. The foregoing reviewed study was carried out within the college contexts and the sample comprised mature students, but it does not provide any information regarding the adolescent students. Therefore, the current study would fill these gaps in literature.

Rhodes and Fletcher (2013) carried out a study on Coaching and mentoring for self-efficacious leadership in schools. The study offers an analysis of existing research evidence in coaching, mentoring, talent management, leadership development and self-efficacy to propose a framework useful in research and in the development of self-efficacy that may help secure transition between the potential to lead and high performance in leadership incumbency in schools. The study reported on the importance of coaching and mentoring as potential scaffolds to create an appreciation of self-efficacy's value at all stages of the headship journey. It is suggested that active development of individual's self-efficacy through mentoring and coaching relationships may serve to ensure that the loss of human potential of those who could lead but never completed the journey is reduced.
Chopin, Danish, Seers, and Hook (2012), studied the effects of Mentoring on the Development of Leadership Self-Efficacy and Political Skill. This study of 260 business graduate students considered the relationship between mentoring and leadership self-efficacy, and mentoring and political skill. Comparisons between non-mentored and mentored individuals showed that having a mentor was associated with increased political skill but not with increased leadership self-efficacy. Among mentees, higher quality mentoring relationships were associated with significantly higher leadership self-efficacy but not with significantly higher political skill. Results suggest that the presence of a mentor affects protégé development of political skill, but the quality of the relationship is important for protégé development of leadership self-efficacy.

The above reviewed two studies focused on mentoring among college students, but did not present information about high school students. Therefore, the current study fills this gap in literature by presenting the findings from the students.

Lyne (2013) studied the effects of teacher mentoring programme in Malaysia on improving teachers' self-efficacy. A one-group pre and post-test design was used to measure their self-efficacy (Lyne Mentor Scale) and achievement (Observation form). The sample used in this study was a convenience sample composed of 21 Malaysian teachers. The teachers were all in the same Mentor programme and same cluster but they came from various teaching backgrounds. There were 10 Chinese, 1 Indian, and 10 Malay with 20 of them being female, and 1 being male. None of them had ever been in a mentoring
programme before. This study used a one-group, pre/post-test design to gather information regarding both a change in teacher self-efficacy (Frequency, Importance and Confidence) and a change in achievement level of their classes. The results of a mentee’s overall self-efficacy (as a measure of how each mentee felt at the time) was measured (both pre-intervention and post-intervention) by having them fill out the Lyne Mentor Scale which included three different sets of self-efficacy criteria. The two-tailed $P$ value of the overall self-efficacy score was set at 0.05 and the gain in teacher self-efficacy was 9.71 which is statistically significant. The results of this study seem to indicate that both the teachers’ self-efficacy and achievement improved. The above reviewed study focused on teachers alone, but the results did not indicate any findings from students. Therefore, the current study may provide more information particularly in the area of providing more literature in e-mentoring phenomenon.

Yost, Handley, Cotten and Winstead (2010) studied understanding the Links between Mentoring and Self-Efficacy in the New Generation of Women Science, Technology, Engineering, and Math (STEM) Scholars. The study examined the impact of mentoring on self-efficacy for female graduate students and post-doctoral fellows in STEM fields. Using data from a national study of selected U.S. academic institutions, recommendations were made in order to enhance mentoring practices that will reduce the barriers women face within STEM fields. Quality mentoring programs represent a viable way to enhance institutional change that may result in increased numbers of women in STEM fields.
Lisa and Obasi (2008) carried out a study on effects of mentor’s influence on Mexican American high school students’ career aspirations. Mentors were found to be helpful through role modelling, personal support, career guidance and aspects related to self- efficacy. The current study sought to establish the levels of self-efficacy unlike the fore mentioned study which dealt with career aspirations and efficacy.

Klassen (2010) examined the self-efficacy for self-regulated learning of 146 early adolescents with and without Learning Disabilities (LD). Results from the study showed that a 7-item self-regulatory efficacy measure demonstrated factorial invariance for the adolescent sample and also for a validation sample of 208 undergraduates with and without LD. Adolescents with LD rated their self-regulatory efficacy and reading self-efficacy lower than their NLD peers. Hierarchical multiple regression showed that self-regulatory efficacy made a significant contribution to end-of-term English grade after controlling for sex, SES, reading self-efficacy, and reading score. Finally, students with LD who scored low on self-regulatory efficacy were significantly more likely than their higher-scoring LD peers to have a low end-of-term English grade, although there was no difference on a reading performance score. Several suggestions for teachers working with adolescents with LD are provided, along with directions for future research.

Maina (2013) investigated the effects of mentoring on self-efficacy, self-esteem and locus of control needs of economically poor women by focusing case study of AmaniyaJuu. The study investigated on the effects mentoring has on self-
efficacy, self-esteem and locus of control needs of economically poor women; the mentoring approach as an alternative counseling model that brings change to the economically poor women in self help groups and to find out whether there is a significant length of time for mentoring before changes are evident in the women self-efficacy, self esteem and locus of control. The results of the study indicated that mentoring has positive effects on self-efficacy, self-esteem, and locus of control needs of economically poor women. The findings also indicated that mentoring is a viable counseling approach that brings change to economically poor women.

In Kenya, several studies on self-concept have been done. For example, Kwena (2007) investigated into selected factors on academic self-concept in Bondo district. She used an ex-post factor design and had a population of 972 primary school pupils. Her findings showed that there was a significant positive relationship between academic concept and academic achievement. Kwena’s (2007) study dealt with self-concept of primary school pupils unlike the current study which dealt with self-esteem, self-efficacy and academic achievement of secondary school girls. Moreover, the current study emphasized the influence of e-mentoring on self-esteem, self-efficacy and academic achievement, hence necessitated the carrying out of this study.

2.5 E-mentoring and Academic Achievement

One of the major focus of mentoring in learning institutions is on enhancement of the performance grades so that the mentees can be opened up to
opportunities that require good academic grades. Several studies postulate that mentoring improves academic grades. Thompson and Kelly (2001) conducted a study on the impact of online mentoring on academic achievement of at risk youths within Big Brothers Big Sisters programme. An academic achievement test was administered to 12 boys who had mentors and 13 boys in control group. The results indicated that the group that had mentors had significantly performed better than the control group. The present study was conducted on girls only who are not at-risk. The gender issue therefore yields different results from those in previous study. Similarly, Karcher (2009) carried a study with 46 teen mentors and 45 comparison classmates. The results reported an improvement on academic achievement, self-esteem and connectedness. Rhodes, Grossman and Resche (2000) point out that the message mentors send out to mentees regarding the value of school stimulates adolescents such that their attitudes towards school improve their academic performance. One of the major roles of e-mentors in the Global Give Back Circle is to encourage e-mentees in defining their goals in life. This includes helping them approach learning with a positive attitude so that they may attain their academic goals.

Rhodes (2007) investigated whether a five-month school-based cognitive-behaviour mentoring intervention on ninth graders could enhance high-risk (students with low grades, attendance, and/or discipline problems). The study compared 20 students who received intervention and 20 who did not receive any intervention. In this study, students who were mentored as intended showed patterns of positive change in academic motivation, self-efficacy, and academic
achievement. The above reviewed study was conducted on urban minority youth. However, this research was carried out on adolescents who are from a semi-rural set up. The students who participated in this study had no behavioral problems and the mode of communication with their mentors was through e-mail. Moreover, the sample size of the current study is larger than that of the previous study. Again, unlike participants in the previous study, participants in this current study did not receive any intervention.

Rodger and Tremblay (2003) investigated the effect of participation of first-year university students in a full-year peer mentoring program as well as individual differences in motivation in relation to outcome measures of retention and achievement. A sample of 983 first year students completed the Academic Motivation Inventory (Tremblay, 1998) and agreed to provide final grades; 537 students were randomly assigned to participate in the program, while the remainder served as a control group. Mentored students who continued to participate mid-way through the second semester had significantly higher final grades than did students in the control group. There was no effect on retention from year one to year two; however data are being collected on retention and grades for all groups for the length of their undergraduate careers. Students high in anxiety in the mentored group showed achievement comparable to that of low anxiety program participants, whereas students in the control group with high anxiety scored significantly worse on achievement than did their low anxiety counterparts. The above reviewed study only focused on mentoring in general but
did not study mentoring. Therefore, the current study would fill this gap in literature of studying secondary school students.

Lampley and Johnson (2010) examined a mentoring program entitled: LISTEN (Linking Individual Students To Educational Needs). The LISTEN mentoring program was a district-sponsored, school-based program in which at-risk, middle school students were identified by the school system and mentors were recruited specifically to assist these students with school performance or related issues. Mentors, in this study, were classroom teachers, school counselors, administrators, custodians, librarians, teaching assistants, retired teachers, and cafeteria employees. Archival data from the 2003–04 and 2004–05 academic years were analyzed. A statistically significant difference was found for all three of the study’s criterion variables (GPAs, discipline referrals, and attendance records) between those measured in the 2003–04 academic year (pre-intervention) and those measured in the 2004–05 academic year (post-intervention). Forty-nine of the fifty-four LISTEN participants experienced academic achievement gains in all three areas of the study. The study adopted an ex post facto design and was descriptive in nature. Data were analyzed, using paired sample t-tests, to compare the differences in each of the three variables (GPAs, discipline referrals, and attendance rates) between the pre-intervention scores (2003–04) and the same students’ post-implementation scores (2004–05). In this situation, each subject acted as his or her own control (Hinkle, Wiersma, & Jurs, 2003). The mean GPA for post-intervention students was significantly different than the mean GPAs for pre-intervention students, $t (53) = 12.39, p < .001$. The students’ post intervention
GPAs were significantly higher than the same students’ GPAs the previous year. There was a strong standardized effect size index ($\eta^2 = .74$). Post-intervention mean discipline referrals were compared to mean discipline referrals for the pre-intervention year, $t(53) = 7.32$, $p < .001$. Discipline referrals for the post-intervention period were significantly lower than pre-intervention. There was a moderate standardized effect size index ($\eta^2 = .50$).

Renee (2009) examined the effects of an alumni student mentoring program on seniors’ satisfaction, academic performance, and the extent to which participation predicted future relationships with mentors, peers and the program itself. A 26 item web-based Likert-style survey was administered to a cohort of 182 seniors who were the first to complete eight successive semesters in the Cornell Alumni Student Mentoring Program. These components were examined to determine if statistically significant differences existed, based on gender, race, and college/school enrolled in at Cornell. Correlation coefficients were used to determine the degree of linear relationship between intervening and dependent variables, and forward regression modeling was conducted to predict students' satisfaction, wanting to become a mentor and to continue relationships with the program and mentors. The results indicate that males more than females seemed to benefit more significantly from the program. There were no statistically significance differences in race and college enrolled in. Moreover, the quality of the mentor/mentee relationship predicted program satisfaction, the desire to become a mentor, maintain relationships, and recommend the program to incoming students.
Cook (2008) undertook a study on the perceived effectiveness of a mentoring programme among students in the Dr. Betty Shabazz Delta Academy. The hypothesis of the study was that there is a greater improvement in students with mentors than in students who do not have mentors. The methodology used to collect the data was survey whereby the questionnaire was directed to the mentees, mentors and teachers. The report identified positive influences of mentoring on the child being mentored. Again, the students, mentors and teachers reported a significant gain in the second year’s participants’ academic success in mathematics and science.

The participants in the foregoing study were primary school children. However, in contrast, the participants in this current study investigation were secondary school students. Moreover, the reported study was carried out on a face to face mentoring programme basis in a single institution, while this research was done in two schools. Therefore, the findings of the current study would fill in gaps in literature.

Kaula (2010) investigated the relationship between anxiety levels and academic achievement of secondary school students in Lang’ata District, Nairobi County. She used correlational design on sample of 180 students (90 boys and 90 girls). The results showed that there was a correlation between anxiety levels and academic achievement. This particular research, unlike Kaula’s study, dealt with secondary school girls who are in an e-mentoring programme. This study compared students in e-mentoring and those not in the programme in order to find
out if the students in the e-mentoring programme have higher levels of self-esteem, self-efficacy and academic achievement than those not in the programme.

In their evaluation of different youth programmes, Ekielek, Moore, Hair, and Scarupa (2002) assert that young people who perceive high-quality relationships with their mentors experience the best results, how positive perceptions about these relationships, earned higher grades, were considered more likely to go to college. However, those who ranked these relationships in the "moderately-positive" range experienced improvements on some academic and behavioral measures. Again for those who gave these relationships the lowest ranking they showed virtually no positive results.

In general, most of the reviewed studies focused on contexts which were different from high schools and moreover, all of them investigated mentoring in general and none was on e-mentoring. Therefore, the current study would fill in gaps that exist in literature.

2.6: **Duration in E-mentoring Programme and Students’ Self-esteem and Self-efficacy**

Mentoring relationships vary from one mode to another. Crossman and Rhodes (2002) posit that promoting and sustaining development is a primary goal of mentoring because long lasting relationships tend to yield greater benefits for youth while short-term relationships may have unintended negative consequences. Strange, Neuenschwander and Dauer (2010) explored the relationship between age and self-esteem in female children and adolescents. Females in grades 2-12 in the Camden-Frontier School District were examined regarding their self-esteem.
The junior high and high school participants completed the Rosenberg Self-esteem Scale to assess levels of self-esteem. The elementary school participants completed a version of the same scale that was slightly modified for age. The age related changes in self-esteem were determined using an ANOVA. It was predicted that self-esteem would begin at high levels in early childhood, drop around junior high, and increase again in high school, resulting in a curvilinear relationship.

In the above study, the number of surveys completed was 156 which ranged from second to twelfth grade. Of these 156 surveys, 14 were from Grade 2, 18 from Grade 3, 6 from Grade 4, 25 from Grade 5, 10 from Grade 6, 9 from Grade 7, 14 from Grade 8, 17 from Grade 9, 20 from Grade 10, 9 from Grade 11, and 11 from Grade 12. To obtain the results from the Rosenberg Self-Esteem Scale an ANOVA was used. The results showed no significant difference between the grade levels, $F(10, 155) = 1.551; p = 0.127$. Results of the study produced no significant differences in self-esteem between the age groups. The above reviewed study focused on self-esteem among students from different and varying years, but the current study concentrated on high school girls only. Therefore, the current study fills in gaps in literature by bringing in the aspects experienced by adolescent students only.

Chunping, Daiwei, Liu, Yang, Jinfeng and Shasha (2012) investigated different coping strategies, the relationship between coping and self-esteem and influencing individual factors among Chinese female students in different years of nursing school. The study used a cross-sectional design. A representative sample
composed of 686 female nursing students aged 14 years or older was surveyed in December 2010 using the Simplified Coping Styles Questionnaire, the Self-Esteem Scale and the Personal Data Form for assessment. The results indicated that, nursing students more often used positive rather than negative coping styles ($P<0.001$). There was significant difference in the positive coping between nursing students in different years of school ($P=0.018$). The positive coping style was significantly correlated to a higher level of self-esteem, good interpersonal relationships, enough free time for study alone, a sense of self-fulfillment and satisfaction, adaptation to new study methods, close friendships, help-seeking behavior of an individual, and physical health in the past year ($P<0.05$). The negative coping style was significantly associated with problems in romantic relationship, relationship with parents, worry about examinations and job assignment after graduation, feeling misunderstood, and frequent surfing on the internet ($P<0.05$). While the above reviewed study focused on coping strategies in relations to self-esteem, the current study seeks to investigate how self-esteem varies according to the different years of students in the e-mentoring programme, hence the justification of this study.

Kadivar, Nejad and Emamzade (2007) investigated whether there was a significant difference in the level of mathematics academic achievement, social skills and self-esteem among single-grade and multi-grade elementary students. In order to explain the contribution of single-grade and multi-grade classes in the above dependent variables, the participants (268 male& female from both groups)
completed three scales (self-esteem, social skills, and math achievement). The participants were made up of 261 male and female students. They were randomly selected as a stratified sampling in two groups: a) Single-grade classes [(n=130, female n=49, male (n =81)], b) Multi-grade classes [(n=131, female (n=56), male (n=75)]. A research design with three measures on two groups (Single grade and Multi-grade classes) was employed. The dependent variables were social skills, self-esteem, and mathematics achievement. The independent variables were single-grade and multi-grade classes. The results revealed that there was a significant difference between the two groups concerning social skills, and mathematics achievement, with the superiority to multi-graders. Moreover, there was not a significant difference in the level of self-esteem between the two different classes, and finally, that, in the subscales of self-esteem (achievement self-esteem) the multi-grade students were superior to the single graders.

The above reviewed study focused on the differences in the level of mathematics academic achievement, social skills and self-esteem among single-grade and multi-grade elementary students. The current study focuses on self-esteem at different years in the e-mentoring programme. The earlier study also used stratified research design but this study used purposive and *ex-post factor* design.

Mitchel, Smith and Simpson (2003) compared the levels of self-esteem between college freshmen and seniors. The participants in the study consisted of 25 traditional freshmen (aged 18-20) and 25 traditional seniors (aged 21-22)
attending a private mid-western Christian liberal arts university. The mean age for the freshmen in this study was 18.88, whereas the mean age for senior participants was 21.60. One hundred percent of the participants were Caucasian. 25 of the respondents were freshmen and 25 of the respondents were seniors. 12 males and 38 females participated in this study (6 males and 19 females in each group). Because these participants were considered “traditional” students, this study defined “traditional” as between the ages of 18-23 and enrolled in school with at least 12 credit hours. Campus emails were sent to all traditional freshmen and seniors, encouraging them to participate. The Index of Self-Esteem (ISE) was administered to 50 participants, who also provided demographic information that included class standing. The mean level of self-esteem was determined for each group. The means for each group were compared using a two-tailed t-test, with a significance level set at 0.05. The critical t was 2.01 and the obtained t was 0.33. There was no statistical significance found. Implications for future research and limitations of the current study were discussed. A two-tailed t-test was used to analyze the data. When the obtained t of 0.33 was compared to the critical t value (2.01), the null hypothesis was retained. Freshmen and senior scores on the ISE Scale were not significantly different. The age range for freshmen was 18-20 and the range for seniors was 21-22. There were 25 participants in each group. The mean ISE score for freshmen was 26.16 with a standard deviation of 12.43, whereas the mean score for the seniors was 25.08 with a standard deviation of 10.98.
Mitchel and colleagues’ study presented findings regarding college students, who may experience self-esteem differently as compared to the high school students. Therefore, the current study fills this gap in literature by presenting the findings from high school girls.

2.7 Summary of Literature Review and Gap Identification

In the foregoing literature review, the following have been discussed:

i. E-mentoring has been discussed in relation to its influence on self-esteem. The literature has revealed that e-mentoring has positive contribution towards e-mentees’ self-esteem. Studies have shown that e-mentoring aids e-mentees in developing their self-efficacy. Similarly, students who have been e-mentored show improvement in their academic achievement.

ii. While most studies were conducted among male and female participants, few studies had only one gender that participated in their studies. Mixed survey designs whereby questionnaires and Focus group Discussions were common and data was collected using self-administered questionnaire. Some studies reviewed were also purely qualitative in nature. Again, studies reviewed have shown that in other studies, parents of the participants were also interviewed.

iii. The literature reviewed also showed that a number of studies were also conducted among the at risk high school youth for example in Derrick (2009) study. Also reviewed were studies on youths with learning disabilities, for example the study by Ahrens, DuBois, and Laura (2010).
iv. Although the literature sheds light on the influence of the variable of interest (e-mentoring), Self-esteem and Self-efficacy levels on secondary school students (High school students) especially in the United States and Europe, the same conclusions may not be reached as far as Kenya is concerned due to various reasons such as socio-economic factors which vary in these countries; hence the reason to undertake this research in order to confirm or refute such findings. Furthermore the design, data collection instruments, and data analysis procedures, and the setting will differ in the current study.
CHAPTER THREE
RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter presents research methodology which was used in the study; and it is organized into the following sections: The research design, the variables, location of the study, target population, sampling techniques and sample size, research instruments, pilot study, validity and reliability of the research instruments, data collection techniques, data analysis and ethical issues.

3.2 Research Design

This study used mixed designs. In quantitative design, the ex post facto approach was employed. According to Kerlinger (1973), ex-post facto research is a systematic empirical inquiry in which the researcher does not have direct control over the independent variables because their manifestations have already occurred or because they cannot be manipulated. In this study, ex-post factor was used to solicit information regarding self-esteem and self-efficacy levels of students in the e-mentoring programme and that of students not in the programme. The qualitative design employed was purposeful sampling design. Purposive sampling relies on the judgment of the researcher when it comes to selecting the units, for example people, cases or organizations, events, or pieces of data that are to be studied. In this study, the researcher used the purposive design to select the schools and the e-mentoring participants.
3.3 Variables of the Study

The independent variable in this study was e-mentoring. The researcher was interested in looking at the possible influence of e-mentoring on self-esteem, self-efficacy, and academic achievement. This was done by comparing these traits in students in the e-mentoring programme with that of those not in the programme. Self-esteem, self-efficacy, and academic achievement were treated as the dependent variables in the study.

As explained earlier in chapter one, e-mentoring is a relationship between two individuals who are in different geographical areas. One of the persons in this relationship is supposed to be more knowledgeable and hence termed as the e-mentor. In this study, it was envisaged that the e-mentoring relationship would influence the e-mentee’s self-esteem, self-efficacy and academic achievement.

The dependent variables were: self-esteem, self-efficacy and academic achievement.

3.4 The Location of the study

This study was carried out in two schools in Nairobi and Kiambu Counties. In Kiambu County, school A Girls’ school (not real name) took part in this study Kasarani Sub-County in Nairobi County, its administration in Education Ministry falls under Kasarani sub-county. School A Girls is a national school that admits destitute girls with relatively high performance in the Kenya Certificate of Primary Education (KCPE).
In Nairobi County, School B Girls’ school (not real name) participated in the study. The school is situated in a small slum within Kangemi area in Nairobi West sub-county. This is a private school that admits destitute girls from the slums of Kangemi and other parts of the country, who have attained an average performance in the KCPE. School C which is in Ruiru sub-county, Kiambu County participated only in the pilot study.

3.5 Target Population

The target population in this study was comprised of all form three and four students in the two secondary schools that have GGBC programme and they were 277. The accessible population consisted of all students in forms three and four that are in the two schools in the GGBC e-mentoring programme and the total number was 51. It was assumed that the effects of e-mentoring would be felt more for students who have been in the project much longer, hence the need for the study to be conducted among students who have been in the programme for a period of one year and above.

3.6 Sampling Techniques and sample size determination

3.6.1 Sampling Technique

The study utilized non-probability and probability sampling techniques. Kothari (2009) defines non-probability sampling as a procedure which does not afford chance for each item in the population to be included in the sample. In this study, purposive sampling, which is a non-probability sampling technique, was
used to select schools that were in GGB program and students in form three
and four who were in these selected schools. On the other hand, simple random
sampling was used to select an equal number of students who were not in GGB
from the same schools and the same classes for comparison purposes. According
to McMillan and Schumacher (2001), purposeful samples may range between one
and forty because qualitative sample size appears small compared with samples
from surveys meant for generalization.

3.6.2 Sample Size

A sample of 92 students participated in this study. The sample consisted of
form 3 and 4 students who were members of the GGB e-mentoring program
and a similar number of Form 3 and Form 4 students in the two schools who were
not in the e-mentoring program. The distribution of the sampled students in the
two schools is shown in Table 3.1.
Table 3.1: Sampling Frame

<table>
<thead>
<tr>
<th>School</th>
<th>Population</th>
<th>Total</th>
<th>Sampled</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Form Three</td>
<td>Form Four</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GGB Non- GGB</td>
<td>GGB Non-GGB</td>
<td>GGB Non-GGB</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>16 GGB C</td>
<td>80 GGB C</td>
<td>15 GGB C</td>
<td>65 GGB C</td>
</tr>
<tr>
<td>B</td>
<td>5 GGB C</td>
<td>49 GGB C</td>
<td>15 GGB C</td>
<td>32 GGB C</td>
</tr>
<tr>
<td>Total</td>
<td>21 GGB C</td>
<td>129 GGB C</td>
<td>30 GGB C</td>
<td>97 GGB C</td>
</tr>
</tbody>
</table>

The data in Table 3.1 shows the total number of students in form three and four in each participating school and their categories in terms of their membership or non members in the GGBC e-mentoring programme. The last column shows the total number of students who took part in the study.

3.7 Research Instruments

The data were collected using 4 different instruments.

(a) Two five point rating scales (here referred to as questionnaires (the self-esteem questionnaire and the self-efficacy).

(b) Document analysis

(c) Focus Group Discussion guide.

3.7.1 Self-Esteem questionnaire

The self-esteem questionnaire was an adaptation of Rosenberg (1965) self-esteem scale which is a brief unidimensional measure of global self-esteem.
Originally, Rosenberg developed this scale to measure self-esteem in adolescents. This questionnaire had two parts. Part A gathered demographic data from the participants while part B measured the self-esteem of students. It was a 10 item self-administered Likert scale but more items were added to make 14 in number instead of 10. This modification was done as a result of suggestions from supervisors and other lecturers. The adaptation made to this scale was in terms of language so that it is easily understood by the participants. The items in the questionnaire ask the participant to respond with one of five choices, ranging from “strongly agree” (4) to “strongly disagree” (1). The questionnaire was modified and added an extra category for students who are not decided, making the choices to be 5. Pilot study also guided the researcher in refining the final instrument used in this study (See Appendix 1, section B). The items in the scale do not evaluate a subject as a person, but simply indicates one’s opinion about oneself. Rosenberg did not indicate discrete cut-off points to distinguish between high and low self-esteem. However, the researcher considered any mean score between 1.0 and 2.5 to be an indication of low self-esteem. Scores between 2.6 and 3.0 were regarded to be average. The scores which ranged between 3.1 and 3.9 were taken to be an indication of high levels of self-esteem, while those scores that ranged between 4.0 and 5.0 were considered to be an indication of a feeling of very high self-esteem. The scores of the items in this scale were used in testing hypothesis one which stated that “There is no significant difference in self-esteem levels between those students in the e-mentoring programme and those not in the programme”. The use of this scale was important because it helped the research to
get information regarding the variable of interest that is the self-esteem level of the participants.

Permission to use this questionnaire is generally given and researchers do not have to seek for permission to use it.

3.7.2 Self-efficacy Questionnaire

The researcher used a modified self-efficacy scale by Sherer et al. (1982) to assess general self-efficacy. The questionnaire is a series of statements about one’s personal attitudes and traits. The researcher modified items 7, 12, and 14 to suit the Kenyan situation and the total number of the items were 15. Each statement represents a commonly held belief which may be true for one person, and not true for another. Participants were required to indicate their personal feelings about each statement by marking the letters that best describe their attitudes or feelings. The items were scored on a five-point Likert scale ranging from completely disagree (1) to completely agree (5) (Appendix 1, section C). The mean scores between 1.0 and 2.5 were taken to be an indication of low self-efficacy. Scores between 2.6 and 3.0 were regarded to be average. The scores which ranged between 3.1 and 3.9 were taken to be an indication of high levels of self-efficacy, while those scores that ranged between 4.0 and 5.0 were considered to be an indication of a feeling of very high levels of self-efficacy. The negatively-keyed items were “reverse-scored” before computing individuals’ total scores and before conducting the psychometric analyses. Piloting of the instrument assisted in establishing its reliability in the Kenyan context.
Permission to use this scale was obtained from the author by the researcher (See Appendix 11).

Since the purpose for this questionnaire was to compare the self-efficacy levels of those students in the e-mentoring programme and those not in the programme, the researcher ran a student t-test to find out which group ranked higher in self-efficacy compared to the other.

3.7.3 **Focus Group Discussion Guide**

According to Creswell (2009), FGD is an option within interview guide which helps the researcher to describe and interpret the experiences of participants in order to understand the “essence” of the experiences as perceived by participants. The researcher employed a focus group discussion guide to obtain information from the e-mentee participants’. The guide consisted of eight open-ended or unstructured items which were used in a Focus Group Discussion (FGD) to enable probing. The items were based on e-mentoring relationship that existed between the e-mentees and their e-mentors. The FGD comprised of one group of eight participants as it was conducted only in one of the schools. The participants were four (4) form 4 students and four (4) form 3 members of e-mentoring programme. The members who were selected on the basis of being very vocal (those who showed interest in sharing about the programme and also those who appeared out-going and ready to answer questions easily). To members were picked from each class and then asked each to pick another member from their class whom they thought would make a good discussion group with. The
researcher met the group once and the meeting lasted for about one and a half hours. Data collected from the FGD was used to support and supplement the quantitative data on self-esteem, self-efficacy and academic achievement.

3.7.4 Document Analysis

The document analyzed were end of Term 2, 2012 results for all participating students from school records. The researcher used test scores of English, Kiswahili, and Mathematics since these are the compulsory subjects taken by all students in Kenya. Scores from each school were transformed to standard Z-score separately (school by school, and class by class) in order to render them comparable. Bogdan and Biklen (1998) observe that documents are becoming important primary source for qualitative research and therefore these documents were considered to have important information for this study.

3.8 Pilot Study

The instruments were pretested on 10 students from learning institution C. The researcher visited the home prior to the carrying out of the pilot study to familiarize her with the home. On the actual day of piloting the instruments, the researcher visited this home which was also a member of GGBC programme and introduced herself to the director of the home. Since the participants were students who could not make decisions on their own as there were underage, the director granted permission on their behalf to the researcher to carry out the pilot study with the students. The piloting was conducted with students who had been
members of GGBC programme for more than one year. Arlene (2010) noted that piloting is an important step in the process of research because it reveals what works and what does not work; such as vague questions and unclear instructions. In this study, the pilot helped to identify inconsistencies and deficiencies in the research instruments in terms of language used and the information collected prior to the actual study. Piloting also helped to correct unclear and ambiguous items. In other words, piloting helped to determine whether the items in the questionnaires were functioning as anticipated or not, for use in the main study.

The data collected during the pilot study were prepared, analyzed and interpreted. From the results, the instruments were reviewed accordingly.

3.9 Reliability and Validity of Instruments

3.9.1 Validity of the Research Instruments

Validity of the instruments refers to whether a measure is truthful or genuine; in other words, a measure that is valid assesses what it claims or purports to measure (Arlene, 2010). In this study, the researcher and a team of experts in the area from the Department of Educational Psychology evaluated the items in the Self-esteem and Self-efficacy questionnaires against the study objectives to establish their accuracy. The pilot study was also used to determine the appropriateness of the items in the research instruments.

3.9.2 Reliability of the Research Instruments

According to Neuman (2007), reliability deals with how consistently similar measures consistently produce similar results. Again, Sherri (2009)
describes reliability as the level of consistency or stability of an instrument over time. In the present study, reliability analysis measured self-esteem and self-efficacy. Self-esteem was measured using a 14-item scale adapted from Rosenberg (1965). Results of reliability of the two questionnaires are shown in Table 3.2

<table>
<thead>
<tr>
<th>Scale</th>
<th>No. of items</th>
<th>Reliability coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-esteem</td>
<td>14</td>
<td>0.854</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>15</td>
<td>0.862</td>
</tr>
</tbody>
</table>

Table 3.2 shows the Cronbach’s alpha reliability coefficient for self-esteem scale and self-efficacy scale. The reliability for self-esteem scale was 0.854. The original scale Cronbach’s alpha ranged from .77 to .88. The Cronbach reliability for self-efficacy was 0.862. These values indicated that the scales had high internal stability. Hair, Anderson, Tatham and Black (2010), emphasized that a Cronbach’s alpha reliability estimate of 0.70 or higher indicates that the measurement scale used is reliable.

3.10. Data Collection Techniques

After the defense of the proposal at the Department of Educational Psychology, the researcher filled forms provided by the Graduate School of Kenyatta University which enabled her to proceed to the National Commission to seek for permit to carry out research. The forms together with a copy of the proposal were then presented to the National Commission for Science and
Technology. After two weeks of presenting the forms, the researcher went back to collect the permit. The permit indicated the time frame of the research period.

This permit was thereafter presented to the Ministry of Education, Westlands and Kasarani Sub-Counties Education Offices respectively in order to obtain letters introducing the researcher to the intended schools. The researcher made the first visit to the schools to present the permit and introduce herself to the schools. During this first visit, the researcher also made appointment for the day she would go back to the schools to meet the participants and carry out the research. The participants were then informed in advance to enable prepare by creating appropriate time for the researcher to gain access to them.

The research visited each school at a time. In the first school, the mentor coordinator did not allow the researcher to collect data from the students directly. The coordinator and the administration of this school informed the researcher that the coordinator was the one to administer the questionnaires to the students. The coordinator asked the researcher to leave the questionnaires and come back to pick them after two weeks. After the expiry of the two weeks, the researcher went back to the first school and collected the filled forms.

In the second school, the researcher collected data personally on a Saturday. On this day, the researcher was assisted to collect data by the mentor coordinator. The participants were then assembled in the dining hall where the researcher and mentor coordinators distributed the questionnaires which had a consent form attached. The researcher gave instructions to the participants who then signed the consent form and started filling in the self-esteem questionnaires.
Once they were all through, the questionnaires were collected and then the second questionnaire on self-efficacy was then given out. When the participants completed filling in their answers, the questionnaire were collected and the researcher thanked all the participants for participating willingly in the exercise. The whole exercise took about an hour. As the exercise was quite a long one, the participants were given a break and then the members of GGBC came back again for FGD as the non GGBC were released. The FGD guide is in Appendix 111.

The Focus Group Discussion members were therefore selected. The selection criteria for membership into focus group discussion were dictated by the way the students had shown their interest during their interaction with the research. Those students who tended to talk much were picked to participate. A total of eight participants were then selected. After the selection process of the members was over, FGD changed venue and moved into the school Laboratory. At the school laboratory, the researcher picked one of the students who accepted to be the group’s secretary. The researcher got permission from the participants to be taped as they discussed various issues. The researcher coordinated the whole exercise whereby she would ask a question at a time and allow the participants to share their feelings. After the researcher was satisfied that no more sharing was forthcoming, she would ask the next question until all the questions were over. The researcher thanked the group once more for their participation in sharing their views regarding various experiences in the e-mentoring mentoring programme.
3.11 Data Analysis

The data collected were coded and entered into the computer for analysis using the Statistical Package for the Social Sciences (SPSS) version 18 computer Programme. Both descriptive and inferential statistics were used to analyze data. Descriptive statistics such as means and standard deviations were used to describe the sample characteristics. On the other hand, inferential statistics, specifically Student t-test for independent samples and One Way ANOVA were used to test hypotheses. All the hypotheses were tested at $\alpha = .05$.

The following null hypotheses were tested in the study:

**$H_{01}$**: There is no significant difference in the levels of self-esteem among those students in and those not in the e-mentoring programme.

*Test statistic used was t-test for independent samples.*

**$H_{02}$**: There is no significant difference in the levels of self-efficacy among those students in and those not in the e-mentoring programme.

*Test statistic used was t-test for independent samples*

**$H_{03}$**: There is no significant difference in levels of self-esteem among students at different years of the e-mentoring.

*Test statistic used was ANOVA*

**$H_{04}$**: There is no significant difference in the levels of self-efficacy among students at different years of the e-mentoring. Test static used was ANOVA.

**$H_{05}$**: There is no significant difference in academic achievement scores
between those students in and those not in the e-mentoring programme. Test statistic used was **t-test for independent samples.**

Results from the analysis were presented using tables.

### 3.12 Logistical and Ethical Considerations

The researcher observed ethics that relate to this study. First, the researcher obtained a letter from Kenyatta University Ethics and Research Center which enabled her to seek for official permit to carry out research in the designated schools from the Council of Science and Technology and Innovation. The permit from the National Commission (NACOSTI) for Science and Technology Innovation and the letter from the District Education Offices were taken to the respective Principals of the two schools.

While in the schools, the researcher introduced herself to the participants and briefly explained about the intention of the research. The researcher then obtained consent of voluntary participation from the students by issuing all participants with a copy of a letter which had been drafted and required the participants to read and either accept to participate by remaining in the room or decline by leaving the room without feeling obliged. Participants were then assured about the confidentiality of the information collected during the research.
CHAPTER FOUR
DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents findings, interpretations and discussions of the study according to the objectives and hypotheses of the study. The objectives of the study were to:

i. Establish the levels of self-esteem of students in the e-mentoring programme with those of students not participating in the programme.

ii. Contrast the levels of self-efficacy of students in e-mentoring programme with those of students not participating in the programme.

iii. Compare the levels of self-esteem of students at different years in the mentoring programme.

iv. Establish the levels of self-efficacy of students at different years in the mentoring programme.

v. Compare the academic achievement of students in the e-mentoring programme with those of students not in the programme.

The test (Null) hypotheses in this study were as follows:

\( H_{01} \) There is no significant difference in the levels of self-esteem among those students in and those not in the e-mentoring programme.
There is no significant difference in the levels of self-efficacy among those students in and those not in the e-mentoring programme.

There is no significant difference in the levels of self-esteem among students at different years of e-mentoring.

There is no significant difference in the levels of self-efficacy among students at different years of the e-mentoring.

There is no significant difference in academic scores between those students in and those not in the e-mentoring programme.

The study targeted 100 participants drawn from two sampled schools. Four questionnaires were not fully completed. The researcher therefore ended up with 92 usable questionnaires. This was a relatively high return rate.

The chapter is divided into various sections. The first section presents the demographic information followed by descriptive and inferential results of participants’ levels of self-esteem, self-efficacy, and length of time in e-mentoring on self-esteem and self-efficacy, and participants’ academic achievement mean scores. The final is the summary of the whole chapter.

4.2 The Demographic Information

This section presents the demographic information of the participants in four parts; part one presents age of participants by parental status, part two presents parental status by study group, part three is membership of participants
by school and class, and finally part four presents the duration of participants in the programme. The demographic information is presented in Tables 4.1 to Table

4.2.1 Distribution of Participants’ Age by Parental Status.

The researcher sought to find out the age of participants by parental status. Table 4.1 presents the cross tabulation of participants’ age by parental status.

Table 4.1: Participants age by parental status

<table>
<thead>
<tr>
<th>Parental status</th>
<th>Orphan</th>
<th>%</th>
<th>Both Parents</th>
<th>%</th>
<th>One Parent</th>
<th>%</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 15-17 years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-17 years</td>
<td>10</td>
<td>16.1</td>
<td>28</td>
<td>45.2</td>
<td>24</td>
<td>38.7</td>
<td>62</td>
<td>100</td>
</tr>
<tr>
<td>18-20 years</td>
<td>5</td>
<td>18.5</td>
<td>13</td>
<td>48.1</td>
<td>9</td>
<td>33.3</td>
<td>27</td>
<td>100</td>
</tr>
<tr>
<td>21-25 years</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>33.3</td>
<td>2</td>
<td>66.7</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>16.3</td>
<td>42</td>
<td>45.7</td>
<td>35</td>
<td>38.0</td>
<td>92</td>
<td>100</td>
</tr>
</tbody>
</table>

The information in Table 4.1 shows that among participants aged between fifteen and seventeen years, 16.1% of them were orphaned. The information in the table also indicates that 42 of participants had both parents while 38.7% had only one parent. In the category of eighteen and twenty years, 18.5% were orphans.
while 33.3 had one parent and 48.1 % had both parents. Thirty three percent of participants had both parents and 66.7 % had one parent. Orphans in this research meant that the participants under this category were total orphans. Regarding the participants with one parent, the researcher did not collect information to indicate whether one parent had died or they were from single parents. These findings indicate that majority of the students who took part in this study had their two parents while the participants who had only one parent were second in majority. Only a small number of participants (15) had lost both parents.

4.2.2. Distribution of Participants’ Parental Status by Study Group

Table 4.2 presents distribution of participants’ parental status by study group.

<table>
<thead>
<tr>
<th></th>
<th>Study group</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental status</td>
<td></td>
<td>GGBC</td>
<td>NGGBC</td>
<td>Total</td>
</tr>
<tr>
<td>Orphan</td>
<td></td>
<td>7</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>one parent</td>
<td></td>
<td>21</td>
<td>14</td>
<td>35</td>
</tr>
<tr>
<td>both parents</td>
<td></td>
<td>19</td>
<td>23</td>
<td>42</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>47</td>
<td>45</td>
<td>92</td>
</tr>
</tbody>
</table>

The Table 4.2 on parental status of the participants show that 60% of participants with a single parent were GGBC members and 40% were non-GGBC
members. Out of the 15 participants who were orphaned, 53.3 were non-GGBC members while 46.7% were members of GGB. Forty two percent of the total participants had both parents. Of these, 19 were GGB members and 23 were non-GGBC members. Although one of the criteria for admission in GGB is that one has to be an orphan, it should be noted that the current learning institutions who are members of GGB have other admission criteria in their schools. School A for example admits bright and needy students from all over the country. Among these students are orphans, students from single parents who financially deprived (unable to pay school fees) and also students who have both parents but are also financially deprived.

School B also admits students from the slums who are first of all orphaned. Students from single parents and those with both parents are also admitted so long as their parents are financially unable to pay for their education either totally or partially. Both schools also admit students from financially able parents, but admission into GGB is strictly from the above described categories. Generally, although the percentage of students with both parents is higher than that of orphaned students, these students are as disadvantaged as those with a single parent or total orphans and therefore the reason for inclusion in GGB.

4.2.3 Distribution of Participants by School, Class and Membership to GGB

Table 4.3 presents a cross tabulation of the participants by school and class against membership and non-membership to GGB.
Table 4.3: Distribution of participants by school, class and their membership to GGBC

<table>
<thead>
<tr>
<th>School</th>
<th>Form</th>
<th>Study Group</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>School A</td>
<td></td>
<td>GGBC</td>
<td>NGGBC</td>
<td></td>
</tr>
<tr>
<td>Three</td>
<td>14</td>
<td>16</td>
<td>30</td>
<td>32.6</td>
</tr>
<tr>
<td>Four</td>
<td>13</td>
<td>14</td>
<td>27</td>
<td>29.3</td>
</tr>
<tr>
<td>Total</td>
<td>27</td>
<td>30</td>
<td>57</td>
<td></td>
</tr>
<tr>
<td>School B</td>
<td></td>
<td>GGBC</td>
<td>NGGBC</td>
<td></td>
</tr>
<tr>
<td>Three</td>
<td>5</td>
<td>1</td>
<td>6</td>
<td>6.5</td>
</tr>
<tr>
<td>Four</td>
<td>15</td>
<td>14</td>
<td>29</td>
<td>31.5</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>15</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>Overall Total</td>
<td>47</td>
<td>45</td>
<td>92</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Key:
- GGBC - Global Give Back Circle members
- NGGBC - Non Global Give Back Circle members

The researcher sought to establish the length of time participants had been in the programme. Table 4.3 shows that from school A, 30 students were drawn from form three while 27 were drawn from form four. Out of the 30, form three students, 14 (46.7%) were members of GGBC while 16 (53.3%) were not members. Similarly, out of the 27 form four students, 13 (48.1%) were members of GGBC while 14 (51.9%) were nonmembers.

From school B, 6 students were drawn from form three while 20 students were drawn from form four. Of the 6 form three students, 5 belonged to GGBC while one student did not. Out of the 29 form 4 students, 15 were members of GGBC while 14 were not members of GGBC. The information from the Table shows that in school A form three had the highest number of participants while in school B form four class had the highest number of participants in the study.
4.2.4 Duration of Participants by Class in the Programme

The researcher was interested in finding out the duration of participants in the programme in relation to their distributed in different classes. Table 4.4 presents the length of time participants in the study from different forms had participated in the e-mentoring programme.

**Table 4.4 Duration of Participants in the Programme by Class**

<table>
<thead>
<tr>
<th>No of Years</th>
<th>GGBC Members</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Form 3 %</td>
<td>Form 4 %</td>
</tr>
<tr>
<td>1</td>
<td>4 21.05</td>
<td>3 10.71</td>
</tr>
<tr>
<td>2-3</td>
<td>15 78.95</td>
<td>20 71.43</td>
</tr>
<tr>
<td>Above 3</td>
<td>5 17.86</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19 100</strong></td>
<td><strong>28 100</strong></td>
</tr>
</tbody>
</table>

Table 4.4 show the length of time GGBC members had been in the programme and also classes (forms) to which the members came from. The data in Table 4.4 reveals that 78.95 % of students in form 3 had been in the programme for a period of between 2 and 3 years and only 21.05 % had been in the programme for one year. Students in form four who had been in the programme for a period of 2 to 3 years were 71% and the percentage of those who had been in the programme for more than three years were 17.86%. The results show that some Form 3 students had been in the programme for 3 years while some form
four students had been in the programme for less than 2 years. One of the probable reasons for this was that whenever students were given out for mentorship, it was not guaranteed that they will be picked immediately by e-mentees. Some students who were lucky or who probably had captivating personal history would get e-mentors much quicker than others. Individual luck and history could also have played part in being assigned mentors.

4.3. Participants’ levels of self-esteem

The first objective of the study was to compare the levels of self-esteem of students in the e-mentoring programme with that of students not participating in the programme. Participants were asked to indicate the levels of their self-esteem on a Likert scale. A statistical analysis was carried out and the descriptive statistics were determined. The means and standard deviations of the responses were then computed for each item used. Results are presented in Table 4.5.
Table 4.5: Descriptive Statistics on Participants’ Levels of Self-esteem

<table>
<thead>
<tr>
<th>Statement</th>
<th>GGBC Mean</th>
<th>GGBC Std.</th>
<th>NGGBC Mean</th>
<th>NGGBC Std.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel that I am a person of worth at least on an equal level with others</td>
<td>4.43</td>
<td>0.683</td>
<td>2.38</td>
<td>1.114</td>
</tr>
<tr>
<td>I feel I have a number of good qualities</td>
<td>4.40</td>
<td>0.648</td>
<td>1.82</td>
<td>1.114</td>
</tr>
<tr>
<td>Most of the times I tend to feel that I am a failure</td>
<td>1.83</td>
<td>1.133</td>
<td>2.11</td>
<td>1.071</td>
</tr>
<tr>
<td>I am able to do things as well as most other students</td>
<td>4.41</td>
<td>0.652</td>
<td>2.07</td>
<td>0.963</td>
</tr>
<tr>
<td>I feel I do not have much to be proud of in my life</td>
<td>2.05</td>
<td>1.268</td>
<td>2.32</td>
<td>1.072</td>
</tr>
<tr>
<td>I take a positive attitude towards myself</td>
<td>4.51</td>
<td>0.748</td>
<td>2.05</td>
<td>0.963</td>
</tr>
<tr>
<td>Generally I am satisfied with my self</td>
<td>3.60</td>
<td>1.109</td>
<td>2.32</td>
<td>0.740</td>
</tr>
<tr>
<td>I wish I could have more respect for my self</td>
<td>1.85</td>
<td>1.379</td>
<td>2.20</td>
<td>1.026</td>
</tr>
<tr>
<td>I certainly feel useless at times</td>
<td>1.85</td>
<td>1.229</td>
<td>2.24</td>
<td>0.936</td>
</tr>
<tr>
<td>At times I think I am no good</td>
<td>1.94</td>
<td>1.059</td>
<td>2.26</td>
<td>0.712</td>
</tr>
<tr>
<td>I always achieve my goals</td>
<td>3.30</td>
<td>1.133</td>
<td>2.00</td>
<td>1.297</td>
</tr>
<tr>
<td>I have dreams and goals in my life that need to accomplish</td>
<td>4.64</td>
<td>0.529</td>
<td>2.78</td>
<td>1.460</td>
</tr>
<tr>
<td>I feel I have come to appreciate who I am</td>
<td>4.66</td>
<td>0.562</td>
<td>2.38</td>
<td>0.834</td>
</tr>
<tr>
<td>My interaction with other people in life has helped me to grow</td>
<td>4.62</td>
<td>0.491</td>
<td>2.51</td>
<td>1.290</td>
</tr>
<tr>
<td>Overall</td>
<td>3.4</td>
<td>0.902</td>
<td>2.2</td>
<td>1.042</td>
</tr>
</tbody>
</table>

Key:

GGBC          Global Give Back Circle
NGGBC         Non Global Give Back Circle

The researcher sought to compare the GGBC participants’ levels of self-esteem with those of non GGBC participants. The descriptive statistics in Table 4.5 show that the highest mean score for the GGBC group on individual items...
was on the item which stated “I feel I have come to appreciate who I am”. In this item, participants in the e-mentoring programme had a mean \((m = 4.66, sd = 0.562)\), while the participants not participating in the programme had \((m = 2.38, sd = 0.834)\). The smallest mean among the GGBG members was registered on the item that stated “I most of the times I tend to feel that I am a failure”. In this item participants in the e-mentoring programme scored \((m = 1.83, sd = 1.14)\), while those students not participating in the programme had \((m = 2.11, sd = 1.071)\). On no single item did the non GGBG group score a higher mean than the GGBG group.

Participants in the e-mentoring programme had an overall mean score of \((m = 3.40, sd = 0.802)\), while that of non GGBG participants had \((m = 2.20, sd = 1.052)\). To ascertain whether or not there were statistically significant differences in the self-esteem levels among students in the e-mentoring programme and those not in the programme, the researcher had also formulated an hypothesis that stated, “There is no significant difference in self-esteem levels between students participating in the e-mentoring programme and those not in the programme”. To test this hypothesis, the t-test for independent samples was used at the 0.05 level of significance. The results are presented in Table 4.6a and Table 4.6b.
Table 4.6a Group Statistics

<table>
<thead>
<tr>
<th>Study group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esteem</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GGBBC</td>
<td>47</td>
<td>55.4706</td>
<td>6.92355</td>
<td>1.0099</td>
</tr>
<tr>
<td>NGGBC</td>
<td>45</td>
<td>32.0672</td>
<td>9.97423</td>
<td>1.48687</td>
</tr>
</tbody>
</table>

Table 4.6b Results of the t-test on e-mentoring and students’ overall self-esteem

<table>
<thead>
<tr>
<th>F</th>
<th>Sig.</th>
<th>t</th>
<th>df</th>
<th>Sig. (2tailed)</th>
<th>Mean</th>
<th>Std. Error Diff</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.511</td>
<td>.036</td>
<td>13.121</td>
<td>90</td>
<td>.000</td>
<td>23.40338</td>
<td>1.78365</td>
</tr>
<tr>
<td>13.021</td>
<td>78.069</td>
<td>.000</td>
<td>23.40338</td>
<td>1.79741</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

An independent-samples t-test was calculated to compare the mean score of self-esteem levels of students in the e-mentoring programme with that of students not participating in the programme. The results in Table 4.6b indicate that there was a significant difference in the scores of self-esteem levels of students participating in the e-mentoring programme ($m=4.40, sd=0.902$) and those not participating in the programme ($m=2.30, sd=1.042$); ($t(90)=13.021, p<0.01$). The null hypothesis was therefore rejected. These results suggest that e-mentoring really does have an influence on students’ level of self-esteem. Specifically, the results suggest that when students are mentored, in this case e-mentoring, their self-esteem increases. The hypothesis that stated: “There is no
significant difference in the levels of self-esteem among those students in and those not in the e-mentoring programme” was rejected.

Qualitative data on self-esteem was also obtained from 8 participants using focus group discussions. The focus group discussion comprised of 8 questions. On the question that asked “How do you think the relationship with your e-mentor has impacted on you?” The participants reported that, e-mentoring enabled them to become stronger, goal oriented, deeper understanding of themselves and enhanced personal acceptance. The participants particularly felt that e-mentoring strengthened their academic abilities in subjects like mathematics as they interacted with their mentors. Others reported that through e-mentoring, they were able to get focused in their academic work because they accepted themselves fully. Other findings were that, the participants felt that, through e-mentoring, they could open up to others more than before and that they were no longer closed up. Some excerpts from participants’ verbatim in the focus group discussions were:

_E-mentoring has helped me to become stronger and goal oriented. It has improved my learning and love for mathematics and it has increased my self-esteem. As a new student in this school, I felt inferior, then I could not share things with others, but my mentor helped me and I was able to open up to others. My mentor has brought a positive impact in my life. I used to be an image of myself but my mentor has enabled me to accept myself as a real person. She has taught me that we live to share and never_
to do things to win because if I do to win, I will never be happy.

These observations are consistent with those of most researchers; for example, Rhodes, Crossman, and Resch (2000) study which reported in their study on pathways through which mentoring relationships on youth develop reported that, one of the benefits of mentoring is the increase in self-esteem. Keith, Vidourek, Davis, and Warren (2002), in their study in America on effectiveness of mentoring programmes for youth reported significant improvements at post-test in mentored students’ self-esteem levels and positive connections to school, peers and family. DuBois and Silverthorn (2005) found out that, adolescents who reported having a mentor in their lives were more likely to have higher self-esteem and be more satisfied with their lives. Similarly, Shpigelman, Shumit and Weiss (2008) also found that, e-mentees who had been mentored appeared to increase in self-image and self-esteem. Laura’s study (2007) reported that participants in their study portrayed ability to increase in self-esteem. Numerous studies have also found positive significant differences between mentored and non-mentored adolescents (Derrick 2009; Mok 2010; Koch 2010; Leboeuf 2011) were also found by which implied that mentoring helped individuals to have enhanced self-esteem. However, other researchers found no positive significant differences between mentored and non-mentored participants (Culpepper 2008; Phillips, Hagan, Bodfield, Woodthorpe, Grimsley 2008; Heel, Hae, So Young, Kyeung&Sook 2012; Schwartz, Lowe, & Rhodes 2012).
4.4 Participants’ Levels of Self-efficacy

The second objective of this study was to contrast the self-efficacy levels of students in e-mentoring programme with those of students not participating in the programme. In this objective, the researcher was interested in finding out if there was a significant difference in self-efficacy levels between those students in the e-mentoring programme and those not in the programme. The participants’ self-efficacy was measured using a questionnaire adapted from Sherer et al. (1982). Means and standard deviations were used to indicate the level of participant’s agreement or disagreement with the statements given. The findings are indicated in Table 4.7.
Table 4.7: Descriptive statistics on Participants’ Levels of Self-efficacy

<table>
<thead>
<tr>
<th>Statement</th>
<th>Study group</th>
<th></th>
<th>Study group</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>GGBC</td>
<td>Std. Deviation</td>
<td>NGGB</td>
</tr>
<tr>
<td>If something looks too complicated, I am usually keen to try it</td>
<td>4.15</td>
<td>1.083</td>
<td>2.29</td>
<td>1.359</td>
</tr>
<tr>
<td>I try to learn new things when they look too difficult</td>
<td>4.36</td>
<td>0.764</td>
<td>2.24</td>
<td>1.282</td>
</tr>
<tr>
<td>When trying something new I don’t give up even if I am not initially successful</td>
<td>3.89</td>
<td>1.184</td>
<td>2.49</td>
<td>1.408</td>
</tr>
<tr>
<td>When I make plans I persist until I can make them work</td>
<td>4.19</td>
<td>0.851</td>
<td>1.95</td>
<td>1.324</td>
</tr>
<tr>
<td>If I can't do a job first time, I keep trying until I can</td>
<td>4.09</td>
<td>0.952</td>
<td>2.33</td>
<td>1.365</td>
</tr>
<tr>
<td>When I have something unpleasant to do I stick to it until I finish</td>
<td>2.83</td>
<td>1.356</td>
<td>1.64</td>
<td>1.090</td>
</tr>
<tr>
<td>When I decide to do something I go right to work on it</td>
<td>4.15</td>
<td>1.010</td>
<td>2.31</td>
<td>1.221</td>
</tr>
<tr>
<td>Failure just makes me try harder until I succeed</td>
<td>4.64</td>
<td>0.705</td>
<td>2.53</td>
<td>1.179</td>
</tr>
<tr>
<td>When I set important goals for myself I usually achieve them</td>
<td>3.62</td>
<td>1.208</td>
<td>3.04</td>
<td>1.021</td>
</tr>
<tr>
<td>I seem to be capable in dealing with most problems that come my way</td>
<td>4.11</td>
<td>1.047</td>
<td>2.51</td>
<td>1.218</td>
</tr>
<tr>
<td>I feel sure about my ability to do things</td>
<td>3.79</td>
<td>1.122</td>
<td>2.33</td>
<td>1.314</td>
</tr>
<tr>
<td>I don’t give up on things before completing them</td>
<td>4.13</td>
<td>0.969</td>
<td>1.93</td>
<td>1.452</td>
</tr>
<tr>
<td>One of my strengths is that I do not get distracted easily in my work</td>
<td>3.17</td>
<td>1.464</td>
<td>2.62</td>
<td>1.072</td>
</tr>
<tr>
<td>I am self-motivated</td>
<td>4.28</td>
<td>1.026</td>
<td>2.16</td>
<td>1.609</td>
</tr>
<tr>
<td>I don’t give up easily</td>
<td>4.30</td>
<td>0.931</td>
<td>2.53</td>
<td>1.325</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td><strong>3.98</strong></td>
<td><strong>1.045</strong></td>
<td><strong>2.33</strong></td>
<td><strong>1.283</strong></td>
</tr>
</tbody>
</table>
The descriptive statistics presented in Table 4.7 indicate that, the overall mean of those students in the e-mentoring programme \((m=3.98, \text{sd} = 1.045)\) was higher than the mean of those students not participating in the e-mentoring programme \((m = 2.53, \text{sd} = 1.283)\). Moreover, participants not in the programme had higher spread in their responses \((s=1.283)\) than those in the programme \((s=1.045)\). These results imply that participants who belonged to the e-mentoring programme tended to agree with the given items reflecting relatively higher self-efficacy than their counterparts not in GGBC. On the item “Failure just makes me try harder until I succeed” students in the e-mentoring programme had \((m = 4.64, \text{sd} = 0.705)\) while the mean of those students not participating in the programme was \((m =2.54, \text{sd} = 1.179)\).

To test whether or not there was statistically significant difference in self-efficacy levels between those students in the e-mentoring programme and those not in the programme, an independent t-test was conducted. The results are presented in Table 4.8.
Table 4.8: The t-test results of e-mentoring and participants’ self-efficacy

<table>
<thead>
<tr>
<th>Efficacy</th>
<th>Levene’s Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>Mean Difference</td>
</tr>
<tr>
<td>Efficacy</td>
<td>Equal variances assumed</td>
<td>20.902</td>
</tr>
<tr>
<td></td>
<td>Equal variances not assumed</td>
<td>8.818</td>
</tr>
</tbody>
</table>

The t-test results in Table 4.8 show that the Levene statistic was significant at the 0.05. The t-test results were (t (90) =8.818, p<0.01). This implies that the difference between the two means was highly significant. Therefore, the null hypothesis which stated that “There is no significant difference in self-efficacy levels between those students in the e-mentoring programme and those not in the programme” was rejected in favour of the alternative hypothesis.

These findings are similar to Lisa and Obasi (2008) study which reported that, mentors were found to be helpful in aspects related to self-efficacy. Flood (2012), study on mentoring and self-efficacy in female undergraduate business students also found that mentored students did report higher self-efficacy scores than those students without mentors. Chopin, Danish, Seers, and Hook’s (2012), study on effects of mentoring on development of self-efficacy and political skill
reported that, among mentees, higher quality mentoring relationships were associated with significantly higher leadership self-efficacy but not with significantly higher political skill. Other studies that reported positive significant relationship among mentored students in comparison to no-mentored ones (Lyne, 2013; Klassen 2010; Rhodes & Fletcher 2013, Maina2013). The implication of this finding is that the mentoring relationships experienced by GGBC members in these particular schools have been able to boost ones belief in their ability to focus on their various developmental aspects for example self-esteem and self-efficacy. Moreover, the GGBC programme structure has facilitated interactive and self-evaluative skills between the e-mentees and the e-mentors hence the need for the programme and other mentoring programmes to be instituted in more Kenyan secondary schools.

4.5 Length of Time in the E-mentoring on Participants’ Self-esteem

The third objective sought to compare the self-esteem levels of students at different years in the mentoring programme. For this objective, the researcher had formulated a null hypothesis which stated that “There is no significant difference in self-esteem levels among students at different levels of e-mentoring”. To test whether or not there was significant difference in self-esteem levels among those students at different years of e-mentoring, a one-way ANOVA test was conducted. The results are presented in Table 4.9.
Table 4.9: ANOVA test on Length of time in E-mentoring and Self-esteem

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>3644.783</td>
<td>3</td>
<td>1214.928</td>
<td>18.384</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>3436.404</td>
<td>52</td>
<td>66.085</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>7081.186</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown from Table 4.9, the researcher computed a one-way ANOVA comparing the length of time (in terms of years) in the e-mentoring and self-esteem. A significant difference was found among the participants ($F_{(3, 52)} = 18.384, p > .05$). Since the F-ratio was significant, the null hypothesis that stated: “There is no significant difference in self-esteem levels among those students at different levels of e-mentoring” was rejected.

To determine the nature of differences in self-esteem levels among students at different years, Bonferroni posthoc test was used. Results are presented on Table 4.10.
Table 4.10  Post hoc Results of Comparison of Length of Time in E-mentoring

<table>
<thead>
<tr>
<th></th>
<th>Multiple Comparisons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(I)</td>
</tr>
<tr>
<td></td>
<td>length of e-</td>
</tr>
<tr>
<td></td>
<td>mentoring relationship</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>(I)</td>
</tr>
<tr>
<td>Bonferroni</td>
<td>1 year</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 years</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 years</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>more than 3 years</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.10 shows that Bonferroni post hoc test was used to determine the nature of difference as was shown in the one-way ANOVA test. The analysis revealed that students who had been in the programme for 1 year compared to those of 2 years scored ($m = -20.05455$, $sd = 2.98741$). Those who had been in the programme for 1 year compared to those of 3 years ($m = -22.17677$, $sd = 2.8801$). The scores of those who had been in the programme for 2 years compared to those who had been in programme for 1 year was ($m= 20.05455$, $sd = 2.98741$), 3 years compared to 2 years scored ($m= 22.17677$, $sd = 2.88016$). There was no significant difference for those who had been in the programme for more than 3 years. This implies that whereas e-mentoring had an impact on participants’ self-
esteem; retaining participants for more than three years may have no further influence.

These findings are in support of the study by Chunping, Daiwei, Liu, Yang, Jinfeng and Shasha (2012) who reported a significant difference among students in different years of school. However, the findings are contrary to the study by Kadivar, Nejad and Emamzade (2007) and Strange, Neuenschwander and Dauer (2010) who found that there was not a significant difference in the level of self-esteem different and varying years. The differences in the results of the current study from those contained in the reported studies could be attributed to a number of things; for example majority of the participants in the current study have had quite a lengthy period of mentoring relationship with their e-mentors. Moreover, with the financial incentives attached to the relationship after completion of secondary school education could be playing a key role in motivating the e-mentees.

4.6 Length of Time in the E-mentoring and Participants' Self-efficacy

The fourth objective sought to establish the self-efficacy levels of students at different years in the mentoring programme. For this objective, the researcher had formulated a null hypothesis which stated that “There is no significant difference in self-efficacy levels among students at different years of e-mentoring. To test whether or not there were significant differences in self-efficacy levels between those students at different years of e-mentoring, a one-way ANOVA test was conducted. The results are presented in Table 4.11.
To determine the nature of difference in self-efficacy levels among participants in different years of e-mentoring, a one-way ANOVA was computed. Results in Table 4.11 indicate that the mean differences in self-efficacy level among students at different levels of e-mentoring were significant at the 0.05 significant level ($F_{3, 52} (0.05) = 15.220$, $p<0.01$). To determine the nature of the differences among different years, Bonferroni post hoc test was used. The results of this analysis are presented in Table 4.12.

Table 4.11: ANOVA test on Length of Time in E-mentoring and Self-efficacy

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>4878.897</td>
<td>3</td>
<td>1626.299</td>
<td>15.220</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>5556.487</td>
<td>52</td>
<td>106.856</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10435.384</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 4.12 Post hoc Results on Length of Time in E-mentoring and Self-efficacy

<table>
<thead>
<tr>
<th></th>
<th>(I) length of e-mentoring relationship</th>
<th>(J) length of e-mentoring relationship</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 year</td>
<td>2 years</td>
<td>-21.42500*</td>
<td>4.09033</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 years</td>
<td>-27.00588*</td>
<td>4.04379</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>more than 3 years</td>
<td>-26.10000*</td>
<td>4.53781</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>2 years</td>
<td>1 year</td>
<td>-21.42500*</td>
<td>4.09033</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 years</td>
<td>-5.58088</td>
<td>3.53431</td>
<td>.725</td>
<td></td>
</tr>
<tr>
<td></td>
<td>more than 3 years</td>
<td>-4.67500</td>
<td>4.09033</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>3 years</td>
<td>1 year</td>
<td>27.00588*</td>
<td>4.04379</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 years</td>
<td>5.58088</td>
<td>3.53431</td>
<td>.725</td>
<td></td>
</tr>
<tr>
<td></td>
<td>more than 3 years</td>
<td>.90588</td>
<td>4.04379</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>more than 3 years</td>
<td>1 year</td>
<td>26.10000*</td>
<td>4.53781</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 years</td>
<td>4.67500</td>
<td>4.09033</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 years</td>
<td>-.90588</td>
<td>4.04379</td>
<td>1.000</td>
<td></td>
</tr>
</tbody>
</table>

The Results in Table 4.12 show a significant difference in self-efficacy levels for those students who were in the programme for 1 year compared to those who had been in the programme for 2 years \((m = -21.42500, sd = 4.09033)\). The difference is also found between those students who had been in the programme for 1 and those who had been for 3 years \((m= -27.00588, sd = 4.04379)\). Students who had been in the programme for 1 year were compared to those who had been in the programme for more than 3 years and their scores were \((m= -26.10000, sd = 4.5378)\). Significant differences were also found between those who had been in the programme for 2 years when compared to those who had been in the programme for 1 year \((m= 21.42500, sd = 4.09033)\). Students who had been in the
programme for 3 years compared to those who had stayed for 1 year scored \( (m=27.00588, sd = 4.04379) \). Finally, students who had been in the programme for more than 3 years compared with those of 1 year scored \( (m= 26.10000, sd =4.53781) \). The implication of the results in the table however, is that retaining students for more than 3 years may have no further influence.

The null hypothesis which stated that “There is no significant difference in self-efficacy levels among students at different years of e-mentoring” was rejected. These findings are in consistent with the findings by Crossman and Rhodes (2002) who reported that mentoring relationship that take hold and grow progressively over time are more likely to impact positively with time.

4.7 Influence of E-mentoring on Academic Achievement

The fifth objective sought to compare the academic achievement of students in the e-mentoring programme with that of students not in the programme. Second term scores in English, Kiswahili, and Mathematics for each student participating in the programme was obtained from their schools. Since all the scores were in percentages, there was a need to transform them so that they could be rendered comparable. Therefore, these scores (of participants) were transformed to standardized Z score; school by school and subject by subject; after which they were then compared. The descriptive statistics for academic performance are presented in Table 4.13.
Table 4.13: Descriptive Statistics of Participants’ Academic Achievement

<table>
<thead>
<tr>
<th>Study Group</th>
<th>Mean Z-score: Eng Exam Score</th>
<th>Mean Z-score: Kisw Exam Score</th>
<th>Mean Z-score: Math Exam Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>G BBC</td>
<td>.3164</td>
<td>.2129</td>
<td>.1271</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>1.03401</td>
<td>1.13835</td>
<td>.99832</td>
</tr>
<tr>
<td>N G BBC</td>
<td>-.3380</td>
<td>-.2274</td>
<td>-.1358</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>.85026</td>
<td>.77739</td>
<td>.99515</td>
</tr>
</tbody>
</table>

Key:
- Eng: English
- Kisw: Kiswahili
- Math: Mathematics

The descriptive statistics in Table 4.13 show that participants in the e-mentoring programme (G BBC) had positive Z score of .3164 in English with a std of 1.03401, while the non-G BBC participants had a negative Z score - .3380 with std of .85026. Kiswahili scores were second highest whereby the G BBC participants had a positive Z score of .2129 with a std of 1.13835. The non G BBC participants on the other hand had a negative Z score of -.2274 and a std of .77739. In Mathematics, the G BBC participants had positive Z scores while that of non G BBC was negative as shown in Table 4.13. These results imply that students in the e-mentoring programme achieved higher in the three subjects than students who were not in the programme. The positive standard scores for participants in the e-mentoring programme mean that the original scores in the three subjects for this group of participants were above the mean scores. On the contrary, the negative standard scores for participants not in the programme mean
that the original scores in the three subjects for this group of participants were below the respective mean scores.

The fifth hypothesis sought to establish whether the difference were statistically significant. An independent samples t-test was conducted to test the hypothesis that states: “There was no significant difference in academic achievement among students in the e-mentoring programme and those not in the programme”. Results of the t-test are presented in Tables 4.14a and 4.14b. Table 4.14a shows the academic achievement group statistics while Table 4.14b show the t test results.

**Table 4.14a: Academic Achievement Group Statistics**

<table>
<thead>
<tr>
<th>Study group</th>
<th>N</th>
<th>Mean</th>
<th>Std.</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic Achievement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GGBC</td>
<td>47</td>
<td>.2188</td>
<td>.88272</td>
<td>.12876</td>
</tr>
<tr>
<td>NGGBC</td>
<td>45</td>
<td>-.2285</td>
<td>.70713</td>
<td>.10541</td>
</tr>
</tbody>
</table>
Table 4.14b: Results of t-test of E-mentoring and Participants’ Academic Achievement (English Kiswahili, Mathematics)

<table>
<thead>
<tr>
<th>Levene's Test</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td>1.419</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>2.68</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>t</td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td>.009</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>.009</td>
</tr>
</tbody>
</table>

**Key:**

Diff. = Differences

Table 4.14b shows that the Levenne statistic was not significant at the 0.05 level. The results indicate that there was a significant difference in academic achievement between those students in the e-mentoring programme and those not in the programme (t (90) =2.675, p<0.01). The null hypothesis that states: There was no significant difference in academic achievement between those students in the e-mentoring programme and those not in the programme” was therefore rejected in favour of the alternative hypothesis. This means that the participants in the GGBC e-mentoring programme academic performance were higher than that of the students who did not participant in the e-mentoring programme. This finding concurs with that of Sa´nchez, Esparza, and Colo´ n (2008) who found
that cordial relationships play a key role played by in academic outcomes of the mentees.

In relation to academic performance, the researcher also obtained further data from eight participants who were engaged in focus group discussions. The participants reported that e-mentoring enabled them to have increased academic performance. Moreover, some participants reported having received study materials such as text books from their mentors which helped them to perform well. Thus the participants reported positive results in academic performance as a result of mentoring. The positive results could also be attributed to the fact that all e-mentors have attained quite a high level of education and therefore having a mentor who is highly educated acting as a role model would contribute to higher academic aspirations and motivation more so than having a mentor who is less educated. Again the results described may have also been influenced by the frequency of contact, relationship duration and support mentors provide in the education of the e-mentees.

Excerpts from some participants during the FGD were presented as follows:

E-mentors are our role models whom we look up to and whenever we fail examinations they help us pick up our broken pieces and continue.

Mathematics used to be my poorest performed subject. In my first year of secondary school, my e-mentor encouraged me by sending tutorials through the internet. With these, I tutored myself and now I love mathematics very much. It is my best subject.
My e-mentor bought me books and also she bought some for our school; these have helped me to learn hence adding an extra academic excellence in my academic pursuits.

The above statements seem to insinuate that the e-mentees uphold the relationship and the role played by the e-mentors. The e-mentors are not only giving moral support but they are also materially helping their e-mentees by providing tangible aid towards enhancing the academic achievement of their young friends. It is evident that most e-mentees have been highly motivated by their highly educated e-mentors who give words of encouragement and as a result make most of them to be focused on their academics.

The findings confirm what Quing Li, Loorman and Dyjur (2010) found in their study of science and mathematics learning of Canadian rural students who had been in mentoring programme. Their study found that mentoring had significantly enhanced students’ learning. Rhodes, Grossman and Resche (2000) study also points out that the message mentors send out to mentees regarding the value of school stimulated adolescents such that their attitudes towards school improved their academic performance. Similarly, several other researchers found that mentoring had positive impact on academic achievement (Thompson and Kelly, 2001; Rodger and Tremblay, 2003; Rhodes, 2007; Cook, 2008; Kaula, 2010). However, Karcher (2009) and Renee (2009) whose studies involved both males and females found that, males more than females seemed to benefit more significantly from the e-mentoring program.
4.8 Summary of Findings

This chapter focused on the results of the study findings.

The demographic information collected showed that a total of 92 students participated in the study. Out of these, 51% of the participants were members of GGBC programme while 49% were non-GGBC members. The results further showed that 85% of the GGBC participants had been in the programme for more than 2 years. Regarding parental status of the participants, 15 were orphaned while 35 had only one parent. The study also established that out of the total 92 participants, 67% were aged between 15 and 17 years.

The analysis of the participants’ levels of self-esteem revealed that students in the e-mentoring programme scored higher than students not in the programme. The mean of those students in the e-mentoring programme ($m = 4.4.0$, $sd = 0.902$) was different from the mean of those students not participating in the e-mentoring programme ($m = 2.30$, $sd = 1.042$). The t test results revealed that ($t (90) =13.121$, $p<0.01$). The hypothesis testing showed that there was a significant difference in self-esteem levels between those students participating in the e-mentoring programme and those not participating in the programme.

On self-efficacy levels, the study revealed that there was a difference between those students participating in the e-mentoring programme and those not participating in the programme. The mean scores of those students participating in the e-mentoring programme was ($m = 4.4.0$, $sd = 0.902$), while that of those students not participating in the e-mentoring programme was ($m = 2.30$, $sd = 1.042$).
The t-test results indicate that (t (90) =8.919, p<0.01), an implication that, there was a significant difference in self-efficacy levels between those students in the e-mentoring programme and those not in the programme.

The findings in this chapter pointed out that the duration of e-mentoring also had some an impact on both self-esteem and self-efficacy. This was supported by the fact that after the researcher carried out a post hoc tests showed that those students who had been in the programme for a period of between I and 3 years benefited more. However, it was also clear that remaining in the programme for longer than three years added no value to either self-esteem or self-efficacy levels.

Regarding academic achievement, it was revealed that students in the e-mentoring programme achieved higher in all the 3 subjects in the study that is, English, Kiswahili and Mathematics as compared to students not in the e-mentoring programme. Results further indicated that there was a significant difference in academic achievement between those students in the e-mentoring programme and those not in the programme (t (90) =2.675, p<0.01).

The researcher had formulated five hypotheses to guide the study. The Results indicate that all the null hypotheses were rejected in favor of the alternative hypotheses.
### Table 4.15: Summary of hypotheses testing

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Test statistic</th>
<th>df</th>
<th>P</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ho1: There is no significant difference in the levels of among students in and those not in the e-mentoring programme</td>
<td>t = 13.021</td>
<td>78.069</td>
<td>0.00</td>
<td>Reject</td>
</tr>
<tr>
<td>H₀₂: There is no significant difference in the levels of self-efficacy among students in and those not in the e-mentoring programme</td>
<td>t = 8.818</td>
<td>68.79</td>
<td>0.000</td>
<td>Reject</td>
</tr>
<tr>
<td>Ho₃: There is no significant difference in levels of self-esteem among students at different years of e-mentoring</td>
<td>F = 18.384</td>
<td>3,5</td>
<td>0.000</td>
<td>Reject</td>
</tr>
<tr>
<td>H₀₄: There is no significant difference in the levels of self-efficacy among students at different years of e-mentoring</td>
<td>F = 18.384</td>
<td>3,52</td>
<td>0.000</td>
<td>Reject</td>
</tr>
<tr>
<td>Ho₅: There is no significant difference in academic scores between those students in and those not in the e-mentoring programme</td>
<td>t = 2.675</td>
<td>90</td>
<td>0.009</td>
<td>Reject</td>
</tr>
</tbody>
</table>

The next chapter discusses the conclusion and recommendations arrived at following this study.
CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents an overview of the study entitled “Influence of e-mentoring on self-esteem, self-efficacy and academic achievement of secondary school students in Nairobi and Kiambu counties”. The chapter provides the summary of the findings, conclusions deduced from the study, and recommendations based on the study as they relate to different stakeholders.

5.2 Summary of the Study Findings

The title of the study was: Influence of e-mentoring on self-esteem, self-efficacy, and academic achievement of secondary school students in Nairobi and Kiambu Counties, Kenya. The Independent variable was e-mentoring while the dependent variables were Self-esteem, self-efficacy and Academic achievement.

The purpose of this study was to explore and compare the levels of self-esteem, self-efficacy, and academic achievement of students in the GGBC programme with those of students not in the programme. The sample of the study was 92 students in form three and four from two schools in Nairobi County who were members of GGBC programme

In the first objective, the researcher used self-esteem scores of the two groups of students who participated in the study. The descriptive statistics showed that the mean scores of students in the e-mentoring were higher than those of students not participating in the programme. To ascertain whether or not there
were statistically significant differences in the self-esteem levels among students in the e-mentoring programme and those not in the programme, an Independent samples t-test was carried out. The results indicate that there was a significant difference in self-esteem levels between students participating in the e-mentoring programme and those not in the programme. The mean of those students in the e-mentoring programme ($m=3.4$, $sd = 0.802$) was significantly different from the mean of those students not participating in the e-mentoring programme ($m = 2.30$, $sd = 1.042$), ($t(90) =13.021, p<0.01$).

In this second objective, the researcher compared the means of the two groups that participated in the study using the score gained from the self-efficacy questionnaire. The descriptive statistics indicated that the mean of levels of self-efficacy for participants in the mentoring programme was found to be ($m=4.4.0$, $sd = 0.902$) while the mean of self-efficacy for those not in the programme was reported to be ($m = 2.30$, $sd = 1.042$). To test whether or not there was a statistically significant difference in self-efficacy levels between those students in the e-mentoring programme and those not participating in the programme, a t-test were conducted to test the hypothesis. The t-test results indicate that ($t (90) =8.818, p<0.01$). The t-test results ascertained that self-efficacy levels for participants in the mentoring programme was significantly higher than that of those students not participating in the programme.

The third objective sought establish whether or not there was significant difference in self-esteem levels between those students at different years of e-
mentoring, a one-way ANOVA test was conducted to test this hypothesis. “There is no significant difference in self-esteem levels between those students at different levels of e-mentoring” at the 0.05 significance level ($F (3, 52) = 18.384, p > 0.05$).

To establish whether or not there was significant difference in self-efficacy levels between students at different years of e-mentoring, a one-way ANOVA test was conducted to test this hypothesis. The null hypothesis was rejected ($F_{3, 52}(0.05) = 15.220, p < 0.01$).

The study also intended to investigate the influence of e-mentoring on academic achievement. The descriptive statistics show that participants in the e-mentoring programme had higher mean scores in the three subjects than students not participating in the programme. Results of t-test indicated that there was a significant difference in academic achievement between those students in the e-mentoring programme and those not in the programme ($t(90) = 2.675, p < 0.01$). The null hypothesis that stated: “There was no significant difference in academic achievement between those students in the e-mentoring programme and those not in the programme” was therefore rejected.

5.3 Conclusions

The most important finding of the study is the empirical evidence about existence of statistically significant differences between those students who had been in e-mentoring programme and those not in the programme in regard to their self-esteem, efficacy and academic achievement. The same differences were also found in students’ self-esteem and efficacy when compared to the duration
participants had been in the e-mentoring programme. Generally, the study revealed that e-mentoring consistently addresses students’ self-esteem, efficacy and academic achievement while at the same time boosting them in different psychosocial aspects. Finally, the study specifically reaffirms the importance of e-mentoring relationships and students’ self esteem and self-efficacy and, consequently, their academic achievements.

5.4 Recommendations of the Study

The following are some recommendations that the study came up with.

GGBC Programme

i. Due to the positive results of the forgoing study regarding the effectiveness of e-mentoring in the GGBC programme, the researcher highly recommends continued screening and training of the e-mentors to ensure the expected results are attained and retained.

ii. Regular communication in e-mentoring allows for more meaningful relationship to be established and for mentoring to make positive impact in the mentees life.

Policy Makers

Research on secondary school youths/adolescents e-mentoring programmes in Kenya is still in its early stage of development, therefore there are still more openings available to ensure first of all that as many youths in secondary schools s
possible are helped to receive the opportunity to interact with adults through strengthening and expanding the existing e-mentoring programmes.

A second recommendation for policy makers is that there is need to invest in mentoring programmes as intervention for the youth in secondary school who require extra adult guidance.

5.5 Suggestions for Further Research

The researcher recommends that further research be conducted in the following areas:

i. To establish the role e-mentors play in the entire process and getting to know their feelings regarding the programme and their contribution to individual e-mentees.

ii. To establish the levels self-efficacy and of self-esteem of the e-mentees before and after joining the programme.

iii. In boys’ schools to see whether they would demonstrate similar results as the current study focused on girls only.

iv. Using case study instead of self-administered measures. This may yield some useful information.

v. To establish whether the relationship between e-mentees and their teachers and parents improve because of having been in the programme.
REFERENCES


APPENDIX 1:

Dear participant,

My name is Ndeke Florentina Ndunge. I am a PhD student at Kenyatta University, Educational Psychology department. Currently, I am undertaking my research entitled “INFLUENCE OF E-MENTORING ON SELF-ESTEEM, SELF-EFFICACY, AND ACADEMIC ACHIEVEMENT OF SECONDARY SCHOOL GIRLS IN NAIROBI AND KIAMBU COUNTIES- KENYA”.

Your have been selected to participate in this study because you are a member of Global Give Back Circle (GGBC) e-mentoring programme.
I am therefore requesting you to help me carry out my research by filling in the attached questionnaire. Please feel free to participate and give your responses as honestly as possible.

Your information and identity will be treated with the confidentiality it deserves.

Thank you very much

Sincerely,

Florentina N. Ndeke
SELF-ESTEEM QUESTIONNAIRE
Section A: Demographic information

The following are some short statements regarding you.

Please answer all the questions honestly by ticking the appropriate response. DO NOT WRITE YOUR NAME ANYWHERE.

1. Tick the name of your school:  a) Starehe Girls ( ) b) St. Martins Girls ( )

2. I am in Form---   a) Form 3 ( ) b)Form 4 ( )

3. Length of e-mentoring relationship
   a) 1 year ( ) b) 2 years ( ) c) 3 years ( ) d) more than 3 years ( )

4. Tick you age where appropriate.
   a) 12-14 ( ) b) 15-17 ( ) c) 18-20 ( ) d) 21-25 ( )

5. I ------- a) am an Orphan ( ) b) have both parents ( ) c) have one parent( )
**Section B: Student’s Self-Esteem**

**Instructions:** Below are a series of statements dealing with your general feelings about yourself. Circle the response that indicates the extent to which you agree with each of the following statements, using the scale below. There is no right or wrong answers to the test:

<table>
<thead>
<tr>
<th></th>
<th>S</th>
<th>A</th>
<th>NS</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
</table>

1. I feel that I’m a person of worth, at least on an equal level with others  
2. I feel that I have a number of good qualities  
3. Most of the times I tend to feel that I am a failure  
4. I am able to do things as well as most other students.  
5. I feel I do not have much to be proud of in my life.  
6. I take a positive attitude toward myself.  
7. Generally, I am satisfied with my self  
8. I wish I have more respect for myself.  
9. I certainly feel very useless at times.  
10. At times I think I am no good.  
11. I always achieve my goals  
12. I have dreams and goals in my life that I need to accomplish  
13. I feel I have come to appreciate who I am  
14. My interaction with other people in life has helped to grow.

**Thank you very much for your assistance**
**Section C: Self-efficacy**

Below are short statements describing your reactions towards certain situations.

Read each statement carefully and tick the correct answer which represents the extent to which you agree with each statement. There is no right and wrong answers.

CD = **Completely Disagree**   D = **Disagree**   NS = **Not Sure**

A = **Agree**   CA = **Completely Agree**

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>If something looks too complicated, I am usually keen to try it</td>
<td>CD</td>
<td>D</td>
<td>NS</td>
</tr>
<tr>
<td>2.</td>
<td>I trying to learn new things when they look too difficult</td>
<td>D</td>
<td>NS</td>
<td>A</td>
</tr>
<tr>
<td>3.</td>
<td>When trying something new, I don’t give up if I am not initially successful.</td>
<td>NS</td>
<td>A</td>
<td>CA</td>
</tr>
<tr>
<td>4.</td>
<td>When I make plans, I persist until I can make them work.</td>
<td>A</td>
<td>NS</td>
<td>CD</td>
</tr>
<tr>
<td>5.</td>
<td>If I can’t do a job first time, I keep trying until I can</td>
<td>NS</td>
<td>A</td>
<td>CD</td>
</tr>
<tr>
<td>6.</td>
<td>When I have something unpleasant to do, I stick to it until finish it</td>
<td>NS</td>
<td>D</td>
<td>CD</td>
</tr>
<tr>
<td>7.</td>
<td>When I decide to do something, I go right to work on it.</td>
<td>A</td>
<td>NS</td>
<td>CD</td>
</tr>
<tr>
<td>8.</td>
<td>Failure just makes me try harder until I succeed</td>
<td>A</td>
<td>NS</td>
<td>CD</td>
</tr>
<tr>
<td>9.</td>
<td>When I set important goals for myself, I usually achieve them</td>
<td>NS</td>
<td>D</td>
<td>CD</td>
</tr>
<tr>
<td>10.</td>
<td>I seem to be capable in dealing with most problems that come my way.</td>
<td>NS</td>
<td>A</td>
<td>CD</td>
</tr>
<tr>
<td>11.</td>
<td>I feel sure about my ability to do things</td>
<td>D</td>
<td>NS</td>
<td>A</td>
</tr>
<tr>
<td>12.</td>
<td>I don’t give up on things before completing them</td>
<td>NS</td>
<td>A</td>
<td>CD</td>
</tr>
<tr>
<td>13.</td>
<td>One of my strengths is that I do not get distracted easily in my work</td>
<td>NS</td>
<td>A</td>
<td>CD</td>
</tr>
<tr>
<td>14.</td>
<td>I am self – motivated</td>
<td>NS</td>
<td>A</td>
<td>CD</td>
</tr>
<tr>
<td>15.</td>
<td>I don’t give up easily</td>
<td>NS</td>
<td>A</td>
<td>CD</td>
</tr>
</tbody>
</table>

Thank you very much for your assistance
Section D: Academic scores

Please fill in marks of the following subjects as attained in the last examination

1. English ---------
2. Kiswahili --------
3. Mathematics --------

Thank you very much for your assistance
APPENDIX 11: LETTER OF AUTHORIZATION TO USE SELF-EFFICACY SCALE

From: "Sherer, Mark" <Mark.Sherer@memorialhermann.org>
To: Florentina Maurice <florentina.maurice@yahoo.com>
Sent: Monday, September 26, 2011 4:48 PM
Subject: RE: Permission to use General Self-Efficacy Scale

I am writing to give you permission to use the Self-efficacy Scale in your research. I have attached the scale as well as scoring instructions. According to Google Scholar, this scale has been cited over 1,100 times so there is a substantial literature to help you with your project.

Mark Sherer, Ph.D., ABPP, FACRM
Senior Scientist, Director of Research
Director of Neuropsychology
TIRR Memorial Hermann
Clinical Professor of Physical Medicine and Rehabilitation
Baylor College of Medicine
University of Texas Medical School at Houston
1333 Moursund
Houston, TX 77030

713-799-7007
713-799-7049 (fax)
B. LETTER REQUESTING PERMISSION TO USE SELF-EFFICACY SCALE

From: Florentina Maurice [mailto:florentina.maurice@yahoo.com]
Sent: Sunday, September 25, 2011 9:42 AM
To: Sherer, Mark
Subject: Permission to use General Self-Efficacy Scale

Dr. Mark Sherer

My name is Florentina Ndunge Ndeke, a PhD student at Kenyatta University, Nairobi Kenya- East Africa.
Kenyatta University is a public University in Kenya and I am a student at the Department of Educational Psychology.
I am writing my PhD proposal and I will be looking at E-mentoring in relation to its influence on self-esteem, self- efficacy and academic achievement of secondary school students in Kenya.
I am interested in using your above scale, which from the literature was developed in 1982 and later modified by Bosscher and Smit in 1998.
I am therefore requesting for your permission to use the said scale.
Again my details are as follows:

Name: Florentina N. Ndeke
Registration No. E 83/12895/2009
Department: Educational Psychology
University: Kenyatta University- Kenya- East Africa
Address P.O. Box 43844, Nairobi, Kenya.

My Supervisors are:

1. Prof. Edward Oyugi
2. Dr. Jacinta Kwena

Thanking you for your assistance.

Florentina Ndeke
APPENDIX III:
FOCUS GROUP DISCUSSION GUIDE

Description of e-mentoring relationship

1. What are the strengths of your relationship with your e-mentor?
2. How would you describe the experiences of the e-mentoring programme?
3. Do you share with e-mentors things which you would not normally share with other adults, for example, your parents or your teachers?
4. How do you think the relationship with your e-mentor has impacted on you?
5. Is there a particular time when you particularly felt very close to your e-mentor?
6. What benefits have you acquired through the e-mentoring relationship?
7. What are some of the weaknesses and challenges you have experienced in the programme?
8. Do you have suggestions on how the Global Give Bank Circle e-mentoring programme can be improved?
APPENDIX IV

RESEARCH PERMIT

THIS IS TO CERTIFY THAT:
Prof./Dr./Mr./Mrs./Miaa/Institution
Florentina Njunge Ndeke
of (Address) Kenyatta University
P.O.Box 43844-00100, Nairobi.
has been permitted to conduct research in

Location
District
County


for a period ending: 39th November, 2013.

Applicant's Signature

Secretary
National Council for Science & Technology
NCST/RCD/14/012/1172

Florentina Ndunge Ndeke
Kenyatta University
P.O.Box 43844-00100
Nairobi.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "Influence of E-Mentoring on self-esteem, self-efficacy and academic achievement of secondary school students in Nairobi and Kiambu Counties, Kenya," I am pleased to inform you that you have been authorized to undertake research in Nairobi County for a period ending 30th November, 2013.

You are advised to report to the District Commissioners and the District Education Officers, Nairobi County before embarking on the research project.

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

DR. M. K. RUGUTT, PhD, HSC.
DEPUTY COUNCIL SECRETARY

Copy to:

The District Commissioners
The District Education Officers
Nairobi County.

"The National Council for Science and Technology is Committed to the Promotion of Science and Technology for National Development"
MINISTRY OF EDUCATION

Telegrams: ‘SCHOOLING’, Westlands
Telephone: When replying please quote
Our Ref: WEST-D/ED/GEN

DISTRICT EDUCATION OFFICE
WESTLANDS DISTRICT
P.O BOX 13788-00800
NAIROBI.

1ST NOVEMBER 2012

TO WHOM IT MAY CONCERN

RE: Research Authorization: Florentina Ndunge Ndeke

The above named has been authorized to carry out research on “influence of e-monitoring on self esteem, self-efficacy and academic achievement of secondary school students in Nairobi and Kiambu counties, Kenya “The research will be carried out in Nairobi county and this letter is therefore to request you to give her any assistance she may require in doing the research.

Kindly accord her the necessary assistance.

J.M. Kimando
District Education Officer
WESTLANDS.

District Education Officer
Westlands District
P. O. Box 74629-00200, Nairobi.
Sign:____________________Date:____________________
MINISTRY OF EDUCATION

Telegrams: “Schooling” Nairobi
E-mail: kasaranideo@yahoo.com
Fax No: N/A
When replying please quote

DISTRICT EDUCATION OFFICE
KASARANI DISTRICT,
P.O Box 1274-00618,
RUARAKA.

REPUBLIC OF KENYA

REF: KAS/GF/13/187
DATE: 1st November 2012

DIRECTOR

STAREHE GIRLS CENTRE

RE: RESEARCH AUTHORIZATION FOR FLORENTINA NDUNGE NDEKE
The above mentioned is a student at the Kenyatta University and intends to carry out a research on “influence of E-Mentoring on self esteem, self-efficacy and academic achievement of Secondary school students in Nairobi and Kiambu Counties, Kenya”.
Authority has therefore been granted to her by the National Council of Science and technology and the District Education office – Kasarani to carry out research as indicated NCST/RCD/14/012/1172 dated 19th October 2012. The research periods ends on 30th November 2013.
Please accord her the necessary support.

[Signature]

EDITH KARIUKI
DISTRICT EDUCATION OFFICER
KASARANI