

**A COMPARATIVE ANALYSIS OF UPPER AND LOWER QUARTILE ACADEMIC
ACHIEVERS' STUDY HABITS IN SECONDARY SCHOOLS IN EMBU COUNTY,
KENYA**

by

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DECLARATION

Student Number: 42152771

I declare that “**Comparative analysis of upper and lower quartile academic achievers’ study habits in secondary school in Embu county, Kenya**” is my original work and has not been presented in any institution for academic awards. All sources of information have been acknowledged.



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November, 2014

DATE

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DEDICATION

I dedicate this work to:

My parents Njue and Wanjuki for imparting in me the virtues such as patience, hard work and unwavering determination and courage that have enabled me to come this far.

All the teachers and other educators who will use this work in training and persuading students to develop and integrate study habits, self-efficacy and internal locus of control for improvement of academic performance.

True teachers are those who use themselves as bridges over which they invite their students to cross; then, having facilitated their crossing, joyfully collapse, encouraging them to create their own while watching from a distance (Nikos, 2015)

ABSTRACT

The main purpose of this study was to investigate the differential levels of study habits between upper and lower academic achievers in secondary school in Embu County, Kenya. The study explored the current literature related to the study and carried out an empirical investigation towards this end.

The target population for the study comprised all Form 4 secondary school students in all public secondary schools in Embu County. The student study samples were drawn from 50 out of 156 public secondary schools in the County. Students were drawn from both county and district level of secondary schools. Purposive sampling was used to select the uppermost and lowermost academic achievers over a period of two preceding years.

Data was collected by using differently marked questionnaires for pre-determined uppermost and lowermost academic achievement groups of respondents. Each questionnaire comprised of four sections: Bio-demographic information, study habits, internal locus of control and self-efficacy. Self-efficacy and locus of control are some of the covert study habits.

Data collected was analysed using descriptive statistics (percentages, means, distribution, and standard deviation) and inferential statistics especially analysis of variance (ANOVA). A pilot study was undertaken to check and enhance on the validity and reliability of the research instruments before commencement of the actual research study. Data was presented in tables, bar and linear graphs.

Findings indicated that the upper quartile achievers had higher scores in internal locus of control but not study habits and self-efficacy. Students at lower level of achievement performance reported stronger study habits and self-efficacy compared to their upper performance counterparts. Bio-demographic factors (age, gender, school level, residential status) had very little, if any, influence on students level of study habits, self-efficacy and internal locus of control. The study recommended that stakeholders especially parents, teachers and other significant members of the community should

endeavour to help students acquire and develop strong internal locus of control in order to be able to actualize their study habits and self-efficacy to attain higher academic performance and achievement as would be expected of students reporting such levels in study habits and self-efficacy in academic environment.

KEY TERMS

Academic achievement, performance, study habits, self-efficacy, internal locus of control, upper quartile, lower quartile

LIST OF ACRONYMS AND ABBREVIATIONS

SH	Study Habits
SE	Self-efficacy
HBDI	Herrmann's Brain Dominance Instrument
ILOC	Internal Locus of Control
KNEC	Kenya National Examinations Council
KCPE	Kenya Certificate of Primary Examination
KCSE	Kenya Certificate of Secondary Education
PBLM	Problem-Based Learning Model
PEMSAA	Personal Effort Model of Study and Academic Achievement
ZPD	Zone of Proximal Development
MKO	More Knowledgeable Other

Note: Referencing has been done according to the Revised Harvard Method as set out in “Guidelines for Referencing Source Material for Assignments, Articles, Research reports, Theses & Dissertations, TMAs” Compiled by the UNISA SBL Librarians, 2009.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION AND RATIONALE OF THE STUDY

Most measurements of learning outcomes in the Kenyan education system are comparative and competitive in nature. Competition is alive in our schools with success determined by the mean grade one scores in the national examinations. The grade in turn determines the amount of advantage one has over others on the basis of level of academic performance in the competition for employment or higher education.

Students are admitted to secondary schools on equitable academic qualifications hence the genesis of their significantly differential performance that emerges later is a question that begs for answers. The majority of students in secondary schools perform poorly in the Kenya Certificate of Secondary Education (KCSE) national examination. For example, in 2008, 102 000 out of a total of 305 000 candidates or 33.44% attained grades D to E while only 27.46% attained grade C+ and above in 2013 KCSE results (MOEST/KNEC, 2014). This state of affairs demoralises parents, teachers, students, and members of the community and other stakeholders who would wish to witness good performance among secondary school students. In a country that overemphasizes high academic achievements, high grades would enable young people to secure employment or admission to reputable institutions of higher education, all of which are pegged on the quality of grades attained in the qualifying national examination.

It is believed that students who perform well practise superior study habits both at physical as well as cognitive levels compared to their low performing counterparts. Such habits should be identified and emulated by lower quartile academic performers and practised both at home and school. Teachers and parents are the basic custodians of children's academic behaviours. Habits can be learned and once desirable ones are correctly identified, they can be inculcated especially among the impressionable adolescents in secondary schools. Students' failure in national examinations is one of the reasons that make teachers fear signing performance contracts as demanded by the government in Kenya (Too, Makokha, Mutai &

Chepkwony, 2011). Teachers' productivity is pegged on students' performance yet it is not teachers but students who sit the KCSE. Whenever results are poor, the ministry of education and TSC, punitively, transfers and or demotes respective schools' principals and teachers who are assumed not to have worked well enough to ensure good performance of their students. This could be what drives parents, teachers and students to collaborate and engineer cheating in national examinations. Teachers would like to minimise blame and possibly use such performance by their students to get professional promotions to higher grades while parents and students want good grades for competitive purposes in higher education and employment opportunities. For the same reason, parents are highly selective of schools in which they enrol their children, especially after completion of primary education. The majority opt for schools that have a history and culture of posting good results in national examinations. Day schools are generally avoided even where such schools would be the best placement for the child and the most cost effective.

The question of what learning, habitual and behavioural variations exist between upper and lower quartile academic achievers in secondary schools in Kenya is crucial and acts as the key factor motivating this study. The student is the key factor in determining success or failure in school otherwise why do we have students passing where many of their peers in the same or similar academic environment fail. Student performance may be as a result of overt study habits as well as covert or psychological study habits such as locus of control and level of self-efficacy.

Habits are developed from training, and influence observed academic practice. We develop many habits in our lives, some of which are productive, and others non-productive. Good habits should be emphasized be encouraged by society while bad ones need to be discarded for improved quality of life. Getting rid of bad habits is not easy, especially if an addiction is involved. Currently, issues pertaining to habits are evident in all aspects of living and existence: feeding, drinking, sex, reading, dressing, work and sporting and exercise among others. The underlying concept in all this habit-changing business is that bad habits need be broken and replaced with good ones in order to improve the quality of life and achievement of life goals. Just as much as people are encouraged to change their lifestyles in order to improve their health status, in the same way students should be encouraged to change their study habits in order to improve their academic performance. In academics, good study

habits are those that earn individuals good grades or anticipated levels of achievement in national examinations or general schooling outcomes (Bostrom & Lassen, 2006; Vignoles & Meschi, 2010).

The researcher wishes to make a critical personal observation that:

“With properly set personal goals and persistent goal-oriented efforts, individuals can cultivate highly productive study habits which any student of average cognitive ability can integrate and apply to succeed academically irrespective of the category of school she/he attends”. This should be combined with productive habits of the mind such as locus of control and self-efficacy.

Failure, which may be defined as the inability to attain set and desired academic goals, is caused by non-use of potential rather than lack of it. If one does not know where he/she is, one cannot plan where one wants to go and or how to get there (NASP, 2010). It is on the present that the future is planned and mounted. The present therefore acts as a springboard for the future.

Planning involves deciding on how to carry out a certain activity step by step until a certain goal is achieved. The planner should know the variables, what to vary and what the constraints are as well as the opportunity costs. Instead of engaging in well-organised studies, the majority of students behave like academic robots that cram and regurgitate information without digesting it merely for examination purposes. The ill-preparedness coupled with the desire to pass well sometimes drives students to the temptation to cheat in examinations with the help of some highly placed stakeholders, and sometimes with catastrophic consequences such as cancellation of entire examination results for entire schools (Bosire, 2012; KNEC, 2013; Daily Nation, 2014).

National Tutoring Association (NTA) (2010) argues that peer tutoring is cognitively beneficial. Some of the things that top performers in the KCSE 2008 attributed to their high performance include:

- Praying and studying a lot and God answering prayers;
- Hard work and encouragement from parents and teachers; and
- Support from parents and teachers.

Whenever KCSE examination results are released, those at the top of the performance rank list are given all attention without giving any mention of those who come at the bottom of the merit list of performance (Iraki, 2009). The media publishes the national and county top ten, fifties and hundreds. The top performers are interviewed on how they attained high achievement but nobody bothers to enquire how the low performers attained their low achievement (Adeyemi, 2010). All this demonstrates the importance attached to academic success and the way failure is frowned upon.

The family members, friends and teachers shout with joy as the high academic achievers chant how they managed to get such high scores to win victory. The dream careers of these high-flying academic achievers are extremely competitive, all requiring extremely high academic grades and hard to come by university degree programmes. Professions desired by high academic achievers include law, neurosurgery, paediatrics, medicine, aviation, and engineering among other seemingly prestigious professions.

Those who do not make the grade are encouraged to persevere and try again. After doing well in examinations following hard work, a student advised unsuccessful candidates not to be distracted from their academic path even when they encounter challenges but to always fight on (Daily Nation, 2008; Sussman, Heller, Miller & Mohanty, 2013).

The main concern is what this “working hard behaviour” entails precisely so that all those who wish to do well in national examinations can emulate it. Parents and teachers complain that those who do not perform well lack good study habits and do not work hard both in school and at home and this concern forms the key motivation factor for this study.

The greatest responsibility of teachers is not to put ready-made knowledge into the heads of students but to help them develop the necessary learning and study skills and habits in order to construct their own knowledge, as well as impress on students to work hard towards their set academic goals. Students construct their own individual styles of learning and should be taught to take responsibility for their own learning outcomes and courageously account for their individual success or failure in school.

Secondary school students, having attained Piaget's formal operations level of cognitive development (Santrock, 2014), are capable of constructing and /or adapting their own learning/study environments especially when away from teachers' direct control. They know what best suits their personality and interests. While individual teachers cannot provide the physical resources and facilities to satisfy all individual student study needs, they can effectively equip their learners with the requisite psychological, emotional and motivational bedrock resources. Such would include self-confidence, self-efficacy, self-regulation, positive self-esteem, high expectations, and realistic ambitions among other variables that have the capacity to significantly influence human efforts and motivation toward good performance.

Habits result from the repetition of some response or sequence of responses to stimuli (Hull, 1943). Learning habits grow out of existing behaviours. Habits develop from behaviours that have consistently helped an individual to achieve set goals and objectives (Bandura, 2002). Humans can take charge of their own behaviours and habits and create new lifestyles for themselves regardless of all prevailing environmental obstacles or hindrances if only they purpose to. Once a habit is formed, its practice no longer requires much of one's cognitive inputs or efforts (World Book Encyclopaedia, 2001). It becomes almost an automated activity calling for little conscious thought. The brain becomes accustomed and synchronised in its reactions in relation to the habituated activity. Many psychologists believe that people will learn habits that benefit them through rewards or reinforcements and tend to discard or break habits perceived as unpleasant or unrewarding (Arthur & Bena, 2009). Better academic grades may form satisfactory rewards for students' learning motivation and sustained or improved productive academic behaviour (Gross, 2010).

Habits once formed are hard to break. The brain can actually be conditioned. If students make studying a habit they would find it very easy to work towards high academic goals regardless of whether one attends National, County/Provincial or District level school. Currently, most of the district schools in Kenya are day or non-residential schools in which case students report in the morning and leave for home in the evening as opposed to boarding or residential schools where students attend classes from their residential quarters within the school compound. What matters most may not actually be the type of environment we find ourselves in but the kind and quality of adjustments and adaptations we are willing to make and the mental

frameworks or mindsets we develop in relation to the challenges of the respective environments. For example, in swimming, it is believed that a person who accidentally falls in water will float even if he does not know how to swim if only he/she would relax completely. A mere worry would result in drowning. The metaphor is equivalent to giving up one's academic aspirations because of doubt about one's ability to perform well (Eysenck, Derakshan, Santos & Calvo, 2007; Silvers, Lilienfeld & Laprairie, 2011).

Although all students go to school with the intention to succeed and not to fail, some experience success and others failure for one reason or the other. Some attribute their predicaments to external factors while others attribute them to internal factors. Those who attribute their failures or successes to external factors are said to have external loci of control while those who attribute their experiences to internal factors are said to have an internal locus of control. These two kinds of personalities will react differently to their successes or failures. On experiencing failure, the externally controlled person will easily give up and surrender while the internally controlled person will marshal extra efforts to achieve their desired outcomes in subsequent attempts. Internally controlled people believe in their ability to achieve their goals; for example, the likes of the current American president (Obama) who believed in his ability to win the presidential elections and used a self-efficacious phrase "yes we can" as his campaign slogan (Notable Quotes, n. d.). Those who believe in their ability to achieve what they have set their eyes and mind on have a tendency to work extra hard for achievement of their goals and enjoy community support in their endeavours to achieve their goals. Such people remain focussed and determined even at the darkest of moments in their endeavour (The Guardian, 2014).

Education is a valuable tool for national development and the government of Kenya, like other governments in the world, upholds the philosophy of basic education for all her citizens as can be witnessed with the current free primary and subsidised secondary education (Onsomu, Muthaka, Ngware & Kosimbei, 2006). The government also runs a loans board to finance needy students in university and middle level colleges through Higher Education Loans Board (HELB). To improve accessibility to education in the spirit of education for all, the government has encouraged communities and private investors to establish schools in order to ensure that all those qualified for, or in need of, secondary education do not miss the

chance (StateUniversity.com, 2015). Communities have responded to this call by establishing community non-residential secondary schools within existing primary schools and hired teachers to start the schools off before the government's Teachers Service Commission posts teachers to the new community schools.

Hunger and thirst for education in Kenya has grown steadily prior to and after attainment of independence in 1962. School achievement bears the greatest direct relationship to occupational achievement. This makes academic certification of high value in Kenya where high academic grades are believed to open many doors to many opportunities. Teachers, parents, students and other relevant educational stakeholders value high academic achievement. Certificates have quality and good grades are effective gateways to many careers and professions (Blessler, Blessler & Blessler, 2010). School achievement is a multidimensional concept influenced by both personal and physical environmental variables. Although many research studies have attributed school achievement to external factors such as socio-economic status and school facilities, personal factors also need to be considered (Magiri, 1997; Kulwinder, 2011). Environmental circumstances may be unfavourable for effective individual studies but determined students will always make necessary adjustments using self-regulatory mechanisms and adapt personal conceptions in favour of achievement of their set goals in the face of hard circumstances.

Schools that do not post good performance in national examinations are viewed negatively by the general public including parents, students, and teachers. Few parents would be willing to enrol their children in such schools believing that such schools do not provide students with environments conducive to effective learning. The majority of these schools operate as non-residential (day) schools and are believed to be institutions for those who have neither performed well in their secondary entrance examination, the Kenya Certificate of Primary Education (KCPE), nor can the families afford high fees charged in boarding schools. However, a good number of students attain exemplary grades in these schools to the admiration of many among teachers, parents and peers and community members.

Humans abhor failure and have an inborn motivation for achievement and success but many do not want to pay the price for success which is determination and hard work. It is for this reason that those who feel ill-prepared for examinations may be

tempted to cheat hoping that they will not be discovered; they thus cheat not only the world but themselves as well (Jamii ya Kenya, 2009; Casillas, Robbins, Allen, Kuo, Hanson & Schmeiser, 2012). The struggle for academic success is heightened by the premium assigned to academic achievements in Kenya. Those who fail to perform well in national exams are usually perceived as persons of low intellectual capabilities and have difficulties securing employment and or opportunities for higher learning (Kamau, 2005; Etale, 2013). The majority of students and parents believe that people go to school to learn and acquire good grades to assure them good employment and good money thus viewing education as an economic venture or investment expected to yield high returns on investment (Weil, 2009).

This economic concept is so entrenched that it is hard to convince the majority of Kenyans how any person can be a success in life without good academic credentials. For this reason, we have many young Kenyans seeking higher education both locally and abroad.

Students in all schools should be helped to realise that their academic destiny is in their own hands and not in the type of school they attend. Mostly, individual efforts and determination in studies determine the individual level of achievement. Students should understand that academic success is contingent upon individual student efforts and not the schools they attend. This calls for an individual's deliberate commitment to behaviours and habits commensurate with expected levels of learning outcome in terms of grade.

Parents, teachers and other significant members of the community have a duty to ensure that students are provided with adequate learning environments both at home and school thus enabling them to succeed in their academic pursuits regardless of the level of school they attend.

At one time, I became concerned about a student whom I thought should have been studying instead of spending most of his school holiday playing pool. In response to my well-meaning concern, the student informed me that, in his school, passing was automatic. According to him, the term 'failure' did not feature in his school's vocabulary. Passing had become an integral part of his school's culture, he added, which in turn, I think, had boosted his academic self-efficacy.

1.2 STATEMENT OF THE PROBLEM

Secondary school students get admitted on equitable criteria but when they get into secondary school, their performance varies with some posting good grades while others get poor grades. Those who perform poorly find it a challenge to access further training and or employment opportunities.

To reduce the disparities between the upper and lower performing students there is a need to determine what the high performers do differently from the lower performers and subsequently encourage the lower performers to model their study habits on those of their high performing counterparts. The disparity between the upper and lower academic performers in secondary school in Kenya is emphasised whenever KCSE results are announced and the top performers are praised and celebrated. Performance may be influenced by students' levels of study habits, self-efficacy and locus of control.

According to Piaget's theory of cognitive development (Saul, 2009), secondary school students have attained the level of formal operations that is characterised by one's ability to make considerably sound independent decisions depending on individuals' desired outcomes from own behaviours.

Unfortunately it is at the same stage that adolescent students are struggling with a serious developmental crisis known as identity versus role confusion according to Erikson's theory of psychosocial development (Arlene, 2014).

Those who fail to acquire a reasonable self-identity, Arlene (2014), citing Eriksson (1968), argued that they develop a crisis of role confusion that does not favour their academic endeavours. The number of hours students spend at school under direct guidance and supervision by the teachers is dependent on whether the school is a residential or non-residential, day school. For example, students in day secondary schools spend about eight hours in school every day. Most of their time is spent outside the school environment, engaged in non-academic activities unless they choose not to for the sake of studies. Some of these out-of-school engagements may be dangerous or even detrimental to the students' physical, social, psychological, health and academic well-being. It is during this time that many students engage in irresponsible sexual activities and experiment with drugs

(Jackson, 2014). Such students should be helped to make independent decisions on productive use of leisure time for the purposes of academic achievement.

Students in boarding schools enjoy the advantage of their study times being well-structured with stipulated time schedules for every activity. They also enjoy easy and relatively unlimited access to learning facilities such as laboratories and libraries, electricity, clean water and a comparatively more conducive environment for study. Students are easily accessible to the teachers and such teachers may be available and present to supervise and give assistance where needed. However, it has been reported that some students sneak out of the boarding establishments at night to go drinking or visiting friends especially of opposite sex. By contrast, day scholars have to learn to deal with their expanded independence and freedom by deliberately choosing to organise their own studies out of school otherwise they may be tempted to spend their out-of-school time in leisure activities leading to poor performance in national examinations (Rudatisikira, Ogwell, Muula & Siziya, 2007). Just as boarders cooperate with teachers on how best to utilise their leisure time, day scholars should cooperate with parents and guardians on how best to utilise leisure time for academic purposes.

In all human endeavours including learning, personal effort is more important than anything else in determining individual achievement as is reflected in Bandura's (1977) self-efficacy theory. Students who set high premium academic goals organise their studies in such a way as would help them achieve these goals. This in turn influences their desire and motivation to engage in effective study behaviours and habits. With motivation for high achievement, students arrange for consultation sessions with teachers or senior students outside school time to polish up what was not clear during formal classroom instructions.

Poor individual study habits that include poor time management could be a major cause of poor performance by many students in secondary schools possibly due to students' poor self-management skills (Oluwatimilehin & Owoyele, 2012). Time is the only resource that all students have in equal amounts. The knowledge of the study habits employed by those who are academically successful can be used to help others and especially the lower quartile academic achievers. Many students waste a lot of time and energy thinking about their learning environment and how

such environments limit their chances for success instead of adapting psychologically to make the best out of their prevailing learning environments in a compensatory manner (Tuckman, Abry & Smith, 2002). It should be impressed on learners that it is not schools that perform but students in those schools. Without students, classrooms remain mere buildings. Consultations would help students to improve their school grades and general performance. Through application of peer-tested study habits, both physical and psychological, such as locus of control and self-efficacy, lower academic achievers would easily improve their academic performance levels and actualize themselves (Baumeister & Vohs, 2004).

It is easier for students to emulate examples set by their peers than act on advice from adults and especially during adolescence. During adolescence, children tend to reduce their attachment with adults including parents and teachers to rely quite heavily on the advice and example of the peers in almost everything (Bandura, 1986).

1.3 THE PURPOSE OF THE STUDY

The purpose of this study was to find out how upper and lower quartile academic achievers in secondary school in Embu County, Kenya, differ in study habits, self-efficacy and internal locus of control and how these factors are influenced by students' age, gender, school level and residential status.

1.4 RESEARCH QUESTIONS

1.4.1 The Main Research Question

The main research question in this study is:

How do upper and lower quartile academic achievers in secondary school differ in their study habits, self-efficacy and internal locus of control?

1.4.2 Sub-Questions

The sub-questions derived from the main research question include the following:

- What level of study habits, self-efficacy and internal locus of control do secondary students have?

- Are there mean score differences in study habits, self-efficacy and internal locus of control between upper and lower quartile academic achievers in secondary school?
- Are there mean score differences in study habits, self-efficacy and internal locus of control between male and female students in secondary school?
- Are there mean score differences in study habits, self-efficacy and internal locus of control among secondary school students of different ages?
- Are there mean score differences in study habits, self-efficacy and internal locus of control among secondary school students attending county and district level of schools?
- Are there mean score differences in study habits, self-efficacy and internal locus of control among secondary school students of different residential status?

1.4.3 Research Hypotheses

This study sought to test the following null hypotheses:

H₀₁ There are no significant differences between students' levels of study habits, self-efficacy and internal locus of control.

H₀₂ There are no significant mean differences in study habits, self-efficacy and internal locus of control between upper and lower quartile academic achievers among secondary school students.

H₀₄ There are no significant differences in mean study habits, self-efficacy and internal locus of control among secondary school students of different ages.

H₀₃ There are no significant mean differences in study habits, self-efficacy and internal locus of control between male and female secondary school students.

H₀₅ There are no significant differences in mean study habits, self-efficacy and internal locus of control among secondary school students attending secondary schools of different levels.

H₀₆ There are no significant differences in mean study habits, self-efficacy and internal locus of control among secondary school students of different residential status.

1.5 RESEARCH DESIGN AND METHODOLOGY

This section explains the research design and methods of data collection.

1.5.1 Research Design

The design for this study was a quantitative descriptive survey using a multi-sectional self-administered questionnaire. The quantitative research approach is a formal objective systematic process in which numerical data are used to obtain information about the world or a phenomenon, describe variables, examine relationships and determine cause and effect interactions between variables (Burns & Grove, 2005). Data collection methods in this study involved the use of a structured questionnaire that was completed by the respondent students. Quantitative research is suited to hypothesis testing and generalisation of findings. A questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents. Questionnaires are often designed for statistical analysis of the responses, although this is not always the case (Gillham, 2008).

Descriptive survey research is more quantitative in nature, preplanned and structured in design so that the information collected can be statistically inferred on a population (Burns & Bush, 2010).

The main idea behind using this type of research is to better define an opinion, attitude, or behaviour held by a group of people on a given subject. Grouping the responses into predetermined choices will provide statistically inferable data (Shields & Rangarjan, 2013). This allows the researcher to measure the significance of results on the overall population of study, as well as the changes of the respondents' opinions, attitudes, and behaviours over time.

1.5.2 Methods

The methods used in this study include:

- Probability sampling – Simple random and random stratified sampling;
- Data collection instrument – Questionnaire; and
- Statistical analysis – Descriptive and inferential techniques.

1.5.2.1 Sample and sampling

This section explains the methods used in the selection on the respondents.

- Probability Sampling: This is any method of sampling that utilises some form of random selection giving every member of the target population an equal chance to be selected as a participant in the research study. In order to have a random selection method, the researcher set up a procedure that assured that the different units in the target population had an equal probability of being chosen.
- Simple random sampling: This is a procedure or process through which each member of a subset of a statistical population has an equal probability of being chosen as a participant. A simple random sample is meant to be an unbiased representation of a group (Thomas, 2014).
- Non-probability sampling: This is any sampling method where some elements of the target population have no chance of selection or the probability of selection cannot be accurately determined. It involves the selection of elements based on assumptions regarding the population of interest, which forms the criteria for selection thus making it a nonrandom and non-probability sampling thus placing limits on how much information a non-probability sample can provide about the population. Information about the relationship between sample and population is limited, making it difficult to extrapolate from the sample to the population (Young & Smith, 2005).
- Stratified random sampling: A method of sampling that involves the division of a population into smaller groups known as strata. In stratified random sampling, the strata are formed based on members' shared attributes or characteristics. A random sample from each stratum is taken in a number proportional to the stratum's size when compared to the population. These subsets of the strata are then pooled to form a random sample (Hand, 2004).

-

Table 1.1: Sampling choice method

Variable	Sampling type	Sampling method
County	Non-probability	Purposive Convenient
Public schools	Non-probability	Purposive
Level of school	Non-probability	Purposive
Schools	probability	Random Stratified
Respondents	Non-probability	Intensity Stratified

Table 1.1 above shows the researcher's sampling choices.

Form 4 students from public secondary schools in Embu County, Kenya were the target population. The students in the upper and lower performance quartiles groups in county and district secondary schools comprised both boys and girls. The student samples required were representative of upper and lower performance quartiles and the sampling was purposive. In purposive sampling, according to Schumacher and McMillan (2001), the researcher searches for information-rich key informants, groups, places or events to study. These samples are chosen because the researcher believes the subjects have the characteristics or information the researcher wants to investigate.

1.5.2.2 Data collection

During the quantitative phase of the investigation, a structured questionnaire was used. The questionnaires were delivered by the researcher to the fifty selected schools. Upon their supervised completion over a stipulated period of time, the school principal or the delegated representative handed them over to the researcher. The questionnaire was simple, comprising mostly closed ended items and was self-administered (Cohen, Manion & Morrison, 2011).

1.5.2.3 Data analysis and processing

The quantitative data collected during the study survey were analysed using a computer software package. Results were statistically presented and results interpreted.

Details of the research design and methods appear in Chapter 4.

1.6 OPERATIONAL DEFINITIONS

In this section, key terms in this study are presented and operationally defined as they apply specifically to this study. These definitions clarify the main concepts in this research.

1.6.1 Habit

A habit may be viewed a well-learned response that is carried out automatically (without a conscious thought) when presented with an appropriate stimulus (Sundel & Sundel, 2005). In academic circles, habits may be regarded as academically oriented, almost automated, physical or psychological activities in an attempt to reach certain academic achievement levels in secondary school (Kimani, Kara & Njagi, 2013).

Study habits are overt or covert behaviour that a secondary school student engages in for the purposes of achieving desired levels of academic performance (Sundel & Sundel, 2005).

1.6.2 Locus of Control

A locus of control is a psychological (covert) study habit in which an individual attributes his/her experiences to either internal or external factors (Carver & Scheier, 1981). In education, this may imply the forces to which students attribute their academic successes or failures. Psychologists believe that there are two ends of locus of control: internal and external within a continuum (Dweck & Leggett, 1988). The internal locus of control attributes experiences to forces within the individual person's control while external locus of control attributes such experiences to forces beyond personal control (external factors). This has a significant influence on

individual motivation, behaviour and performance in any activity including academic (Uguak, Elias, Uli & Suandi, 2007; Hock, 2013).

1.6.3 Quartile

A quartile is any of the three values which divide the sorted data set into four equal parts, so that each part represents one fourth of the sampled population (The Free Dictionary, 2014).

- Lower quartile = cuts off lowest 25% of data = first quartile (designated Q_1) = 25th percentile;
- Second quartile (designated Q_2) = median = cuts data set in half = 50th percentile; and
- Upper quartile = cuts off highest 25% of data, or lowest 75% = third quartile (designated Q_3) = 75th percentile.

In this study, the upper quartile academic achievers/uppermost performance means the top 25% of students on the average of six consecutive end-of-trimester examination performance ranking lists (form 2 year 2012 and form 3 year 2013) in each selected secondary school.

Lower academic quartile/lowermost performance means the lowest 25% of students on the average of six consecutive end-of-trimester examination performance ranking lists (form 2 year 2012 and form 3 year 2013) in each selected secondary school.

1.6.4 Self-efficacy

Self-efficacy is a psychological (covert) study habit in which an individual holds a belief that one can act effectively and exercise significant controls over events that influence one's life. Social psychologists claim that control beliefs are important determinants of perceived behavioural control, a crucial concept for understanding motivation. Students who believe in their ability to achieve their desired goals will generally do well while those who do not feel efficacious will not achieve due to lack of learning motivation (Gross, 2010). A quote attributed to Mahatma Gandhi on self-efficacy states "If I have the belief that I can do it I shall surely acquire the capacity to do it even if I may not have it at the beginning" (Mahatma Gandhi Quotes, 2014)

1.7 RELIABILITY AND VALIDITY OF THE STUDY

1.7.1 Reliability

Reliability may be viewed as the ability of a research to consistently yield similar results with subsequent studies (replicability) on measures of concern (Cohen, Manion & Morrison, 2007). This study used research tools that had been reliably used in earlier studies, widely discussed and piloted by the researcher before commencement of the actual study (Jerusalem & Schwarzer, 1981, Rotter, 1966, Jones & Slate, 2009).

The scientific research process was followed strictly.

1.7.2 Validity

Validity may be defined as the extent to which an instrument measures what it is supposed to measure and performs as it is designed to perform. Validity may be viewed as the ability of a research tool to test what it purports to (Kothari, 2008). Tools used in this study had their high validity established by earlier researchers. The tools were also reviewed by the supervisor, secondary school teachers, and university lecturers in psychology departments. The study also strictly followed the scientific research procedure.

1.8 ETHICAL CONSIDERATIONS

The researcher worked with the supervisor in the adaptation and construction of the research instrument. The researcher agreed with the supervisor that the data targeted were not sensitive and the instrument could be used for the intended purpose.

An introductory letter was secured from the UNISA office at KCA University, Kenya, which the researcher used to obtain authority from the county Director of Education to allow him access to schools and to administer the questionnaires in Embu County.

In every selected school, the researcher discussed the research mission with the school principal who thereafter introduced the researcher to the school curriculum coordinator. After a discussion on the data collection and sampling procedure, a request for assistance was made.

Students' consent was requested through schools' curriculum coordinators. The Form 4 students were requested to permit the researcher with the assistance from the curriculum coordinator to select ten of them to help in completing the questionnaire.

Respondents were asked not to write their names or that of their school on any part of the questionnaire and to respond to the questionnaire independently in order to ensure confidentiality of the information and anonymity of the respondent.

Partial research funding was granted by the directorate of student funding at the University of South Africa.

Ethical considerations are practices that researchers must observe in order to protect the rights and freedoms of the respondents as well as planning, conducting and reporting research (RREE, 2013). The research tools were identified with the help of the supervisor and the researcher obtained all the necessary permissions from the relevant authorities and explicit consents from the target respondents before embarking on the data collection. Participating schools and students were assured of confidentiality of the information gathered from them for the purposes of this research study.

1.9 DIVISION OF CHAPTERS

This thesis comprises six chapters briefly outlined as follows.

Chapter 1: Introduction and rationale of the study: This chapter is an overview of the study, significance/rationale, problem formulation, problem statement, research questions and hypotheses set for the research, operational definitions of concepts and an outline of the proposed research design methodology. Its purpose is therefore to place the study into perspective and familiarise the reader with the subject matter of the study.

Chapter 2: An overview of study habits and theoretical perspectives underlying study habits and their related psychological underpinnings followed by a conceptual framework.

Chapter 3: A study habits model and development plan: Study models are reviewed that can be variously used to serve as a guideline to teachers, parents and students on how to form, shape and modify study habits for improved academic achievement among secondary school students. The research finally synthesises various models to come up with a richer conceptual model for enhancing study habits in secondary schools.

Chapter 4: Research design and methodology: This chapter provides a description of the research design and the methodological processes such as the development of the questionnaire; data collection procedures, presentation and analyses are explained.

Chapter 5: Results of the empirical study: In Chapter 5 results obtained through the administration of research questionnaire are presented and an analysis and discussion of the results are provided. A summary of the research findings highlights the statistical hypotheses testing.

Chapter 6: Conclusions, recommendations and limitations: The concluding chapter includes a synthesis of the literature study and the empirical study. The researcher provides a discussion of whether and the extent to which the research questions asked in Chapter 1 have been answered. The limitations of this research, contribution as well as recommendations for further research are noted.

1.10 CHAPTER SUMMARY

This chapter introduced the research topic, problem statement, research design and methods used in conducting this investigation. The purpose of the research was to find out how upper and lower quartile academic achievers in secondary school in Embu County, Kenya differ in study habits, self-efficacy and internal locus of control and how these factors are influenced by students' age, gender, school level and residential status.

When the habits that accounts for differential performance between upper and lower quartile academic achievers are identified, those practised by top performers can be encouraged cultivated and enhanced to improve academic performance.

Having provided this introduction, a literature study on the study habits and academic achievement is undertaken in order to determine the influence the level of study habits have on students' levels of academic achievement. Chapter 2 that follows, focuses on these study habits, and theoretical perspectives underlying study habits and the related psychological underpinnings.

CHAPTER 2

REVIEW OF LITERATURE ON STUDY HABITS

2.1 INTRODUCTION

A vast amount of research is available on students' achievements in specific school subjects (Laird & Black, 2002; Bridgeland, Dilulio & Morison, 2006; Davila & Mora, 2007) but little has been done on the study habits that generally distinguish high and low academic achievers in secondary school and especially in relation to their self-efficacy and locus of control. The purpose of the research was to find out how upper and lower quartile academic achievers in secondary school in Embu County, Kenya differ in study habits, self-efficacy and internal locus of control and how these factors are influenced by students' age, gender, school level and residential status.

The literature review examines how students cultivate productive study habits and develop academically productive locus of control and self-efficacy in order to improve their general performance, and determine how to minimise the existing gap or disparity in academic performance between the high and low levels of academic achievers in secondary school.

This chapter highlights the psychology of habits; theories of learning and behaviour that guide the basic arguments in this study; previous research findings in relevant areas and discussions on students' variance in locus of control and self-efficacy as influences on study behaviour and habits in secondary school. Locus of control and self-efficacy are vital psychological habit variables in the setting and pursuance of personal academic goals and dreams among students.

This chapter presents a review of related literature under the following headings:

- Definition of study habits;
- Formation of study habits;
- Factors influencing study habits;
- Self-efficacy;
- Locus of control;
- Effective study habits;
- Individual learning style;

- Taking examinations;
- Changing study habits; and
- Conceptual framework.

This study seeks to propose a conceptual model of study habits that may account for the differences in academic performance between upper and lower quartile academic achievers in secondary school in Embu county, Kenya, with the hope that the knowledge created can be used to help bridge the gap between the upper and lower performers in learning and improve learning outcomes.

It also seeks to establish what effect some selected bio-demographic variables may have on study habits, locus of control and self-efficacy. Suggestions on ways towards modification of habitual study behaviours both physical and psychological and improvement of locus of control and self-efficacy will be made and emphasised. Figure 2.1 illustrates the conceptual framework that guides and directs this study.

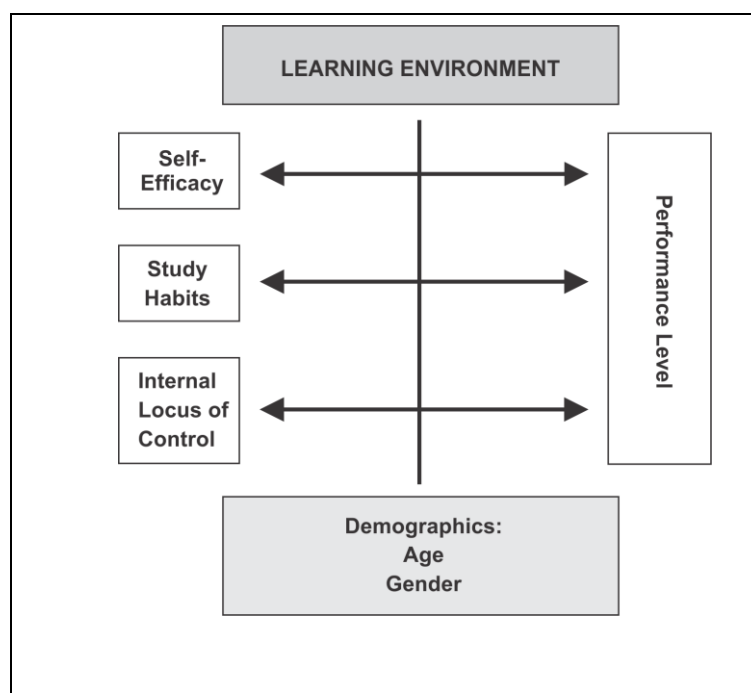


Figure 2.1: Conceptual framework

Figure 2.1 shows that there is a wide interaction between self-efficacy, study habits, locus of control, learning environment and demographic variables (age , gender, school level and residential status) that influence academic performance of secondary school students.

2.2 DEFINITION OF STUDY HABITS

The Advanced Oxford Learners' Dictionary (2000: 354) defines habits as "habituated routines of behaviour that are repeated regularly and tend to occur subconsciously, without direct thinking about them". Habitual behaviours sometimes go unnoticed in persons exhibiting them, because it is often unnecessary to engage in self-analysis when undertaking routine tasks that have been engraved into individuals' thinking structures through deliberate repeated practice (Wrenn & Humber, 1941). For example, some people comfortably read novels in the bus on the way to work while others read and take notes from newspapers as they travel. Habituation is an extremely simple form of learning, in which an organism, after a period of exposure to a stimulus, starts responding to that stimulus in only one way (Malim & Birch, 1998; Fennel, 2011). In the context of this study habits entails student motivation, time management, concentration, consultations, formative testing and preparing for tests

2.3 FORMATION OF STUDY HABITS

Habits form slowly from repetition of behaviours that gratify a certain individual need. For example, when a student's need is to achieve high academic grades, he or she will endeavour to develop habits that point towards achievement of personal goals and objectives. Such a student will be more inclined to solve any new challenge or problem that may arise in the course of learning and develop a study habit that points to the target goal (Arthur & Bena, 2009).

Habit accounts for the greater part of life and living (Wood & Neal, 2007). Whatever the exact proportion may be, the importance of habit is so great that those who care about students' academic welfare cannot afford to neglect the habits that students acquire and utilise in their learning process. While most of our habits are variously learned from childhood, when children get to the high school age, they acquire new sets of academic habits or sharpen the already acquired ones (Wood & Neal, 2007). This happens as children develop an ability to think abstractly (Commons & Richards, 2003). Secondary school students develop ideals, set goals and try to live up to them, and it is the duty of society to see to it that these high school adolescents are accorded the opportunity and stimulation to acquire and develop study habits

and personality traits that favour high academic achievement (Gelatt, 1989; Myers, 2011).

Young adolescents are teachable and trainable, and can easily learn and acquire good study habits necessary for their academic success. Human beings are born without habits but with a potential and predisposition to acquire them from the environments in which they develop as argued by Locke (1996) of the *tabula rasa* fame. Locke (1996) argued that children are born with blank-slate-like brains for the environment to impress on (Olchowski, Foster & Webster-Stratton, 2007).

It is one of the fundamental principles of human conduct that any act that leads to a happy experience or consequence tends to repeat itself. This is just as true of psychological as well as the physical habits. Even when a person attributes a bad experience to an external force, one feels relieved. Habits are behavioural in nature and serve certain purposes at both physical and or psychological level (Domjan, 2003). Formation of habit is based on the consequences of the initial behaviour, that is, whether such consequences were pleasant or not (Reiss, 2004; Berk, 2009; Deci, 2013). Human beings can change habits provided that they have a good reason and intention for doing so. Breaking of bad habits applies the same principle applied in habit formation. Students must be implored to change their non-productive study habits. Whatever it is that students must stop in order to achieve the expected high learning outcomes, must be stopped the instant the behaviour is noticed, and not allowed room and time to take shape and root. The “just this once” mentality is the greatest enemy to the development of good habits; and it is the greatest obstacle to the conquest of bad habits (Freedman, 2009). Students must be trained and encouraged by responsible significant others to take responsibility for and control of their levels of academic achievement and deliberately control the factors associated with such (Kraye & William, 2003).

2.4 DETERMINANTS OF STUDY HABITS

Study choices have consequences. Both internal and external factors may influence study habits. Some of these factors may be physical, psychological, environmental or a combination of all of them. The physical factors may include physical engagement in learning activities while psychological may include the intra-personal forces that control and direct human endeavours and motivation (Sattler, 1988).

Such psychological variables would include locus of control, motivation, and belief in one's ability to perform as expected and desired or self-efficacy. Students who have internal locus of control are more capable of organising successful private studies compared to those with external locus of control. Many factors that may explain the differences in individual performance in academics therefore may be innate, environmental and situational, intervening factors such as situational test demands (Sattler, 1988). Home, school and personal factors may interact to produce success or failure in academic activities (Arasa, 2004). These are the same factors that will determine the kind of study habits an individual student develops as well as his/her self-regulation, organisation and management. Another factor that may influence one's study habits in specific academic areas is gender and gender roles. For example, girls may be called upon to help in the kitchen while boys are either doing their studies or relaxing owing to the double standards applied differently to the boy and girl child, or girls may be protected more against drugs than boys. As a result, gender may be a variable in study habits and academic achievement (Kiragu, 1991). Some girls might hold the traditional belief that women are supposed to be provided for by men in their lives and as a result, shy away from working hard in personal development activities (Fortin, 2005).

The above-mentioned factors may impact academic achievement, especially of the minority or the disadvantaged students who may lack motivation to learn due to various psychosocial conditions and circumstances. The majority of the students perceived by the teachers as incapable are given very little academic attention in terms of help on how to improve their academic status (Rothstein, 2004).

Teachers' and parents' participation in the study activities of children has been found to have positive effects in academic outcomes. Nickerson and Kritsonis (2006) reported that children who were taken to a public library by their parents achieved better grades. The study also found that students whose parents and teachers were directly involved in children's educational success reported easy adoption of effective study habits and knew what courses to take in secondary school to prepare them for tertiary education (Nickerson & Kritsonis, 2006). In addition, students whose parents had little or no involvement in their children's education were unaware of what courses students should take for college entrance. Involvement of family members or other persons significant to the child in the child's education enhances the child's

learning efforts and improves study habits and concentration on academic tasks (Ornstein, Levine & Gutek, 2011).

Concentration is the ability to hold on to an objective task for a considerable duration of time. Studying involves various learning tasks that students should engage in, in or out of class, with or without a teacher. Such tasks include: keen listening, reading, taking notes, completing assignments, group discussions, consulting with teachers and peers, attending lessons, preparing for tests among others. The basic requirement in all these activities is individual student ability to concentrate on learning tasks by avoiding both physical and psychological distractions (House, 2005). For students to be able to perform well academically, they should possess a considerably high level of self-efficacy or strong belief in their ability to successfully perform the relevant requisite tasks as well as feel responsible for behavioural outcomes.

2.5 MOTIVATION

According to Zimmerman (1989), psychologists are of the opinion that every behaviour is motivated and that repeated rewarding of behaviours makes such rewarded behaviours become habits. Zimmerman (1989) suggests the following as some of the prerequisites for achieving an ideal learning state capable of cultivating productive study habits among students:

2.5.1 Building Positive Expectations

In order for students to be successful in their learning, they must develop a sense of positive expectation and confidence about the material they study. To do this, they must first convince themselves that the material will be easy to learn and master and will serve a certain purpose in their lives (Trusty, 2000). The belief developed within oneself about this process will be a key component of how effectively one learns when an individual study session is started. Success attracts success and it is easier to help a successful student to continue succeeding than bring out success from one who has continuously experienced failure; hence, what should be avoided right from the start is failure (Maddux, 2002).

2.5.2 Building a Burning Desire

Developing an underlying burning desire that will keep students studying even when things turn sour or they meet with challenges, will help to boost individual learning experience. The question that should always be at the back of the student's mind is "What will I gain from learning this material?" and the response to this question may either hinder or enhance learning of that material. For this reason, many people read less after completing school because to them the main purpose of reading is passing of an examination which is a school activity.

Determining the gains to be accrued from the subject of study will keep a student pushing forward even when things get a little more difficult or tough to handle than anticipated. The majority of students who fail in academic activities easily give up when they perceive study materials to be tough or find it hard to grasp; neither do they seek assistance (Reivich & Shatté, 2003).

2.5.3 Building Unstoppable Motivation

Motivation may be viewed as the force that propels an organism in the direction of goal oriented behaviour. The crucial question the student has at the back of his mind is how learning a subject will benefit him/her personally in the present and/or in the future (Karla, 2014) where a student is looking at both short and long-term benefits that are directly linked to his needs and wants. This enables a student to build a sense of appreciation for short and long term benefits in academic tasks engaged in.

Anticipation is a central motivating force in everyday life. It is a normal process of imaginative anticipation of, or speculation about, the future (Graham & Weiner, 1996). To enjoy one's life, "one needs a belief in time as a promising medium to do things in; one needs to be able to suffer the pains and pleasures of anticipation and deferral and spend time profitably for time is the only resource that humans have in equal measure" (Phillips, 1994: 47). Dweck (2006) pointed out that without denying individual differences in children's intellects, proper motivation, education, study and practice could bring fundamental changes in intellectual functioning and levels of academic achievement among students.

2.5.4 Organising Study Breaks

'All work and no play make Jack a dull boy' the old adage goes (Wikipedia.Org, 2015). Taking well-organised breaks during study sessions is an important step towards creating smart study habits. Regular breaks are essential and should be incorporated into personal study regimes.

Taking regular and planned study breaks is known to relieve tiredness while improving absorption of the material being studied. This prevents the brain from getting clogged up with trying to absorb a lot of information at one time. The consequences of prolonged study can be stress, procrastination and poor absorption of material thus interfering with memory processes (Dail & Christina, 2004).

The human brain stores absolutely everything that has ever been perceived through the senses: sight, hearing, taste, smell and touch in its long term memory. Yet, most of this information is never correctly schematised into topics and categories that would make it easy to remember and recall or retrieve back to the working memory (Manelis, Hanson & Hanson, 2011). The major benefit of taking study breaks is that they allow the brain time to order and organise the information one is learning into small manageable chunks that can then be effectively located in the brain and easily recalled at a future date as need be (Paul, 2010). The most successful students take short regular breaks in between their study schedules but not long enough to distract their studies.

2.5.5 Study Groups

Study habits may be viewed as constituting consistent practices that students engage in for the purposes of learning either individually or in groups, in class or outside, under supervision or independently (Ciotti, n. d.).

Students, depending on their preferred mode and style of study, may opt to study in groups, or individually. Many educational researchers agree that group study enhances students' performances, both in class discussions, as well as on tests. Hackman (2002) developed a synthetic, research-based model for designing and managing work groups, suggesting that groups are successful when they satisfy individual member needs and develop capabilities for members to be able to perform independently in the future.

Group study pays off because it brings about changes in two ways: it forces students to alter their old ways of thinking and it changes their less effective patterns of study habits and behaviour and especially so when majority of the group members have positive study habits (Gilman & Anderman, 2006). Some of the benefits of group study include:

- Creating a set time for studying;
- Allowing a student to benefit from the knowledge of other students;
- Helping a student to learn material better by discussing it with peers;
- Providing a student with a support system; and
- Infusing more fun in studying than when studying alone.

In a group environment, students are less likely to procrastinate. This is because they are answerable not only to themselves but to other members of the group as well. When students know they have a whole group of students counting on them, they will be more likely to study better either to impress or fulfil obligations to the group especially where the study groups are recognised by the teachers and collectively rewarded for group performance (Schachar, 2003).

Group study also encourages students to explain things aloud, thus speaking to and listening to peers often improves recall ability, or ability to remember information on test day (Hornsey & Hogg, 2000).

Newport (2007) found that students who study with others are also forced to become more organised thus improving their skills to organise and manage independent study. Study means being able to derive meaning from the content being learned or studied. Another benefit of academic group discussion is that the many diverse peer perspectives improve students' chances of anticipating test questions. Group members will always bring up ideas and thoughts individual students would never have otherwise considered. The various views are sure to pay off on test day.

Finally, students find that the benefit of group study reaches far beyond the good results on test day. It will build self-confidence and efficacy that one can utilise to succeed in future. Sharing with peers in small groups may prepare students for speaking to larger groups in the future – or more official groups such as college admission panels or hiring boards.

Study groups of like-minded students who share goals for success have been known to enhance each other's academic success and achievement (Burns & Sinfield, 2003).

However, not all groupings by students studying are beneficial. Some groupings may tend to waste time in discussing matters not relevant to academics therefore failing to achieve the objectives of a study group. This happens mostly where such groups lack proper leadership and commitment to academic tasks. Students' abilities or interests may influence study groupings (Pinto, Marques & Abrams, 2010). Ability grouping, which may be proposed by the teacher, disproportionately and unfairly places marginalised groups at a disadvantage by reducing their opportunities to learn through peer tutoring. Common study habits may form the best basis for formation of study groupings. Groups based on ability may not be productive for ethnic groups or students with comparatively low intellectual capacity or with different family backgrounds (Berten & Van Rossem, 2011).

In America, for example, Nickerson and Kritsonis (2006) found that ethnic background was a contributory factor in academic success. In comparing achievements of Black and Chinese students, it was found that students who studied for longer hours per week, got together with other students to check understanding, and whose families quizzed them on homework, tended to be more successful in their academic work (Schmitt & Klein, 2010).

According to Castle, Deniz and Tortra (2005), students find a study group helpful when they are trying to learn information and concepts and prepare for class discussions and tests. Some of the most important benefits of a study group as observed by students include the following (Crano, 2000).

- A support group can act as a source of motivation and encouragement when a student finds his or her motivation to study is slipping;
- Students who are normally shy to ask questions in class find it easier to do so in a small study group;
- Group spirit makes students more committed to study because cooperation of each member is demanded and no member would like to let the group down;

- Group members will listen and discuss information and concepts during the study sessions. These activities add a strong auditory dimension to students' learning experiences including thought organisation and expression;
- Groups enhance better understanding of concepts learned in class. Different members bring in different dimensions and perspectives of understanding of the concepts learnt in class;
- Students can learn valuable new study habits from the other group members;
- Students can compare class notes with each other for clarification and filling in of gaps;
- Teaching/explaining information and concepts to the other group members will help students to reinforce their mastery of the information and concepts;
- Since studying can sometimes be boring, interacting with the other group members can make studying enjoyable; and
- Group activities naturally build confidence, commitment, time management and dedication in tasks including academic activities.

Peers may also form groups with negative goals, to avoid this, group formation for academic purposes should be guided and group activities monitored by teachers and parents to ensure effectiveness in achievement the goals for which such groups were formed (Chen, 1997).

2.6 LOCUS OF CONTROL AND SELF-EFFICACY

Locus of control and self-efficacy are closely related psychological concepts influencing overt study habits (Cobb-Clarke, Kassenboehmer & Schurer, 2012). Locus of control is the habit of attributing a person's experiences of success or failure to either internal or external forces. It may be the force that determines a student's feeling of responsibility to his levels of achievement in academic endeavours. On the other hand, self-efficacy is a person's belief in his ability to perform given tasks at an expected and satisfying level of achievement. Habits reveal one's personality (Bandura, 2007). Personality may be defined as a dynamic and organised set of characteristics possessed by a person that uniquely influences his or her cognitions, motivations, and behaviour in various situations (Santrock, 2008). Personality plays a very significant role in individual's efforts in achievement motivation. Locus of control and self-efficacy are some of the personality traits

influencing students' academic motivation and performance (Zelenski, Santoro, Whelan, 2012).

2.6.1 Locus of Control

Locus of control entails the forces to which individuals attribute their failures and success. It lies on a continuum between internal and external loci of control.

Rotter (1990) cautions that the extremes of locus of control represent two ends of a continuum, not an either/or typology. The internal locus of control end of the continuum characterises people who tend to attribute most outcomes of events and experiences in their lives to factors within their own control. Those who lean more towards the external end of the continuum attribute most of the outcomes of events and experiences in their lives to factors beyond their control (*ibid.*). However, the ends of the continuum are not exclusive. For example, students with high internal locus of control may believe that most of their grades were achieved through their own abilities and efforts whereas those with low internal locus of control have a tendency to believe that most of their grades are the result of good or bad luck, or the quality of examinations, e.g. teachers designing bad tests or grading capriciously. As a result, those with external locus of control are less likely to expect that their own efforts will result in success and are therefore less likely to work hard for higher grades. This may have obvious implications for differences in achievement motivation between those tending towards either internal or external ends of the locus of control continuum. This suggests that those with strong internal locus of control have a direct link with higher levels of achievement motivation (Rohaty, Marwan, Bataineh & Ishak, 2009). Due to their locating control outside themselves, the externally controlled tend to feel they have less control over their fate, termed 'learned helplessness' (Seligman, 1990). Self-helplessness is a situation where a student becomes so accustomed to failure such that he feels completely unable to change the situation even where there are many options to choose from. Seligman (1975) pointed out that people with an external locus of control tend to be more stressed and prone to clinical depression and chronic failure and may be less responsive to encouragement to work hard for improvement of their performance and achievement (Judge, Erez, Bono & Thoresen, 2002). Adolescence also brings with it its own challenges for secondary school students. Weiner (1986)

and Rotter (1966) pointed out that it is easier to control factors within than outside oneself.

2.6.2 Theories of Self-Efficacy

Ormrod (2006) described self-efficacy as the belief that one is capable of performing in a certain manner to attain certain goals. It is a belief that one has the capacity to execute the courses of action required to manage prospective situations. It has also been described as the sense of belief that one's actions have an effect on the environment (Steinberg, 1999). It is a person's judgment of his or her capabilities in successfully performing a task based on mastery.

Self-efficacy has its foundations in Social Cognitive Theory (Bandura, 1997) where Bandura painted a portrait of human behaviour and motivation in which individuals' self-beliefs are critical elements. Of all the beliefs that people hold about themselves and that affect their day-to-day functioning, and standing at the core of social cognitive theory, are self-efficacy beliefs, which can be defined as the judgments that individuals hold about their capabilities to learn or to perform courses of action at designated levels (Pajares, 2009). In essence, self-efficacy beliefs are the self-perceptions that individuals hold about their capabilities.

According to social cognitive theory, self-efficacy beliefs provide the foundation for human motivation, well-being, and personal accomplishment: Bandura (1997) argued that unless people believe that their actions can produce the outcomes they desire, they have little incentive to act or to persevere in the face of difficulties and give up easily when they encounter challenges. These self-perceptions touch virtually every aspect of people's lives.

“Whether they think productively, self-debilitatingly, pessimistically or optimistically; how well they motivate themselves and persevere in the face of adversity; their vulnerability to stress and depression; and the life choices they make. Self-efficacy is also a critical determinant of the self-regulatory practices in which individuals engage as they go about the important task of self-correcting their actions and cognitions to adapt their behaviour to prevailing task situation” (Bandura, 2007: 641).

Self-efficacy beliefs create a surge of confidence in an individual such that he or she becomes aware of the expected consequences of behavior. Self-efficacious people will not anticipate a success they are not capable of attaining through their deliberate behaviour. To such students, good academic grades would be the outcome of smart study work (Seigle, 2000).

Self-efficacy beliefs should not be confused with outcome expectations. Typically, self-efficacy beliefs help foster the right attitude and activity towards the outcome one expects. Confident individuals anticipate, yearn and work for successful outcomes. Students, confident in their academic skills, expect high scores in examinations and seek to improve the quality of their work to reap academic benefits (Schunk & Hanson, 1989). The opposite is true of those who lack confidence. Students who lack confidence in their academic skills envision a low grade even before they begin an exam or enroll in a course (Pajares, 2002). To gain confidence, students need educational guidance, counseling and mentorship (Heyden, 2011).

When self-efficacy belief and outcome expectation differ, the self-efficacy belief is more likely to determine the behaviour (Pajares, 2009). Students may well realise that strong academic skills are essential for obtaining a good academic grade scores and being admitted to the college course of their choice, and this, in turn, may ensure a comfortable future lifestyle. But if students lack confidence in their academic capabilities, they may well shy away from challenging courses and tasks and may not set future professional or academic goals (Burns & Sinfield, 2012).

Self-efficacy is both a personal and social construct because individuals operate both collectively as well as individually. Collective systems develop a sense of collective efficacy where a group shares a belief in its capability to attain goals and accomplish desired tasks (Seligman, 1990). For example, schools develop collective beliefs about the capability of their students to learn, of their teachers to teach and otherwise enhance the lives of their students, and of their administrators and policy makers to create environments conducive to these tasks. Organisations and institutions with a strong sense of collective efficacy exercise empowering and vitalising influences on their constituents, and these effects are palpable and evident in individual members (Popham, 2010).

2.6.2.1 Social cognitive theory (SCT)

Bandura and Walters (1963) broadened the Social Learning Theory proposed by Miller and Dollard (1941) adding principles of observational learning and vicarious reinforcement. The theory then become known as Social Cognitive Theory (SCT). As can be observed from Figure 2.2 below, social cognitive theory views intellectual performance as a tripartite interaction between behavioural, personal and environmental factors. Student mentors such as teachers and parents should provide students with challenging tasks and meaningful activities that can be mastered, and chaperone these efforts with support and encouragement to help ensure the development of a robust sense of self-confidence and of self-worth (Silvers, Liliefeld & Lapraire, 2011). Beliefs of personal competence and of self-worth ultimately become habits of thinking that are developed like any habit of conduct. Teachers and parents are influential in helping learners to develop the 'self-belief habits' that will serve them throughout their lives directing their learning behaviours (Patrick, Hisley & Kempler, 2000).

Obegi, (2014) posits that a teacher's influence follows students all the days of their lives like a large shadow that shapes thoughts and actions. Every successful or unsuccessful person you see in society went through a teacher's hands. Teachers are moulders, potters and shapers of destinies.

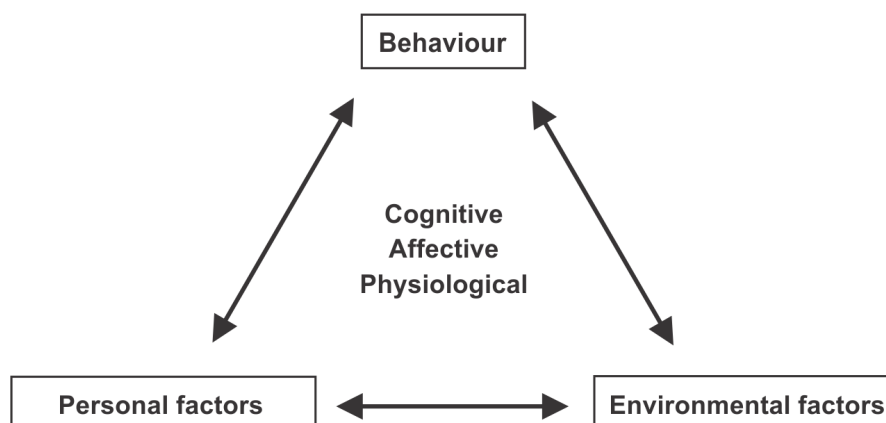


Figure 2.2: Social Cognitive Theory

Source: Pajares (2002)

From the discussion above, it can be seen that motivation at school affects students' performance and achievement and is therefore of great importance and concern in the realisation of educational goals. The promotion of a culture of effective learning and teaching for ultimate high achievement in national examinations should be emphasised by using appropriate instructional and learning strategies and models. Motivation is influenced by both intrinsic and extrinsic factors both of which should be of concern in learning situations.

2.6.2.2 Learning behaviour

Learning is a continuous process demonstrated by relatively permanent change in behaviour as a result of experiences.

SCT is relevant to healthy communication, and learning is entrenched in effective communication. First, the theory deals with cognitive, emotional aspects and aspects of behaviour for understanding behavioural change (Wallace, Ross & Anderson, 2007). It also explains how people acquire and maintain certain behavioural patterns, while also providing the basis for intervention strategies (Bandura, 1997). Evaluating behavioural change depends on such factors as environment, people and behaviour. SCT provides a framework for designing, implementing and evaluating learning programmes.

Environment refers to the factors that can affect a person's behaviour in the social and physical environments. Social environment includes family members, friends and colleagues. Physical environment may involve the size of a room, the ambient temperature or the availability of certain materials and equipment. Environment and situation provide the framework for understanding behaviour (Brown, 2001). The situation refers to the cognitive or mental representations of the environment that may affect a person's behaviour (Glanz, Rimer & Lewis, 2002).

The three factors are constantly influencing each other. Behaviour is not simply the result of the environment and the person, just as the environment is not simply the result of the person and behaviour (Harmon-Jones & Winkielman, 2007). The environment provides models for behaviour. Observational learning occurs when a person watches the actions of another person and the reinforcements that the person receives (Bandura, 1997). The concept of behaviour can be viewed in many

ways. Behavioural capability means that if a person is to perform satisfactorily, he must know what the behaviour is and have the skills to perform it. The following are some of the concepts of the social cognitive theory (Glanz, *et al.*, 2002).

- Environment: Factors physically external to the person; Provides opportunities and social support.
- Situation: Perception of the environment; correct misperceptions and promote healthful forms.
- Behavioural capability: Knowledge and skill to perform a given behaviour; promote mastery learning through skills training.
- Expectations: Anticipatory outcomes of behaviour; Model positive outcomes of healthful behaviour.
- Expectancies: The values that the person places on a given outcome, incentives; present outcomes of change that have functional meaning.
- Self-control: Personal regulation of goal-directed behaviour or performance; provide opportunities for self-monitoring, goal setting, problem solving, and self-reward.
- Observational learning: Behavioural acquisition that occurs by watching the actions and outcomes of others' behaviour; include credible role models of the targeted behaviour.
- Reinforcements: Responses to a person's behaviour that increase or decrease the likelihood of re occurrence; promote self-initiated rewards and incentives.
- Self-efficacy: The person's confidence in performing a particular behaviour; approach behavioural change in small steps to ensure success.
- Emotional coping responses: Strategies or tactics that are used by a person to deal with emotional stimuli; provide training in problem solving and stress management.
- Reciprocal determinism: The dynamic interaction of the person, the behaviour, and the environment in which the behaviour is performed; consider multiple avenues to behavioural change, including environmental, skill, and personal change.

Learning is thus an interactive process involving the physical, social and psychological environmental situations (Malle, 2004).

According to Kirsch, Lynn, Vigorito and Miller (2004), citing Skinner's classical conditioning experiments, presenting meat to a dog after ringing a bell in classical conditioning caused the dog to associate the bell with meat and thereafter the bell alone elicited salivation as a conditioned response by a conditioned stimulus. The dog had effectively learned to associate the bell with food. Similarly if students are conditioned to directly associate good study habits with good grades or desirable learning outcomes, they will be more likely to continue working hard even when, for one reason or the other, one occasionally fails to achieve the desired level of performance (Terry, 2006). The dog in classical experiment continued to salivate upon hearing the sound of a bell or any other closely related sound even when presentation of meat did not follow the sound of the bell. Even after the conditioned behaviour had become extinct, future spontaneous recovery of the conditioned behaviour was observed. Skinner, on the other hand, conditioned his experimental animals to access food instrumentally by deliberately pressing the lever in his experimental design box (Bouton, 2007). Once the animals discovered and appreciated the association between pressing on the lever and the provision of food, it became easier to access food whenever the caged animal was hungry. The discovery of the magic lever ended the animal's random struggles in the cage because the caged animal needed only to, deliberately, press on the lever whenever it required food. The reward or punishment would determine whether the behaviour would be repeated or shunned in future. All learned behaviour is subject to this regardless of whether the actions were deliberate or accidental (Carlson, 2010). Learning or even accidentally discovering the behaviours and habits that lead to achievement of the desired level of academic performance, students will more often than not unreservedly engage in them freely and deliberately without wasting time on random trial and error engagements and with minimal conscious mental efforts with ever renewed motivation (Dayan, Kakade & Montague, 2000).

2.6.3 Sources of Self-Efficacy Beliefs

Pajares (2009: n. p.) observed that "Individuals form their self-efficacy beliefs by interpreting information primarily from four sources: mastery experience, vicarious experience, social persuasions, and physiological reactions. For most people, the most influential source is the interpreted result of one's own performance, or mastery experience". Individual's perceptions and interpretations of the effects of their

actions have great influence on their efficacy beliefs. Success raises self-efficacy while failure lowers it. For example, students who perform well in mathematics tests and earn high grades in mathematics classes develop confidence in their mathematics capabilities and continue performing well. This sense of efficacy helps ensure that such students will enroll in subsequent mathematics-related classes, approach mathematics tasks with serenity, and increase their efforts when a difficulty arises (Zimmerman, Bandura & Martinez-pons, 1992).

The majority of adolescents form their self-efficacy vicariously, that is, by observing how successful or unsuccessful their peers are in their attempted tasks. Young people tend to believe that what their peers can achieve they can also. Observing the successes and failures of peers perceived as similar in capability contributes to beliefs in one's own capabilities. If the person achieves success in these imitated tasks, his self-efficacy is improved and he is likely to achieve much more in future (McLeod, 2010). Vicarious experience also involves the social comparisons that individuals make with each other. These comparisons, along with peer modeling, can be powerful influences on self-efficacy beliefs. In situations in which young people have little experience with which to form a judgment of their competence in a particular area, peer models are especially useful (Hughes, 2011).

Self-efficacy beliefs are also influenced by the verbal messages and social persuasions individuals receive from others, whether these are intentional or accidental. This makes what significant others such as teachers and parents tell the student with reference to performance will have a serious effect on the student's self-efficacy and future performance (Cialdini, 2007). These messages can help one to exert the extra effort and persistence required to succeed, resulting in the continued development of skills and of personal efficacy. Such persuasions have ability to make or break a student's academic career by moderating students' perceptions, attitudes and behaviour towards achievement in education. Effective persuaders encourage setting and pursuance of achievable goals. Just as positive persuasions may work to encourage and empower, negative persuasions can work to defeat and weaken self-efficacy beliefs (Pajares, 2002). Persuasive communication attempts to influence people's beliefs, attitudes, intentions, motivations and behaviours. It is usually easier to weaken self-efficacy beliefs through negative comments than to strengthen such beliefs through positive motivation (Seiter & Gass, 2010).

Physiological and emotional states influence self-efficacy with positive emotions affecting it positively while negative ones diminish it. All this depends on individual interpretation of the emotion (Spector, 2008). Bressler, Bressler and Bressler (2010) observed that despite the level of intelligence, more hopeful and optimistic students achieved higher levels of academic excellence.

2.6.4 Motivational Consequences of Self-Efficacy Beliefs

Self-efficacy beliefs can enhance human accomplishment by influencing the way people think, act and pursue goals. People will generally not set and pursue goals in areas where they feel less competent but will be strongly attracted to areas where they feel more competent. Unless people believe that their actions will yield the desired consequences or outcomes, they will have little incentive to engage in those actions, especially in the face of unexpected difficulties (Dweck, 2006). Among the many factors that operate to influence task behaviour, the core ones are rooted in the belief that one has the capacity and capability to successfully accomplish that behavioural task. Reivich and Shatté (2003) argued that people need resilience, which is a crucial factor in the determination of how high one can rise above threats, challenges and other obstacles such as are encountered by students in their schooling endeavours, for example, lack of school fees or poor learning environments, developmental challenges among others.

Highly competent and efficacious people tend to approach difficult tasks as challenges to be mastered and obstacles to be tackled rather than threats to be avoided. This maintains their high levels of intrinsic motivation and engrossment in objective activities commensurate with their goals sustaining interest even in the face of failure (Wiese & Freund, 2005).

Human motivation, cognition, and behaviour are interrelated and influenced mostly by an individual's level of self-efficacy and experiences of success or failure in personal engagements. Successes enhance self-efficacy while failures undermine it (Pajares, 2009). The success or failure that people experience naturally influences the many decisions they must make. But people must invariably interpret the levels of their attainments, on the basis of their perceived capacity and effort. For example, two students who receive a B grade on an important mathematics exam will perceive the achievement differently, although in itself, a B has no inherent meaning, and

certainly no causal properties. However, a student accustomed to receiving As in math class and who worked hard throughout the term and studied for the exam, will view the B differently from a student accustomed to receiving Cs and who worked equally hard to score a B. For the former, the B will be a distress; while for the latter, the B is likely to be received with elation. The student accustomed to receiving As is likely to have bruised self-efficacy; the C-acquainted student is sure to have boosted self-efficacy. This points to the need for teachers and parents to help learners set achievable goals and attain meaningful success as often as possible and avoid failure or learn to deal with it safely and effectively (Trusty, 2000).

2.6.5 Self-Efficacy Beliefs and Academic Attainment

Elias and Macdonald (2007) aver that self-efficacy has been especially prominent in educational research, where scholars have reported that, regardless of previous achievement or ability, self-efficacious students work harder, persist longer, persevere more in the face of adversity, have greater optimism and lower anxiety, and achieve more. Entwisle, Alexander and Olson (2005) observed that children are launched into achievement trajectories on or at times before the start of the formal schooling and the pattern of these trajectories remains highly stable over childhood and thereafter. This points to the need for stimulating environments for early childhood growth, development and education.

In psychology, intelligence, viewed by Wechsler (1944: 3) as “the aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his/her environment”, has typically been acknowledged as the most powerful cognitive predictor of achievement. In testing the joint contribution of self-efficacy and intelligence to the prediction of achievement, it has been found that students' self-efficacy beliefs determine the effectiveness of intelligence in affecting achievement (Felder & Brent, 2005). Self-efficacy is a critical determinant of the life choices that students make and of the courses of action they pursue. Usually, students engage in activities in which they feel competent and avoid those in which they do not. Doing so is particularly critical at the high school and college levels, where young people progressively have more academic options (Demetriou & Kazi, 2006; Oyserman & Destin, 2010). Academic successes may be more a function of self-efficacy than level of intelligence.

Students' self-efficacy enhances self-regulatory strategies at differing levels of ability which in turn improves students' memory performance by enhancing persistence without suffering unnecessary stress that may impair memory and learning (Schwabe & Wolf, 2010).

In general, self-efficacy beliefs and behaviour changes and outcomes are thought to be highly correlated and self-efficacy is viewed as an excellent predictor of achievement behaviour which in turn has implications for academic performance (Gregory, John & Thomas, 1978). The depth of this correlational support prompted Graham and Weiner (1996) to conclude that, particularly in psychology and education, self-efficacy may be a more consistent predictor of behavioural outcomes than other motivational constructs. Motivation may be viewed as the enabler for academic success (Linnenbrink & Pintrich, 2002).

2.6.6 Effects of Self-Efficacy on Human Function

Self-efficacy has serious effects on human function and endeavours and especially choices on behaviour.

2.6.6.1 Choices regarding behaviour

Students will be more inclined to take on a task if they believe they can succeed or that their efforts will yield expected positive results. People generally avoid tasks where their self-efficacy is low, but will promptly engage in tasks where their self-efficacy is high. This could be the reason why a student will score a high grade in one subject and very low scores in all other subjects (Gardener, 2006). For example, some students seem to enjoy non-academic (extra-curricular) activities because they feel that that is where they are best suited and most likely to express their best ability and achieve success. Unfortunately, rarely do achievements in non-academic areas gain significant recognition in the Kenyan education system and some other developing nations (Dennin, 2014). Kenya is an academically-oriented nation where non-academic achievements in school do not count for much when quantification of success and self-worth is done. The student's extracurricular achievements such as in games, sports or athletics are accorded very little value, if any, after school especially when looking for formal employment (Greenfield, 2012).

Disadvantageously, people with a self-efficacy significantly beyond their actual ability often overestimate their ability to complete tasks, which can easily lead to difficulties. Some very capable students may fail to perform as expected due to overconfidence (Gino, Sharek & Moore, 2011). A confident student believes that his hard work will yield academic success while an overconfident one feels that success is automatic for him or her. On the other hand, people with a self-efficacy significantly lower than their ability are unlikely to grow and expand their skills. Research shows that the optimum level of self-efficacy is a little above ability, which encourages people to tackle challenging tasks and gain valuable experience (Vancouver, Thompson, Tischner & Putka, 2002).

People with high self-efficacy in a task are more likely to make more of an effort, and persist longer, than those with low efficacy. The stronger the self-efficacy or mastery expectations, the more active and focussed personal efforts will be (Cofer, 1964). On the other hand, acknowledged low self-efficacy provides an incentive to learn more about the subject among people who are determined and committed to improve their performance and ultimate achievement. As a result, someone with a high self-efficacy may fail to prepare sufficiently for a task due to overconfidence and risk failure, while the one with low self-efficacy acknowledges his weakness and works harder and smarter through well-balanced motivation leading to successful school work (Singh, 2011).

2.6.6.2 Self-regulation

Self-regulation may be viewed as an integrated learning process, consisting of the development of a set of constructive behaviours that direct one's learning activities (Dweck, 2002). These processes are planned and adapted to support the pursuit of personal goals in changing learning environments and includes planning, monitoring and evaluating personal progress against a self-defined standard. However, self-regulation is a skill to be trained and learned (Perry, Phillips & Hutchinson, 2006). Self-regulated learners know their academic strengths and weaknesses and are capable of planning and applying appropriate strategies in day to day challenges of academic tasks. These learners hold incremental beliefs about intelligence (as opposed to fixed views of intelligence) and attribute their successes or failures to factors which they can control such as personal effort expended on a task or

effective use of strategies (Dweck & Leggett, 1988; Dweck, 2002). Students who are self-regulated have been found to believe in seizing opportunities to take on challenging tasks, practise their learning, develop a deep understanding of subject matter, and exert effort that will give rise to academic success (Perry, *et al.*, 2006). In part, these characteristics may help to explain why self-regulated learners usually exhibit a high sense of self-efficacy and engagement (Boekaerts, Musso & Cascallar, 2012). In educational psychology literature, researchers have linked these characteristics to success in and beyond school and passing of national examinations (Pintrich, 2000).

Self-regulation from the social cognitive perspective looks at the triadic interaction between the person (e.g. beliefs about success), personal behaviour (e.g. engaging in academic tasks), and the environment (e.g. feedback from a teacher, parent or guardian). According to Schunk and Zimmerman (2008), some of the important characteristics of self-regulated learning include:

- self-observation (monitoring one's activities);
- self-judgment (self-evaluation of one's performance); and
- self-reactions (reactions to performance outcomes).

To the extent that a student accurately reflects on his progress toward a learning goal, and appropriately adjusts his actions to maximise performance, he has effectively self-regulated. During a students' school career guidance, the primary goal of teachers is to produce self-regulated learners by using such theories as the Information Processing Model. This model involves acquisition of information from the environment, storing it in the long-term memory which the learner can retrieve upon demand and apply to tasks, thus becoming a self-regulated and efficacious learner (Perry, *et al.*, 2006).

2.7 THOUGHT PATTERNS AND SELF-EFFICACY

Human beings are controlled by their own thoughts and perceptions about situations and circumstances they find themselves in. Naturally, the circumstances people find themselves in are neutral but affect different people differently depending on their perceptions and thoughts about such situations and circumstances (Luis, 2008). The level of self-efficacy a person possesses makes him perceive situations as

simple or more difficult than they really are, resulting in poor task planning as well as increased stress, personal doubts and procrastination in tasks, and eventual stagnation. Observational evidence shows that people become erratic and unpredictable when engaging in a task in which they have low self-efficacy or feel less capable of (Zajacova, Lynch, & Espenshade, 2005). On the other hand, people with high self-efficacy or perceiving themselves to be highly capable often take a wider overview of a task in order to take the best route of action with the necessary courage and determination. People with high self-efficacy view obstacles as challenges to be overcome rather than threats to flee from. Self-efficacy also affects how people respond to failure. For example, a student with a high self-efficacy will attribute low achievement to external factors such as poorly set examinations; where as a student with low self-efficacy will attribute the same to low personal ability (Luszczynska, Gutierrez & Schwarzer, 2005). In this concept, a student with high self-efficacy in regard to mathematics may attribute a poor result to a harder than usual test, feeling sick, lack of effort or insufficient preparation all of which are temporary while ability is a more permanent attribute. A person with a low self-efficacy will attribute the result to poor personal ability in mathematics (Stevens, Olivarez, Lan & Tallent-Runnels, 2004).

Some of the factors affecting the sense of self-efficacy as proposed by Bandura (1986) are discussed below.

2.7.1 Experience

"Mastery experience" is the most important factor deciding a person's self-efficacy. In other words success raises self-efficacy, while failure lowers it. Learners should be helped to achieve success in their academic and other activities as often as possible. The compliments given to students based on their performance should be real, genuine and meaningful (Kolb, 1984).

2.7.2 Modelling "Vicarious Experience"

"If others can do it, I can do it as well." This is a process of comparison between oneself and someone else perceived to be of an equivalent ability. Peer counselling and tutoring is more effective than otherwise. Age mates have similar challenges and can use similar coping mechanisms. In modelling, the more the identification

one has with the model, the better the vicarious experience. Although not as influential as experience, modelling is a powerful influence when a person is particularly unsure of himself (Silver, 2012).

2.7.3 Social persuasions

Social persuasions relate to either encouragement or discouragement. These can have a strong influence. Most people remember times where something said to them significantly altered their confidence. Persuasion is different from criticism because the former dwells on what could have been done differently to get more desirable results or outcomes. Positive persuasions increase self-efficacy while negative persuasions decrease it. When commenting on learners' performance, teachers and parents should be very careful to consider the effect their comments are likely to have on the learners' level of confidence (Seigle, 2000). Every comment should be aimed at persuading the learner positively.

2.7.4 Physiological Factors

Such factors include fear, anxiety, distress, aches and shakes. Physiological responses to stressful situations affect people with different levels of self-efficacy differently in handling and dealing with situations that elicited them. For example, excessive exam anxiety may lower the performance of a candidate with low self-efficacy and not affect one with high self-efficacy. In the same way, if a person panics before public speaking, those with low self-efficacy may take this as a sign of their own inability to speak to an audience, thus decreasing their self-efficacy and disabling the person further, while those with high self-efficacy are likely to interpret such physiological signs as normal and common in such situations and unrelated to his actual ability in public speaking. Thus, it is the person's belief in the implications of his physiological response to situations that alters his self-efficacy and determines his success, rather than the responses per se (Luis, 2008).

2.8 EFFECTIVE STUDY HABITS

An effective study habit is one that easily yields the expected level of learning outcomes or performance or helps the student achieve his/her academic goals.

Students' study habits are a major concern for teachers and parents. These stakeholders often complain about the study habits of students and their wish would be to be able to help such students develop high performance-friendly study habits that lead to improvement in their study skills, behaviours and patterns (East African Standard, 2010).

Although the psychology of individual differences recognises the fact that no two people can be exactly the same, and that what works for one student may not work for another, there are some general study techniques that cut across the general student population and produce good results (De la Fuente, Zapata, Martínez-Vicente, Sander & Cardelle-Elawar, 2014).

Poor study habits lead to low performance in school and regrets over wasted time in future. All students know the levels of achievement they want, but the majority shy away from working equally hard towards their desired academic achievement levels (Marianak & Gambrell, 2008).

To avoid continued failure and achieve progressive success in school, failing students should be guided on how to change their study methods and habits as well as develop performance friendly self-efficacy and locus of control. What brings about change in academic achievement is not students' desire to study, but actual studying, and, in the process, the student acquires the study habits he needs to succeed in academics. Karani (2010) argued that successful students prepare and use study schedules and adapt to their study environments as regards what, when, how and when to study.

2.8.1 Developing Study Strategies

Developing effective study strategies requires creative thinking skills. Although people have thinking skills, only a few use them effectively. Effective thinking skills must be built up over a period of time. Effective thinking sees possibilities where ineffective thinking sees only dead-ends (McGregor & Elliot, 2002). It is important for students to develop effective thinking habits. In relation to studying, effective thinking implies a habit of asking oneself questions in the process of studying for the purposes of self-monitoring and appraisal (Demetriou, 1998).

2.8.2 Deciding on Study Approaches

Bransford, Brown and Cocking (2000) suggested the following practices for effective study habits:

- Approaching studies with a positive attitude;
- Arranging study schedules to eliminate distractions;
- Selecting reasonable chunks of material to study at a time;
- Writing down questions as one reads through a material to be answered at the end of the study session;
- Marking any information not well understood during the study session;
- Evaluating the knowledge acquired after a study chunk through self-administered tests;
- Putting down a summary of what has been understood from the study session;
- Reading purposefully;
- Taking meaningful notes during class and private reading and reviewing them constantly until the concepts involved are well mastered and committed into memory; and
- Always asking for assistance whenever challenges are encountered in study materials and activities.

Education Corner (n.d.) pointed out that successful students possess and utilise the following study habits even during their leisure time:

- Study in small chunks at time;
- Plan specific times for studying;
- Set specific goals for their study times;
- Start studying when planned;
- Work on the assignment they find most difficult first;
- Review their class notes before beginning an assignment;
- Tell their friends not to visit or call them during study times;
- Call another student when they have difficulty with an assignment;
- Review their schoolwork during free time and over the weekend;
- Find opportunities to make academic consultations with the teacher;
- Establish a study zone and routine in and out of school;

- Conquer procrastination and do not postpone what could be done today to tomorrow;
- Write good, meaningful and easy to understand notes;
- Complete and submit assignments in time; and
- Prepare well for the tests and examinations including continuous assessment tests.

2.8.3 Setting Study Goals and Objectives

Setting smart study goals is always the place to begin any task in mastering any subject area and setting effective goals and objectives. Every student should be able to set academic goals that are specific, measurable, attainable, realistic and time-bound.

Ambler (2012) opined that appropriately set study goals should possess the following characteristics:

- Be specific and within the learner's skill and ability. Knowledge of the students' strengths and weaknesses will enable teachers and parents to help in the setting of goals that can be accomplished easily;
- Be measurable. It is important to be able to measure progress toward a goal and especially to recognise when a student has accomplished a goal or its approximations. Failure to monitor progress toward a goal may result in effort that is misdirected and wasted;
- Be achievable i.e. having a reasonable probability of being achieved as planned;
- Be realistic i.e. flexible enough to accommodate change or adjustments should things do not go as anticipated and
- Be time-bound. Any activity should have time limits e.g. secondary school in Kenya is a four-year programme.

Other than when working as part of a group, accomplishment of a personal goal should not depend on other students. While it is easy for individual students to control what they do, controlling what others do may not be possible. This is what makes internal locus of control crucial in achievement of personal goals (Cohen & Garcia, 2008).

Ability to set effective individual goals is vital for academic success. However, it helps to work with parents, teachers and counsellors to be able to formulate reasonable academic goals and objectives (Geldard, 2004). This is because the student will require the assistance of those significant others towards his goal achieving process.

Following on from this, a student must also put into place a rewards system that will help in creating a considerable level of motivation towards achievement of individual academic objectives (Malle, 2004). A student should reward himself each time he moves a step in the right direction towards attainment of personal academic goals and objectives. This involves self-reinforcement and rewarding of personal study achievements. Significant others should also reinforce practice of good study habits and resultant improvements in students' academic performance (Schunk & Hanson, 1989).

2.8.4 Reinforcement

Reinforcement is important in the behaviour forming process (Shanks, 2010). Self-reinforcement is an incentive that an individual gives himself as self-appreciation for an achievement in studies or accomplishing a specific task. It raises the probability of future repetition of the reinforced behaviour. People need not to be reinforced directly to form behaviour but they can learn the behaviour from witnessing such a behaviour reinforced in other people of similar status. Such was the perspective advanced in vicarious learning theory (Bandura, 1977). Bandura singled out identification and imitation as powerful motives in behaviour formation. For example, if a pupil has special regard for a particular teacher, he will work hard in that teacher's subject for two reasons: first, to please and receive the approval of the teacher; and second, in order to identify with the teacher.

According to Wallace, Ross, Davies and Anderson (2007), behaviours that are adequately and effectively reinforced either intrinsically or extrinsically, tend to increase in intensity and are likely to develop into habits with time and practice. Students should be encouraged to study and reinforce their learning through self-assessment and evaluation on achievement of set goals and objectives. Parents, teachers and significant others should effectively reinforce achievement of students' goals (Slater, 2004). However, care should be taken otherwise students will

associate studies with external rewards thus undermining the main purpose of studying, namely the acquisition of knowledge and skills. Ordinary students will perceive failure in examinations as punishment enough to make them address their shortcomings in study habits (Brodish & Devine, 2009).

2.8.5 Selecting a Study Environment

Deciding where to study can be just as important as how much or how hard one studies. The environment one chooses can determine one's mood, comfort level, and the efficiency with which one studies. Study environment involves not only the physical environment but the psychological environment as well (Sattler, 1988). Both these environments affect the quality of study a student engages in as well as its outcomes. A personal sense of wholeness is necessary for adequate academic inputs and achievement of expected outcomes. The environment should have the required resources and be free from all forms of distraction (Western Carolina University, 2015).

Study environments are vital for achieving study objectives so should be selected wisely. Learning environments have significant effects on study habits and outcomes. High performing students take time to arrange and organise their study environments. Study environments should be free from stress-causing agents. These could be physical objects, sounds, odours and anything else that distracts the course of study or causes feelings of stress and uneasiness. The environment must be authentically pleasing and enhance personal learning style, be comfortable and free from all possible distractive elements. Study environments should be well organised to enhance development and practice of effective study habits. Students' concentration is very important for effective studies and needs to be cultivated and improved (Bucks County Community College, 2011).

2.8.6 Improving Students' Concentration

Many students have difficulty concentrating while studying yet this is essential to doing well in class and on tests.

Researchers in education have pointed out the following as some of the ways in which students can improve their concentration (Clark, 2005):

- Studying in a quiet place that is free from all forms of distractions and interruptions;
- Trying to create a space designed solely for studying;
- Making a study schedule that shows what tasks the student needs to accomplish including time schedules. This will provide the structure needed for effective studying;
- Trying to study at the time of day when the student works best. For example, some people work well early in the morning, others late at night. Individuals know what works best for them;
- Making sure one is not tired and/or hungry when going to study. Otherwise, lack of adequate strength interferes with concentration. Physical fitness is also emphasised; and
- Doing only one task at a time. Concentration means focusing on small sub-tasks until the whole task is fully accomplished.

Breaking down of large tasks into series of smaller tasks prevents feeling overwhelmed and unable to maintain concentration. Task analysis revolves around the concept of how a task is broken down and accomplished in its smaller components until the entire task is done (Schrager, Shipman & Shalin, 2000). For effective study, a student requires a relaxed mind, sustainable interest in the subject of study and well-organised breaks between chunks of study (HowtoStudy.com, n.d.). Well-organised, planned and programmed breaks aid concentration by allowing the brain time to relax and to organise the information already gathered.

Studying without concentration will never yield any good outcomes because learning has a lot to do with memory. Lack of concentration impairs memory and this is what happens when students are forced to attend study sessions against their will in order to be in line with schools' programmed and compulsory routine. Students will appear to be studying while no learning is taking place for lack of concentration.

Studying without concentration as students are likely to when all they want is to comply with compulsory school routine is not effective and may not yield the desired results. Time spent on an academic tasks and doing the correct things determines how much a student achieves in that particular task (Stebbins, 2012).

It has been found that students who spend the most time on school assignments and studying, with some discipline in terms of curfews imposed by parents, as opposed to watching television, playing a sport or on the phone, achieve greater academic success (Hofer, 2010).

2.9 INDIVIDUAL LEARNING STYLES

A learning style is an individual's preferred way of attending to academic tasks. When an instructor's style matches a student's learning style, that student typically experiences greater satisfaction and a more positive attitude toward the course (Powell, 2008).

Successful students know their learning styles and apply them whenever they engage in studies. Students learn in many ways, like seeing, hearing, and experiencing things first hand. Jackson (2005) suggested various learning styles and their characteristics and proposed that students may need to consult a professional or counsellor for advice on learning styles. Table 2.1 below presents the basic characteristics of visual, auditory and kinaesthetic learners whose knowledge of which teachers and students would use to improve learning (Gilakjani, 2011).

It is important for students and teachers to be aware of the traits and characteristics of visual, auditory and kinaesthetic learners. This would help teachers and students in coming up with relevant instructional and study methods for effective learning and teaching experiences with students using different basic learning modes (Powell, 2008).

Table 2.1: Basic characteristics of students with different learning modalities

Visual Learner	Auditory learner	Kinaesthetic Learner
<ul style="list-style-type: none"> Needs quiet study time. Good at spelling but forgets names. Thinks awhile before understanding lecture. Has a good spelling skill. Likes colours and fashion. 	<ul style="list-style-type: none"> Likes to read to self out loud. Is not afraid to speak in class. Likes oral reports. Is good at explaining. Remembers names. 	<ul style="list-style-type: none"> Is good at sports. Can't sit still for long. Is not great at spelling. Does not have great handwriting. Likes laboratory activities Studies with loud music

Visual Learner	Auditory learner	Kinaesthetic Learner
<ul style="list-style-type: none"> • Understands/likes charts. • Is good with nonverbal language. 	<ul style="list-style-type: none"> • Notices sound effects in movies. • Enjoys music. • Is good at grammar and foreign language. • Reads slowly. • Follows verbal directions well. • Can't keep quiet for long periods. • Enjoys acting, being on stage. • Is good in study groups. 	<ul style="list-style-type: none"> • on. • Likes adventure books movies. • Likes role-playing. • Takes breaks when studying. • Builds models. • Is involved in martial arts, dance. • Is fidgety during lectures.

Adapted from Powell (2008)

Table 2.1 shows that students who are not very sure of their dominant learning style, find it very hard to engage in effective study habits. Teachers also may not be able to help them develop effective study habits.

Once a student identifies his dominant learning style, it is necessary to communicate the same to the parents and others who have the interest of the student's academic success at heart (Whalley, 2007). This will help them to guide the student on the relevant study habits to develop, practise and nurture for the target of academic achievement.

2.10 PHYSICAL EXERCISE AS PART OF STUDY HABITS

Experts in physical activities are of the opinion that there are fundamental connections between the body, exercise and the brain (Hillman, Erickson & Kramer, 2008). Essentially what this means is that whatever one does to the body will affect the brain and thinking patterns. Thoughts also influence the body immeasurably. For the purpose of building smart study habits, it is important to understand the importance of exercise in promoting higher energy levels and a greater cognitive functioning and clarity of thought.

Exercise is an essential aspect of life that all including students ought to incorporate into their daily routine to reap the benefits that exercise has on the functioning of the

brain for effective learning (Hillman, Erickson & Kramer, 2008). It effectively improves a student's oxygen intake and releases unwanted tension and stress out of the body and refreshes the brain and improves the general wellbeing (Sicinski, n. d.). Physical exercise improves intellectual functioning and performance yet physical education is the most ignored subject on the curriculum.

Mixing up the weekly exercise routine with aerobic activity, strength training and stretching is the most sensible strategy to follow in order to keep the brain alert for effective learning and retention. (Shephard, Vollem, Lavellee, Labarre, Jequire & Rajic, 1984; Heidi, 2014).

2.11 TAKING EXAMINATIONS

An examination is a set of questions or exercises evaluating skill or knowledge acquired through learning or study activities. Though examinations are mostly externally administered, students can set and administer tests to themselves to evaluate their private learning outcomes. This is based on the premise that every learning activity is or should be objective in nature (Pritchard & Wilson, (2003).

Examination time is a period of anxieties and fear and especially among those students who might not have prepared well during the course of their learning and time prior to the examination (Nelson & Harwood, 2011). The fear and anxiety is caused by a sense of uncertainty of whether the student will succeed, as well as the level of self-efficacy (Hansley, 1985).

The purpose of studying for a student is to pass course examinations and achieve good grades. Ability to take examinations effectively is therefore crucial in effective schooling. Habits on taking examinations are crucial for academic success. Examinations come in different forms and different forms of examinations attract different ways of tackling them (Valin, 1961).

Kislik (2015) proposed the following as the most crucial when taking examinations:

2.11.1 Knowing the Ground Rules

Examinees should always read directions or instructions on how the examination is structured, for example, timing and number of questions among other requirements, and should compose their responses exactly the way the directions state (Kislik,

2015). They should make sure that their answers are clear, precise and to the point. Students should determine what the scoring rules for the test are and follow them to their advantage (Castle, n. d.)

2.11.2 Ordering of Responses

Responding to the easiest questions first is the best strategy. Stumbling over difficult questions for too long a time wastes valuable exam time leading to failure to complete the exam (Barrass, 1984). Examinations are about speed and accuracy even for the brightest candidates.

2.11.3 Keen Handling of Essay Questions in Examinations

Planning time when answering essay questions is crucial. The general rule is not to get carried away on one or two questions to the extent that one cannot answer the other questions in the time allowed. A student should read through the entire examination first to get a feel for all the questions he is expected to answer. In response to essay questions, a candidate should pay attention to the key words the examiner has used such words as 'list,' 'describe,' 'compare and contrast,' and 'outline' among others. These action words have special meaning and application in any examination. If a question asks for listing, narratives should be avoided. Answering essay questions directly is always the best policy.

After scanning the list of questions to be answered, an examinee chooses the ones he knows most about. Outlining the intended response can do this. The outline will help the candidate to remember important ideas and facts to be included in the response.

Good handwriting is an absolute essential. Most instructors value clear handwriting. Grammar, punctuation, and spelling also count. Well-written, grammatically-correct answers almost always receive higher grades than poorly written, grammatically-incorrect answers, even though the answers themselves are the same (Phemephe, 2011).

The objective of study habits is to achieve good academic performance. Under normal circumstances, behaviours and habits that do not yield the expected results are easily discarded or changed (McGregor & Elliot, 2002).

Many students perform poorly in their exams not because of lack of knowledge, but often due to poor presentation and organisation of responses to examination questions.

2.12 CHANGING STUDY HABITS

It is a common belief among teachers, parents and educational psychologists that change in study habits among students would bring about a positive change in students' academic performance. Morgan (1985) proposed that if students engaged in academically productive habits, there would be fewer academic failures in academic education systems. On the strength of this observation, low academic performers should be helped to identify their study habits and change them where possible for improved school performance. Such efforts would reduce or minimise the gap between the high and low performers, especially in secondary schools. The world over, people are struggling to achieve high ideals, and habit change is a common phenomenon in many facets of life, particularly when such habits are detrimental to human growth, development and achievement of life goals (Douglass & Bauer, 1996)

With determination, effort and strong will, students can change their unproductive study habits that lead to failure and replace them with positive habits that would drive them towards improved performance and achievement of individual academic goals.

Zen Habits (2007: 3) explained the following five aspects that lead to effective habit change:

- Working on one target habit at a time – Attempting to change many habits at a go would be overwhelming and ineffective;
- Creating a plan and writing it down – This will act as a constant reminder of the project underway and facilitate monitoring of progress;
- Refining the plan regularly – This provides a constant monitoring system to ensure that the plan is on course and or making adjustments where necessary.
- Making mini plans – Breaking the plan into small constituent plans that when completed will constitute completion of the grand plan in the spirit of the long and short term goals; and

- Repeating many times – practising the target behaviour often until it is established and does not call for much direct effort

Study habits determine students' level of academic performance and achievement. When study habits change performance, achievement changes also but in direct proportion to the habits, either positively or negatively. For example, if a student who used to spend four hours in private study every day reduces this by half, the level of performance and achievement may also drop proportionately (Wrenn & Humber, 1941; Flyer & Elliot, 2007).

2.13 SUMMARY OF FACTORS THAT MAY ACCOUNT FOR FAILURE

What makes some students pass very well while their counterparts fail miserably in the same examination? Failure can be attributed to many factors and unless these factors are well-understood, appreciated and effectively dealt with, it will remain impossible to improve academic performance. These factors have been dealt with in the preceding discussion.

Factors that determine study habits and levels of achievement include both individual and environmental factors as depicted on Table 2.2 below (Sattler, 1988). The majority of these factors are within the control of the students and impact on physical and psychological study habits of the individual students leading either to low or high academic performance. Students have to adapt to the prevailing physical study environment for the sake of their academic success and achievement of their educational goals. If it is not possible to change the physical environment, it becomes imperative and of paramount importance, for the student to change his/her study approaches to make the best of the situation instead of giving up and surrendering to fate.

Table 2.2: Conception of failure

Failure						
Individual factors				Environmental factors		
Neuropsychological	Physical	Experiential	Temperamental	School	Home	Peer group
<ul style="list-style-type: none"> • Poor memory • Limited attention span • Transient or temporary stress • Limited reasoning ability • Psychopathology • Limited ability to grasp concepts needed for solutions 	<ul style="list-style-type: none"> • Physical limitations that impede the acquisition of material 	<ul style="list-style-type: none"> • Minimal familiarity with language of the test • Minimal exposure to material 	<ul style="list-style-type: none"> • Personality and temperament traits that interfere with learning • Clash between teachers and child's temperaments • Clash between child's and parents temperaments 	<ul style="list-style-type: none"> • Inadequate learning environment at school • Inadequate teaching materials 	<ul style="list-style-type: none"> • Inadequate learning environment at home • Inadequate home study environment 	<ul style="list-style-type: none"> • Negative attitudes on the part of peer group toward schooling and other cognitive activities • Negative attitudes on the part of peer group towards child
↓						
Learned helplessness						

Source: Sattler (1988: 535)

2.14 CHAPTER SUMMARY

Self-efficacy, study habits and internal locus of control influence each other and each one of them has a direct impact on academic performance, while demographic factors such as age, gender, school level and residence status and learning environment can also have negative effects. Study habits, self-efficacy and internal locus of control influence each other and, individually or severally, influence academic performance.

Chapter 3 that follows provides an overview of various learning styles and models.

CHAPTER 3

STUDY HABIT MODELS AND DEVELOPMENT PLAN

3.1 INTRODUCTION

This chapter identifies some of the models of learning available in literature and explains them in relation to the objectives of this study.

3.2 LEARNING MODELS

A model may be viewed as something or system that worthy of being emulated by people for its ability to yield anticipated success. A model may be defined as a hypothetical description of a complex entity or process; or something to be imitated as an exemplar of the way things should be done. In this study it is assumed that the top quartile academic achievers can provide a study model that should be imitated or adapted by all other students who would wish to achieve similar levels of academic excellence. Macmillan English Dictionary for Advanced Learners (2007: 964) defines a model as something such 'as a system that is so good that people should copy it'. Some of the objectives of a model (Bandura, 1977) include:

- to facilitate understanding of a phenomenon by eliminating unnecessary components;
- to aid in decision making by simulating 'what if' scenarios; and
- to explain, control, and predict events on the basis of past observations.

Since most objects and phenomena are very complicated to be comprehended in their entirety, a model contains only those features that are of primary importance to the purpose of the model maker.

Literature accessed by the researcher did not yield direct models on study habits but on learning. This alternative is justified and relevant as the purpose of study habits and behaviour is to learn effectively and perform well in academic endeavours. Effectiveness of learning which is measured by its outcomes is dependent on study behaviours and habits engaged in by the learner in the learning process.

3.2.1 Problem-Based Learning Model (PBL)

Savery and Duffy (1995) proposed Problem-Based Learning (PBL), a pedagogical approach and curriculum design methodology often used in higher education settings.

Some of the defining characteristics of Problem-Based Learning (PBL), Savery and Duffy (1995) include the following:

- Learning is driven by challenging, open-ended problems with no one “right” answer;
- Problems/cases are context-specific;
- Students work as self-directed, active investigators and problem-solvers in small collaborative groups (typically of about five students);
- A key problem is identified and a solution is agreed upon and implemented; and
- Teachers adopt the role as facilitators of learning, guiding the learning process and promoting an environment of inquiry.

Rather than having a teacher provide facts and then testing students’ ability to recall these facts via rote learning, PBL attempts to get students to apply knowledge to new situations. Students are faced with contextualised, ill-structured problems and are asked to investigate and discover meaningful solutions.

Proponents of PBL believe that, as a strategy, problem-based learning:

- develops critical thinking and creative skills;
- improves problem-solving skills;
- increases motivation; and
- helps students learn to transfer knowledge to new situations.

However, PBL has attracted some criticism, and Savery and Duffy (1995) argued that students cannot really know what might be important for them to learn, especially in areas in which they have no prior experience. Therefore teachers, as facilitators, must be careful to assess and account for the prior knowledge that students bring to the classroom, linking the new knowledge to the previous.

Another criticism is that a teacher adopting PBL approach may not be able to cover as much material as a conventional lecture-based course. PBL can be very challenging to implement, as it requires a lot of planning and hard work for the teacher. It can be difficult at first for the teacher to relinquish control and become a facilitator, encouraging the students to ask the right questions rather than handing them solutions.

3.2.2 Experiential Learning Model

Kolb (1984) proposed a four-stage cyclical theory of learning known as experiential learning which is a holistic perspective that combines experience, perception, cognition, and behaviour.

Building upon earlier theorists, John Dewey and Kurt Levin, Kolb believes that “learning is the process whereby knowledge is created through the transformation of experience” (Kolb, 1984: 38). The theory presents a cyclical model of learning, consisting of four stages shown below. One may begin at any stage, but they must follow each other in the sequence (Kolb, 1984: 38)

- concrete experience – *doing*;
- reflective observation – *observing*;
- abstract conceptualisation – *thinking*; and
- active experimentation – *planning*.

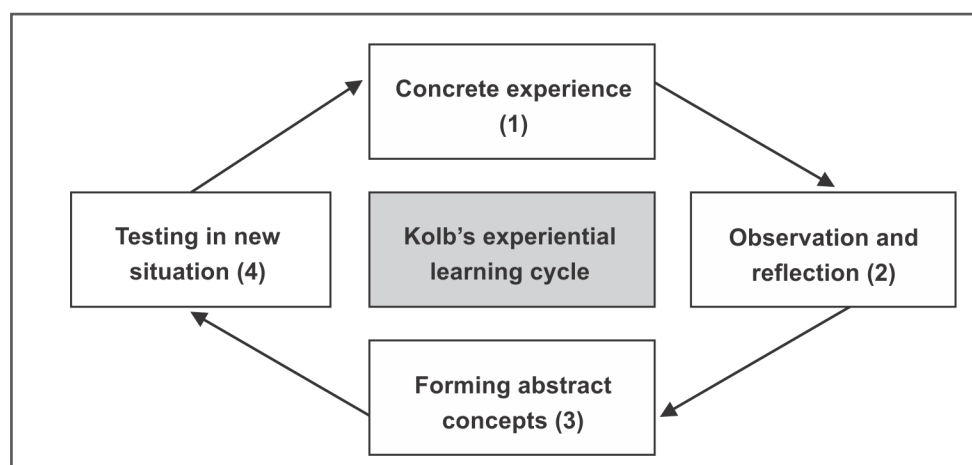


Figure 3.1: Four-stage experiential learning cycle

Source: Kolb (1984)

This four-stage learning cycle shows how experience is translated through reflection into concepts, which in turn are used as guides for active experimentation and the choice of new experiences. At concrete experience (CE), stage the learner actively experiences an activity e.g. lab session or fieldwork. The second stage, reflective observation (RO), is when the learner consciously reflects back on the experience he/she has gone through. The third stage, abstract conceptualisation (AC), comprises learner attempts to conceptualise a theory or model from observations made. The fourth stage, active experimentation (AE), involves the learner trying to plan how to test a model, theory or plan for a future experience.

According to O'Connor and Jackson (2008), Kolb's stages can be used to group learners into four categories as shown in Figure 2.2 below:

Table 3.1: Kolb's Learning Style Model

Assimilators	Converters	Accommodators	Divergers
These are learners who learn better when presented with sound logical theories to consider.	These are learners who learn better when provided with practical applications of concepts and theories.	These are learners who learn better when provided with "hands-on" experiences.	These are learners who learn better when allowed to observe and collect a wide range of information.

Source: O'Connor and Jackson (2008)

Kolb's Learning Style Model further classifies students as having a preference for 1) concrete experience or abstract conceptualisation (how they take information in), and 2) active experimentation or reflective model observation (how they internalise information). According to McLeod (2010), the four types of learners proposed in this classification scheme are:

- Type 1 (concrete, reflective). These are learners whose characteristic question is "Why?" Type 1 learners respond well to explanations of how course material relates to their experience, their interests, and their future careers and aspirations. To be effective with Type 1 students, the instructor should function as a motivator both intrinsically and extrinsically.

- Type 2 (abstract, reflective). These are learners whose characteristic question is "What?" Type 2 learners respond to information presented in an organised, logical fashion and benefit if they have time for reflection. To be effective, the instructor should function as an expert with admirable mastery of the subjects they teach.
- Type 3 (abstract, active). These are learners whose characteristic question is "How?" Type 3 learners respond to having opportunities to work actively on well-defined tasks and to learn by trial-and-error in an environment that allows them to fail safely without developing learned helplessness. To be effective, the instructor should function as a coach, guide and mentor providing guided practice and feedback.
- Type 4 (concrete, active). These are learners whose characteristic question is "What if?" Type 4 learners like applying course material in new situations to solve real problems. To be effective, the instructor should stay out of the way, maximising opportunities for the students to discover things for themselves.

Teachers should consider these types of students critically in order to be able to help students learn more effectively in heterogeneous classroom environments.

3.2.3 Discovery Learning Model

Bruner (1967) proposed a Discovery Learning Model which encompasses inquiry-based instruction. Proponents of the method believe that learning is more effective when learners discover facts and relationships of learned concepts by and for themselves.

Discovery learning is an inquiry-based, constructivist learning theory that takes place in problem-solving situations where the learner draws on his or her own past experience and existing conceptual knowledge to discover facts and relationships and new truths to be learned. Students interact with the world by exploring and manipulating objects/ideas, wrestling with questions and controversies, or performing experiments. As a result, students may be more likely to remember concepts and knowledge they discover on their own (in contrast to a transmissionist model where learners are viewed and treated as depositories of ready-made knowledge). Models that are based upon the discovery learning model include guided discovery,

problem-based learning, simulation-based learning, case-based learning, and incidental learning, among others (Kirschner, Sweller & Clark, 2006).

Proponents of this theory believe that discovery learning has many advantages, including (Kirschner, Sweller & Clark, 2006):

- encouraging active engagement;
- promoting motivation;
- promoting autonomy, responsibility, independence; and
- developing creativity and problem solving skills.

The following are some of the disadvantages cited by the critics of Bruner's (1967) discovery learning model:

- creation of cognitive overload;
- potential misconceptions; and
- teachers may fail to detect problems and misconceptions among learners.

Every student has ability and potential to perform given the correct instruction in the right learning environment (Fuchs, Fuchs, Powell, Seethaler, Cirino & Fletcher, 2008).

3.2.4 Carroll's Model of School Learning

Carroll (1989) synthesised much of the research on learning theory into his model of school learning. According to this model, there are five elements that contribute to the effectiveness of instruction:

- Aptitude: this refers to the student's general abilities to learn;
- Ability to understand instruction: this refers to the students' knowledge of prerequisite skills and information needed to understand a unit of instruction;
- Perseverance: this refers to the amount of time students are willing to spend actively participating in the learning process and activities;
- Opportunity: this refers to the amount of time available for learning. It could include out-of-class work time as well as time in class; and
- Quality of instruction: this refers to the effectiveness of teaching.

The quality of students interacts with the quality of teacher and instructions and the learning environment to determine the quality of learning outcomes. How well

learners interact with teaching instructions, learning materials and the general learning environment or context and manage their time will influence their academic performance. This will also influence the amount of effort a student will invest in learning activities and general study behaviour in and out of school.

3.2.5 Situated Learning Theory Model

Situated Learning Theory (Lave & Wenger, 1990) posits that learning is unintentional and situated within authentic activity, context, and culture. In contrast with most classroom learning activities that involve abstract knowledge which is out of context, they argue that learning is situated; that is, as it normally occurs, learning is embedded within activity, context and culture. It is also usually unintentional rather than deliberate. Lave and Wenger (1991: 68) call this a process of “legitimate peripheral participation”.

Knowledge needs to be presented in actual contextual settings and situations that positively identify with the person’s application of knowledge. Social interaction and collaboration are essential components of situated learning. As the learners participate in community activities they move from the periphery to the centre of the community in which they belong thus becoming more active and engaged within the culture eventually assuming the role of an expert. (LearningTheories.com, 2014a).

Other researchers (Brown, Collins & Duguid, 1989) further developed Situated Learning Theory to emphasise the idea of cognitive apprenticeship. Cognitive apprenticeship supports learning in a domain by enabling students to acquire, develop and use cognitive tools in authentic domain activity. Learning, both outside and inside school, advances through collaborative social interaction and the social construction of knowledge (Dennen & Burner, 2008).

Situated learning is related to Vygotsky’s theory of cognitive development that forms the foundations of constructivism. Vygotsky (1978) proposed three major themes in relation to cognitive development as follows:

- Social interaction plays a fundamental role in the process of cognitive development. In contrast to Jean Piaget’s understanding of child development (in which development necessarily precedes learning), Vygotsky posited that social learning precedes development (LearningTheories.com, 2014b). He observed

that every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; first, between people (interpsychological) and then inside the child (intrapsychological) (within the person) the More Knowledgeable Other (MKO). The MKO refers to anyone who has a better understanding or a higher ability level than the learner, with respect to a particular task, process, or concept. The MKO is normally thought of as being a teacher, coach, or older adult, but the MKO could also be peers, a younger person, or even computer programs (LearningTheories.com, 2014b).

- The Zone of Proximal Development (ZPD). The ZPD is the distance between a student's ability to perform a task under adult guidance and/or with peer collaboration and the student's ability of solving the problem independently (LearningTheories.com, 2014b).

Vygotsky focused on the connections between people and the socio-cultural context in which they act and interact in shared experiences. Humans use tools that develop from a culture, such as speech and writing, to mediate their social environments. Initially children develop these tools to serve solely as a social function and ways to communicate needs. Vygotsky believed that the internalisation of these tools led to higher thinking skills and effective learning (Hedegaard, 1990).

Many schools have traditionally held a transmissionist or instructionist model in which a teacher or lecturer 'transmits' information to students. In contrast, Vygotsky's theory promotes learning contexts in which students play an active role in learning in the belief that learners construct their own knowledge experientially. Roles of the teacher and student are therefore shifted, as a teacher should collaborate with his or her students in order to help facilitate meaningful construction of knowledge among students. Learning therefore becomes a reciprocal experience for the students and teacher (Wertsch & Sohmer, 1995).

3.2.6 Attribution Theory Model

Attribution theory attempts to explain the world and to determine the cause of an event or behaviour e.g. why people do what they do (Gordon & Graham, 2006).

Weiner's (1986) attribution theory posits that behaviour is observable, intentional and associated with both internal or external factors and especially locus of control.

According to this theory, human achievement may be attributed to effort, ability level of task difficulty or luck and especially where it comes to success or failure. Weiner (1986) classifies attributions into three dimensions:

- Locus of control (bi-polar continuum: internal - external);
- Stability (do causes change over time or remain stable?); and
- Controllability (causes one can control such as skills as opposed to causes one cannot control such as luck or others' actions).

What a person attributes to his experiences will be the basis of his determination and willingness to change behaviour (Woolfolk, 2007).

Attribution theory has been used to explain the difference in motivation between high and low achievers. Attribution theory holds that high achievers will approach rather than avoid tasks related to succeeding, because they believe success results from high personal ability and effort, which they are confident of. Failure is thought to be caused by bad luck or a poor exam and is not their fault (Gordon & Graham, 2006). Thus, failure does not affect their self-esteem but success builds pride and confidence. On the other hand, low achievers avoid success-related chores because they tend to doubt their ability and/or assume success is related to luck or to "who you know" or to other factors beyond their control. Thus, even when successful, it is not as rewarding to the low achiever because he does not feel responsible, and does not increase his pride and confidence (Uguak, Elias, Uli & Suandi, 2010; Phegley, 2013)

Most people have a need to explain the world, both to themselves and to others and attributing cause to the events in life. This gives a greater sense of control. When explaining behaviour, it can affect individual standing within a group.

When another person has erred, others will often attribute that experience to internal attribution, saying it is due to internal personality characteristics such as laziness. When people have erred, they will more likely use external attribution, attributing causes to situational factors rather than blaming themselves. There is tendency to attribute personal success to internal factors and others to external factors such as luck. For example, when a football team wins, supporters say 'we

won'. But when the same team loses, the supporters say 'the team lost'. People tend to associate with those who succeed than failures (Changing Minds, n. d.).

Attributions are also significantly driven by emotional and motivational drives. Blaming other people and avoiding personal responsibility are very real self-serving attributions. People will also make attributions to defend what they perceive as attacks. People will point to others' injustice in an unfair world. People with a high need to avoid failure will have a greater tendency to make attributions that put themselves in a good light and apportion blame to others (Weiner, 1986).

People tend to even blame victims for their fate as they seek to distance themselves from thoughts of suffering the same plight (Psychology Today, 2014).

3.2.7 Cognitive Theory of Multimedia Learning

Cognitive theory of multimedia learning is based on three main assumptions that:-

- There are two main separate channels (auditory and visual) for processing information;
- There is limited channel capacity; and
- That learning is an active process of filtering, selecting, organising, and integrating information. This observation favours integrative learning that ensures linkages of information and better learning outcomes.

The "multimedia principle" points out that people learn better when auditory and visual media are combined during learning encounters (Mayer, 2011). However, simple additions of words to pictures are not an effective way to achieve the objectives and benefits of multimedia learning. The goal of instructional media is in the light of how human mind works. This is the basis for Mayer's Cognitive Theory of Multimedia Learning (Rasch & Schnotz, 2009).

Humans can only process a finite amount of information in a channel at a time, and they make sense of incoming information by actively creating mental representations. Jaeggi, Buschkuhl, Etienne, Ozdoba, Perrig and Nirkko (2007) discuss the role of three memory stores: sensory memory (which receives stimuli and stores it for a very short time), working memory (where humans actively process information to create mental constructs (or 'schema'), and long-term memory (the

permanent repository of all things learned in life). Mayer's (2011) Cognitive Theory of Multimedia Learning presents the idea that the brain does not interpret a multimedia presentation of words, pictures, and auditory information in a mutually exclusive fashion; rather, these elements are selected and organised dynamically to produce logical mental constructs or schemas. Mayer, (2011) underscores the importance of learning (based upon the testing of content and demonstrating the successful transfer of knowledge) when new information is integrated with prior knowledge. Figure 3.2 below depicts the concept of Mayer's (2011) Multimedia Learning Model.

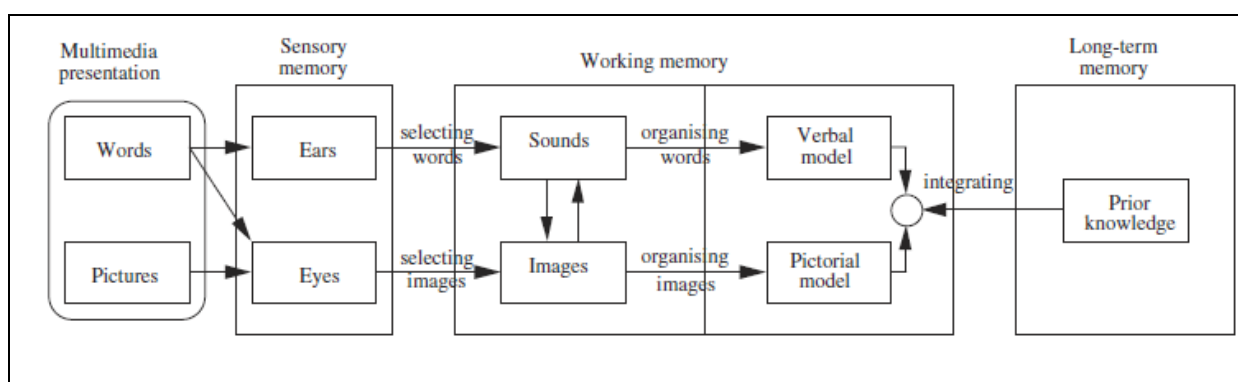


Figure 3.2: Mayer's Cognitive Theory of Multimedia Learning

Source: Mayer (2010)

3.3 LEARNING-STYLE MODELS

A model may be viewed as systematised ways of doing something that can be copied by others wanting to attain similar results. Some of the models are discussed below.

3.3.1 Herrmann's Brain Dominance Instrument (HBDI) Model

In discussing whole brain thinking, Herrmann (1996) taught how to communicate with those with whom we share as well as those from whom we differ in thinking styles. Once an individual understands his thinking style preferences, he is able to develop better interpersonal relations and cognitive functioning including learning.

This method classifies students in terms of their relative preferences for thinking in four different modes based on the task-specialised functioning of the physical brain. According to Herrmann (1999), the four divisional modes or quadrants of the brain in this classification scheme are:

- Quadrant A (left brain, cerebral). Logical, analytical, quantitative, factual, critical;
- Quadrant B (left brain, limbic). Sequential, organised, planned, detailed, structured;
- Quadrant C (right brain, limbic). Emotional, interpersonal, sensory, kinaesthetic, symbolic;
- Quadrant D (right brain, cerebral). Visual, holistic, innovative.

For this reason, teachers should use a multimodal approach to instructions in order to cater for the modal diversity in class.

3.3.2 Brain Dominance Model

The brain is thought the control centre of all body functions. The brain dominance model identifies four different modes of thinking:

Table 3.2: Modes of thinking

Thinking Mode	Key Concepts and preferred activities
Analytical Thinking	Key concepts and characteristics: logical, factual, critical, technical and quantitative. Preferred activities: collecting data, analysis, understanding how things work, judging ideas based on facts, criteria and logical reasoning
Sequential Thinking	Key concepts and characteristics: safekeeping, structured, organized complexity or detailed, planned. Preferred activities: following directions, detail oriented work, step-by-step problem solving, organisation and implementation
Interpersonal Thinking	Key concepts and characteristics: kinaesthetic, emotional, spiritual, sensory, feeling. Preferred activities: listening to and expressing ideas, looking for personal meaning, sensory input, and group interaction
Imaginative thinking	Key concepts and characteristics: Visual, holistic, intuitive, innovative, and conceptual. Preferred activities: Looking at the big picture, taking initiative, challenging assumptions, visuals, metaphoric thinking, creative problem solving, long term thinking

Source: Herrmann (1999)

An important factor in understanding learning styles is understanding how the human brain functions. Both hemispheres of the brain can reason, but by different strategies and either side may be dominant. The left brain is considered analytic in approach while the right is described as holistic or global (Morris, 2006). A

successive processor (left-brain) prefers to learn in a step-by-step sequential format, beginning with details leading to a conceptual understanding of a skill. A simultaneous processor (right brain) prefers to learn beginning with the general concept and then going on to specifics (Demetriou, Spanoudis & Mouyi, 2010).

People think and learn in different ways and their past experiences have considerable influence. This may be the reason why people from different cultural backgrounds exhibit different learning characteristics. Different cultural groups may emphasise one cognitive style over another. Learning style may therefore be described as the sum of the patterns of how individuals develop habitual ways of responding to experience and distinguishes learning styles by considering the holistic vs. the analytic learner (Mathpower.com 2014; Bear, Connors & Paradiso, 2001).

Table 3.3: Hemispherical learning characteristics of the brain

LEFT (Analytic)	RIGHT (Global)
Successive Hemispheric Style	Simultaneous Hemispheric Style
1. Verbal	1. Visual
2. Responds to word meaning	2. Responds to tone of voice
3. Sequential	3. Random
4. Processes information linearly	4. Processes information in varied order
5. Responds to logic	5. Responds to emotion
6. Plans ahead	6. Impulsive
7. Recalls people's names	7. Recalls people's faces
8. Speaks with few gestures	8. Gestures when speaking
9. Punctual	9. Less punctual
10. Prefers formal study design	10. Prefers sound/music background while studying
11. Prefers bright lights while studying	11. Prefers frequent mobility while studying

Source: Mathpower.com (2014)

Teachers would greatly benefit from structuring and presentation of instructions and learning experiences to improve the learning outcomes of students with either right or left cerebral dominance.

3.3.3 Felder-Silverman Learning Style Model

Felder-Silverman and Brent (2005) classified learners into sensing, visual, inductive, active and sequential. Some of the characteristic of each of these learners include:

- Sensing learners (concrete, practical, oriented toward facts and procedures) or intuitive learners (conceptual, innovative, oriented toward theories and meanings);
- Visual learners (prefer visual representations of presented material – pictures, diagrams, flow charts) or verbal learners (prefer written and spoken explanations);
- Inductive learners (prefer presentations that proceed from the specific to the general) or deductive learners (prefer presentations that go from the general to the specific);
- Active learners (learn by trying things out, working with others) or reflective learners (learn by thinking things through, working alone); and
- Sequential learners (linear, orderly, learn in small incremental steps) or global learners (holistic, systems thinkers, learn in large leaps (International Center for Educators' Learning Style, 2015).

Instructions are tailor-made to suit the interests and tastes of the learners; for example, most engineering instruction has been heavily biased toward intuitive, verbal, deductive, reflective, and sequential learners. However, relatively few engineering students fall into all five of these categories. Thus most engineering students receive an education that is mismatched to their learning styles. This has a potential to hurt their performance and their attitudes toward their courses and engineering as a curriculum and career (Felder & Brent, 2005). Different students and groups develop and practise different study and learning styles and these differential preferences, to a great extent, determine the choice study habits and study mates although the styles are dynamic.

3.3.4 Social Cognitive Learning Model

According to Thagard (2005), Social Cognitive Theory supposes that people self-regulate their environments and actions, and that new behaviours are learned and

maintained by those interactions between the persons and their environment as well as the outcomes of such interactions.

According to Thagard's (2005: 174) model, learning takes place through:

- Direct experience;
- Indirect or vicarious experience by observing others or modelling and especially peers; and
- Storing and processing of complex information in cognitive operations that allow one to anticipate consequences of actions, set goals in thought and weigh evidence from various sources in order to assess one's own capabilities to learn.

Individual life experiences and environmental influences influence one another and must be accounted for together. According to the Social Cognitive Learning Model, behaviour is changed by altering near-environments (e.g., classroom, youth group, family activities) and by empowering the individual with skills to master those environments.

Behaviour is more difficult to change because the more life experiences one has, the more those experiences contribute to core individual beliefs, hence the need to cultivate and develop productive study habits, self-efficacy and locus of control early in life .

The Social Learning (Cognitive) Model has four components (Miller, 2011: 73).

- Behaviour potential: the likelihood of engaging in a particular behaviour given a specific situation. This component is the probability that an individual will demonstrate a particular behaviour in a certain situation based upon their past experiences and behaviour. This element explains how habits are sometimes formed.
- Expectancy: the probability that certain behaviour will lead to an outcome/result that will reinforce or continue that behaviour. If there is a high expectancy that the behaviour will result in a favourable outcome, and the person is confident of achieving that outcome, the behaviour will be continued and even strengthened (e.g. early successful weight-loss efforts lead to on-going weight-loss and weight maintenance efforts).

- Reinforcement value: the desirability of the behaviour's outcomes or consequences. When the outcomes or consequences we want are considered positive (e.g. physical activity that is fun) then the behaviour is likely to sustain itself. Alternatively, when the consequences of behaviour are not desired, then the behaviour is not likely to be continued.
- Psychological situation: the notion that different people interpret or perceive the same situation differently. This component leads to the "locus of control" concept.

Locus of control is the belief that people have about what determines their life experiences, whether the controls are external or internal (Thagard, 2005).

Some people have an internal locus of control that means they believe they have responsibility over their life decisions, actions and outcomes. Success or failure is due to their own efforts and control over outcomes. Those with an external locus of control primarily believe that the outcomes and results of their behaviours are controlled by others or are influenced by other factors. Elements of luck, fate and others' power are prominent.

Those with high internal locus of control may be more ready to make positive changes while external locus of control may hinder the readiness (and willingness) of trying new behaviours. Students with internal locus of control will be more likely to change their non-productive study behaviour and habits in order to achieve their desired outcomes (Bandura, 2002).

3.3.5 Cognitive Learning Styles

Cognitive learning styles are based on the information processing habits of an individual. Unlike individual differences in abilities, cognition describes a person's typical mode of thinking, perceiving, remembering, or problem solving. Cognitive style is usually described as a personality dimension which influences attitudes, values, and social interaction among other mental traits.

In addition, Gardner (2006: 241) claims that:

- All human beings possess all intelligence in varying amounts;
- Each person has a different intellectual composition;

- Educators can improve education by addressing the multiple intelligence of learners;
- These forms of intelligence are located in different areas of the brain and can either work independently or together;
- These forms of intelligence may define the human species;
- Multiple intelligence can be nurtured and strengthened, or ignored and weakened; and
- Each individual has more than one form of intelligence.

Each learner has a dominant cognitive style that teachers and educators should take advantage of when helping learners to achieve academic goals and objectives. Our dominant cognitive learning style guides application of other minor styles in learning activities.

3.3.5.1 Cerebral basis of learning styles

Students' learning styles have more influence than may be realised. Individual preferred styles guide the way individuals learn. They also change the way one internally represents experiences, recalls information and chooses words. Miller (2003) showed that each learning style uses different parts of the brain. Involving more of the brain during learning tends to improve memory and learning skills. Researchers using brain-imaging technologies have been able to find out the key areas of the brain responsible for each learning style. For example:

- Visual: The occipital lobes at the back of the brain manage the visual sense. Both the occipital and parietal lobes manage spatial orientation. For example, posters on classroom walls and diagrams in textbooks appeal to the visual senses. Such visual stimuli provide summaries of textual content. Students who draw mindmaps of textual information are likely to remember these mindmaps more easily than text alone. Mindmaps are powerful tools for learning and remembering;
- Aural: The temporal lobes handle aural content. The right temporal lobe is especially important for music. The auditory and visual senses are the only distant sense human beings have;

- Verbal: The temporal and frontal lobes, especially the two specialised areas: Broca's and Wernicke's areas (in the left hemisphere of these two lobes). It involves the use of speech and language as well as general communication;
- Physical: The cerebellum and the motor cortex (at the back of the frontal lobe) handle much of human physical movement and control such functions as gross and fine muscular movement;
- Logical: The parietal lobes, especially the left side, drive human logical thinking, reasoning, attitudes, perceptions and other logical functions;
- Social: The frontal and temporal lobes handle much of human social activities. The limbic system also influences both the social and solitary styles and has a lot to do with emotions, moods and aggression, and controls such functions as sympathy, empathy, and love; and
- Solitary: The frontal and parietal lobes, and the limbic system are also active with this style (Learning-Styles-online.com, 2014).

3.3.6 Theories of Motivation and Behaviour

Motivation may be viewed as the backbone of behaviour and learning and its forces may be either intrinsic or extrinsic dimensions.

Dehaloo (2011), in his study that investigated the motivation and job satisfaction of teachers in Kwazulu Natal, found that teachers with high self-efficacies were more satisfied with their physical environments and school cultures than others. In the same way, the job of students is to study and achieve highly in academics just like employees would to achieve high personal and organisational goals. This study draws from Dehaloo's concept, perspective and purpose of motivation in human endeavours as well as the summarised review of theories of motivation and behaviour.

3.3.6.1 Intrinsic and extrinsic motivation

Motivated students are effective because they are always looking for better ways of improving their academic performance. They should continuously reinvent themselves and do not need to be constantly prodded and supervised as they are committed, hardworking, and loyal to their academic goals (Sergiovanni & Starratt, 2007, cited in Delahoo, 2011). Ololube (2006) cited in Delahoo (2011) raised an

argument that would be seen to imply that motivated students are easy to spot by their dedication, enthusiasm, focus, zeal, and general performance in academic tasks.

Citing Spector (2008), Dehaloo (2011) observed that motivation may be perceived as a driving force behind a person's action and a desire that instigates people to want to act or behave in a certain way. Schulze and Steyn (2003) perceive motivation as a desire or willingness to do some objective work, for example, to study in case of a student, to be productive and creative or to perform at a high level towards the realisation of personal goals. According to Plunkett and Attner (1992), motivation is a combination of a person's internalised needs and external or environmental influences that determine behaviour and provide the opportunity to satisfy needs. Motivation is a force that energises behaviour and can be either intrinsic or extrinsic or both (Hugo, 2000).

Steyn (2002) defines intrinsic motivation as the internal, subjective judgements that occur within individuals when they complete goal related tasks. Steyn (2002) avers that intrinsic motivation involves four factors, i.e. impact, competence, meaningfulness, and choice. Impact refers to the degree to which a person's behaviour is perceived as producing the intended effects and in this case students' learning and performance environment. Competence is the degree to which people believe they can achieve success in a task if they try. Meaningfulness implies the values of the task goal as judged by the individual's own standards. When individuals experience low degrees of meaningfulness, they feel apprehensive and detached. However, the experience of high degrees of meaningfulness will make individuals more committed and involved in task accomplishment (Steyn, *ibid.*) Choice refers to the intentional selection of actions that will lead to desired outcomes. More choice results in greater flexibility, initiative, creativity and resilience whilst little choice leads to feelings of tension, negative emotions and diminished self-esteem.

Intrinsic motivation is viewed as the motivation to engage in an activity primarily for its own sake, because the activity is perceived to be interesting, involving, satisfying and challenging (Maehr & Anderman, 1993).

Extrinsic motivation, by contrast, is viewed as motivation to engage in an activity primarily for the attainment of external goals such as praise, recognition, reward, or other accolades. However, true and lasting motivation is intrinsic and has greater effect in influencing persistence in the required behaviour (Apiola, Tedre & Oroma, 2011).

3.3.6.2 Theories of motivation

Research on motivation draws on several theoretical perspectives. These perspectives are based on the differing approaches to the origins or sources of motivation, e.g. energy, heredity, learning, social interaction, cognitive processes, activation of motivation, homeostasis, hedonism or growth motivation (Petri, 1996). Baron, Henley, McGibbon and McCarthy (2002) posit that motivation theories are broadly classified into three categories, namely needs-based theories, cognitive theories, and drive and reinforcement theories.

Needs-based theories explain the content of motivation. These theories propose that internal states within individuals energise and direct their behaviour. These internal states are referred to as drives, needs or motives. Examples of these include Maslow's hierarchy of needs, Oldham's task enrichment theory and McClelland's learned needs theory.

Cognitive theories focus on cognitive processes such as thoughts, beliefs and values which people use to make choices regarding their behaviour at work (Beck, 1983). Drive and reinforcement theories are based on behaviourist approaches which are based on the premise that behaviour that has been rewarded in the past will tend to be repeated, and behaviour that has been punished previously, will tend to be extinguished (Owens, 1995). The different theories are now discussed in more detail.

3.3.6.3 Needs-based theories

Maslow's pioneering work on motivation dates back to 1943 (Spector, 2008). The basic tenet of Maslow's theory is that human beings have needs which he classified in a hierarchy ranging from lower order to higher order needs (Figure 3.3).

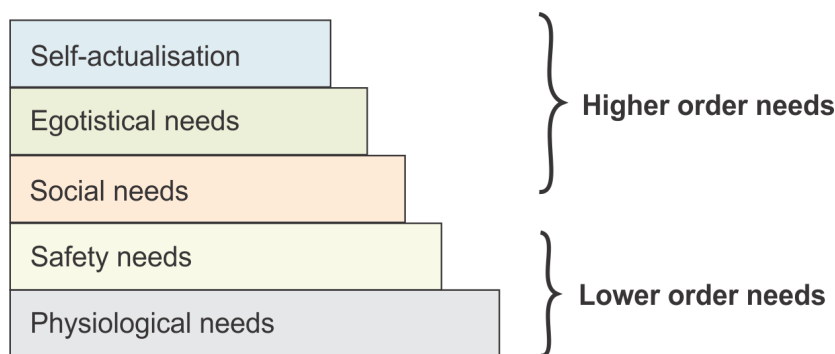


Figure 3.3: Maslow's hierarchy of needs

Source: Spector (2008: 190).

Figure 3.3 shows that lower order needs include physiological and safety needs whilst higher order needs range from social, egotistical and self-actualisation needs. Maslow contended that lower order needs have to be satisfied first, before higher order needs can be satisfied (Schultz & Schultz, 1998).

Physiological needs are related to basic survival, for example hunger or thirst, whilst safety needs relate to physical safety and security as opposed to being exposed to harm. Safety needs, according to Beach (1980) and Spector (2008), are also related to job security. Social needs refer to friendship, love and social acceptance and support, whereas egotistical needs involve a person's desire to be respected by others and by him/her. The highest order need in the hierarchy is the need for self-actualisation, which represents a person's striving towards the full development of his/her potential.

Several observations about work at schools can be made using Maslow's theory. With reference to physiological needs, many learners are deprived of the most basic needs such as food and water, and therefore present a constant motivational problem to teachers, since teachers are expected to deliver the curricular needs to these children who, in essence, are in no position to receive them. The needs for safety and security, the second hierarchical level, are also not met at schools regarding both teachers and learners. Violence may occur as teachers and learners, especially non-residential students, travel to and from the school (Hayward, 2009;

McCarthy, 2008). It becomes difficult to concentrate on teaching and learning in an environment governed by fear and uncertainty. The need to belong, (level three of the hierarchy), causes individuals to seek relationships with peers and older members of the community for various reasons. The need for esteem and status (level four of the hierarchy) causes students to seek control, autonomy, respect from and for others and academic competence. Finally, the need for self-actualisation motivates learners to be the best they are capable of being.

Maslow contended that people always pursue goals that they have not yet reached and will not seek for higher level needs unless the lower level needs are adequately met. Consequently, those needs that have already been satisfied, no longer provide motivation for action. Maslow's work on motivation has received wide recognition at the workplace in terms of its intuitive logic and ease of understanding (Mittelman, 1991).

3.3.6.4 Cognitive theories

Cognition may be viewed as the light that illuminates paths to human expectations (Sternberg & Sternberg, 2009).

3.3.6.4.1 *Expectancy theory*

Vroom (1964) postulated the expectancy theory proposing that people will behave and act in accordance with what will gain them the maximum advantage (Baron, *et al.*, 2002). The expectancy theory, also known as Vroom's Expectancy-Valence-Instrumentality (VIE) theory, posits that motivation (or 'force') is a mathematical function of three types of cognition, expressed as follows (Vroom, 1964):

Force = Expectancy X \sum (Valence X Instrumentalities), where:

- force is the person's motivation to perform;
- expectancy is the perceived probability that a person has regarding his ability to perform the behaviour required to lead to a desired outcome for example studying hard to score high grades or a civil servant working very hard to secure a promotion;
- valence is the value or the attractiveness of the outcome to the person, and

- instrumentality is the perceived probability that a given behaviour will lead to the desired outcome.

Spector (2008) hypothesises that for each form of behaviour there may be more than one outcome. For each outcome, a valence and instrumentality are multiplied, and each resulting product then summed (Σ) and multiplied by the person's (in this case the student's) expectancy to produce an overall force or motivation score. If any of the cognitive components equal zero, then the overall level of motivation will be zero.

Beach (1980) and Beck (1983) maintain that the expectancy theory explains how rewards shape human behaviour by focusing on internal cognitive states that lead to motivation. In other words, people are motivated to action if they believe those behaviours will lead to outcomes that they desire.

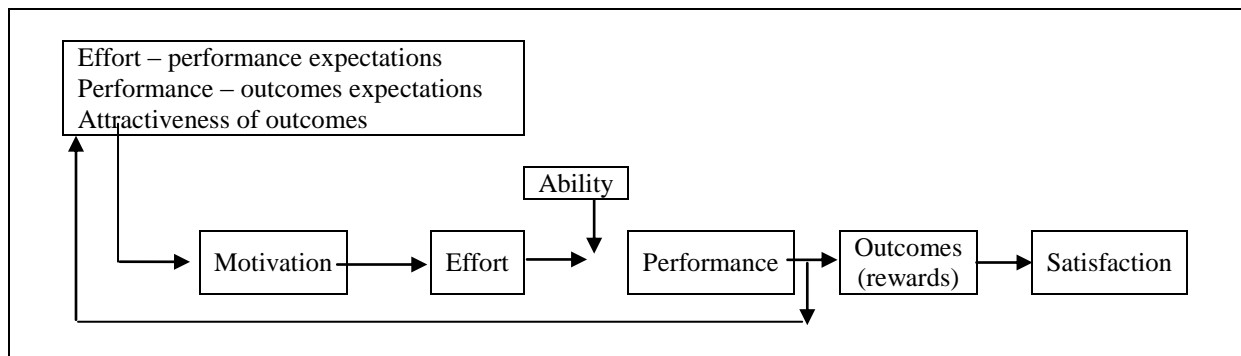


Figure 3.4: The expectancy theory of motivation

Source: Schulze & Steyn (2007)

Lewis, Goodman and Fandt (2001) cited in Ololube (2006), maintain that the expectancy theory is the most comprehensive motivational model that seeks to predict or explain task-related effort. For example, the theory suggests that motivation that will lead to effective study habits is a function of the perceived relationship between an individual's effort, performance, and the desirability of consequences associated with study habits. In other words, students are influenced by the expected outcomes of their behaviour and motivation in academics or by their perceptions of effort and reward (Vroom, 1964, cited in Ololube, 2006).

At school, the expectation of students is to master the curriculum objectives and perform well at both formative and summative evaluation learning levels. Students will experience motivation to study and learn effectively if they believe that their

efforts in the light of their expectations are realised. If learner performance is repeatedly mediocre or poor, learner motivation levels are bound to decline through development of self-doubt. This points to the need for teachers to ensure that students succeed in their learning activities as often as possible.

3.3.6.4.2 Self-efficacy theory

The self-efficacy theory illustrated in Figure 3.5 is a contemporary theory and is fashioned along the principles of the expectancy theory (Spector, 2008).

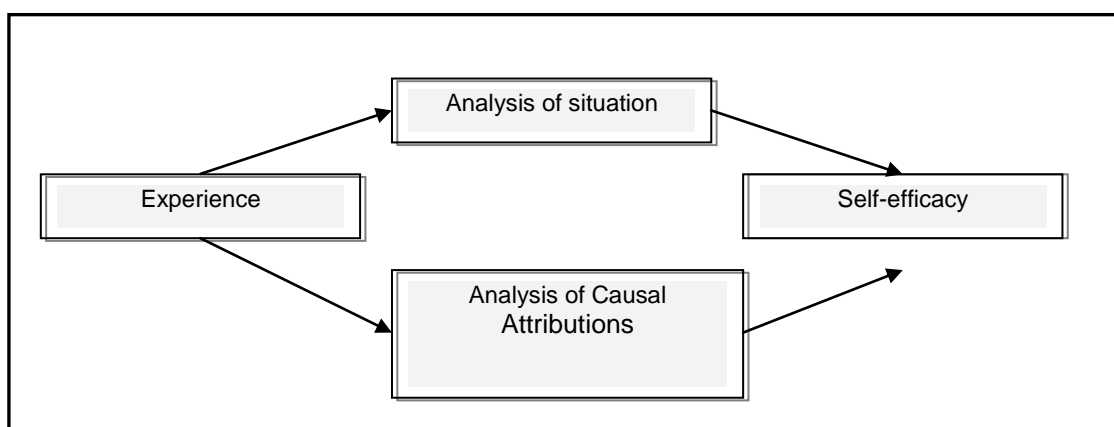


Figure 3.5: Self-efficacy theory

Source: Spector (2008)

According to Bandura (1997) cited in Spector (2008), the notion of self-efficacy theory (Figure 3.5) is that motivation and performance are determined by how effective people believe they can be. In other words, people, including students with high self-efficacy, believe they are capable of accomplishing tasks and will be motivated to put in more effort to achieve their goals. Similarly, people with low self-efficacy do not believe they can accomplish tasks successfully. They will therefore not be motivated and will not put in the relevant effort. The effort that needs to be put in, however, is reliant on the individual's perceived ability to perform the specific task.

Bandura and Locke (2003), cited in Spector (2008), maintain that the self-efficacy theory has been well-tested both inside and outside the workplace, and research has

been quite supportive. A high level of self-efficacy or belief in one's own capabilities is a necessary component of work motivation and subsequent performance.

3.3.6.4.3 Goal setting theory

Locke postulated the goal setting theory in 1968 (Beck, 1983). The goal setting theory is illustrated in Figure 3.6 and is based on the assumption that peoples' behaviour is motivated by their internal intentions, objectives and goals, that is by what people consciously want to achieve (Hoy & Miskel, 1996).

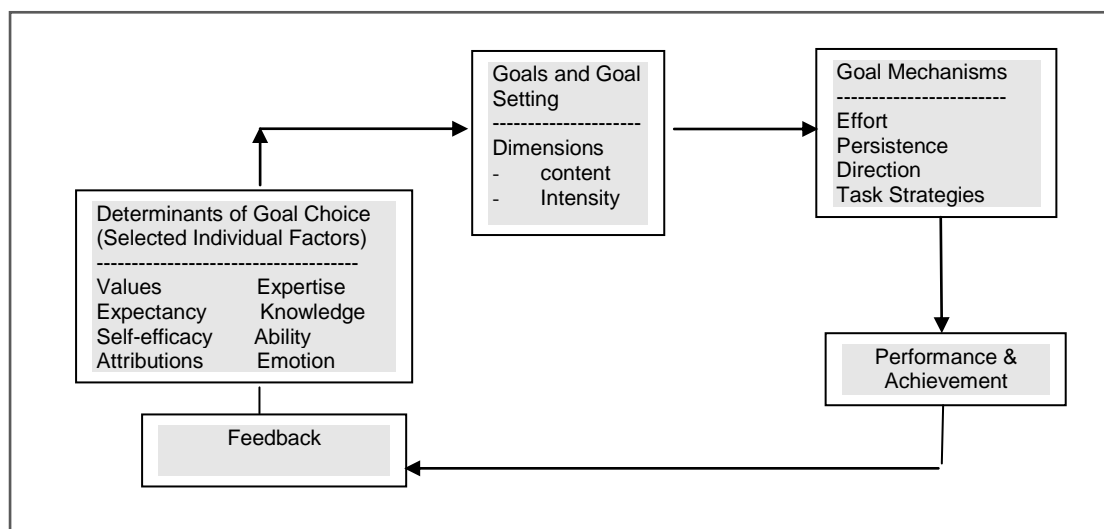


Figure 3.6: Locke's goal setting theory

Source: Hoy and Miskel (1996: 121).

According to Locke and Henne (1986), goals affect behaviour in four ways, *viz.*, they:

- direct attention and action to those behaviours which a person believes will achieve a particular goal;
- mobilise effort towards reaching the goal;
- increase the person's persistence, which results in more time spent on the behaviours relevant to the attainment of the desired goal; and
- motivate the person's search for effective strategies for goal attainment.

In order for any goal-directed behaviour to effectively improve performance, Locke and Henne (1986), as well as Hoy and Miskel (1996), outline the following prerequisites:

- a thorough commitment to the specific goal;
- regular feedback on the person's performance towards attaining the goal;
- goals that are specific rather than vague (such as "do your best");
- self-set goals rather than imposed or externally set goals; and
- challenging goals.

According to Schultz and Schultz (1998) and Spector (2008), the goal setting theory is currently one of the most popular theories regarding organisational approaches to motivation. It has intuitive appeal, is well supported by empirical research and has clear relevance to any workplace regardless of the nature of work.

3.3.6.4.4 Integrated control theory

The integrated control theory model of work motivation was postulated by Klein (2006) cited in Spector (2008). It is a recent model which builds upon Locke's goal setting theory, and focuses on how feedback effects motivation to maintain efforts towards goals as illustrated in Figure 3.7 below.

According to control theory, motivation begins with a goal that one intends to achieve. The theory posits that the goal must be attainable, and, as one works towards the accomplishment of the goal, feedback about performance is given (Oyserman & Destin, 2010). The feedback is evaluated by comparing the current goal (progress) to some internal standard or expected progress. If progress is insufficient, one will be motivated to take action, which might include goal re-evaluation or adoption of other strategies to improve performance. These strategies could be working harder (increase in effort) or working smarter (adopting new, more productive strategies).

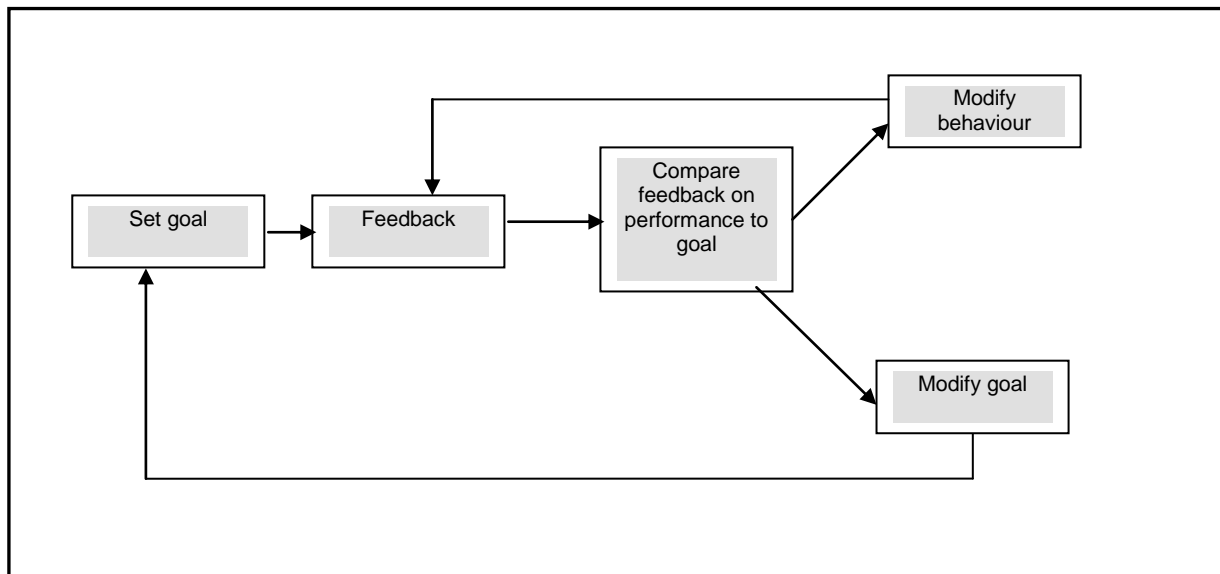


Figure 3.7: Control theory

Source: Spector (2008: 216)

3.3.6.4.5 Action theory

The action theory of motivation describes a process linking goals and intentions to behaviours (Frese & Zapf (1994) cited in Spector, 2008). The theory proposes that work motivation theories should focus mainly on goal-oriented or voluntary behaviour called actions. These action processes link a hierarchy of cognitions both to actions and to feedback from the environment (see Figure 3.8). In school, students may do things simply to comply with school routine instead of meaningfully purposefully and deliberately with an aim.

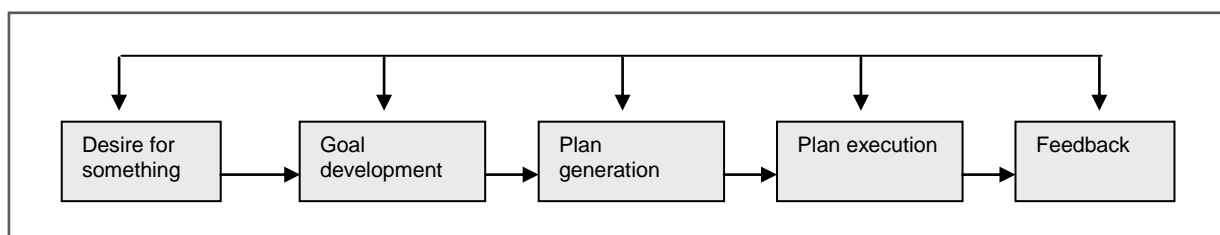


Figure 3.8: Action theory

Source: Spector (2008: 217).

According to the action theory (in Figure 3.8) above, there must be a desire to accomplish something, and that desire leads to specific goals and objectives to achieve it. Once the goals are set, plans and specific steps are chosen to achieve

the goals. Thereafter the plans are executed, and execution involves actions. Finally the person receives feedback, in approximation to the goal as an indication of whether progress is being made in the right direction or not. If the feedback is positive, the actions are sustained while negative feedback can lead to changes in goals, plans and actions (Spector, 2008).

In the context of secondary school, the desire may be to achieve high academic grades in KCSE. To accomplish this, teachers and students may set specific goals and formulate plans (for example, privately organised remedial classes during school holidays or longer private study time) and execute the plans to achieve the goals. If the KCSE results are good, teachers and students may be motivated to adopt the action as a norm or part of the school and student culture.

3.3.6.5 Drive and reinforcement theories

Baron, *et al.* (2002) posit that these theories assume that people's behaviours are determined by perceived positive and negative consequences, based on the 'Law of Effect'. Reinforcement is defined as any effect that causes behaviour to be repeated or inhibited. Operant conditioning studies carried out by Skinner (1987) cited in Olorube (2006) reveal that if pleasant consequences follow a behaviour, the behaviour tends to continue; but if unpleasant consequences result, the behaviour tends to stop or become extinct. The consequences of behaviour may be tangible (such as money and gifts or good grades in academic activities) or intangible (such as recognition and praise).

The drive and reinforcement theories differ markedly from the needs and cognitive theories and rest on two underlying assumptions, *viz.* that human behaviour is determined by the environment, and that human behaviour is subject to observable laws which can be predicted and changed. Changes in behaviour are the result of an individual's response to events (stimuli) that occur in the environment. More often than not, success, if rewarded, attracts further success while failure is vilified and attracts more failure. In school situations, failure may even attract physically painful consequences such as punishment.

Teachers and parents should ensure that students are feted and receive continuous positive reinforcement in order for them to develop and sustain satisfactory study

habits. Praise and recognition as gestures of appreciation of effort are examples of positive reinforcement that would motivate learners to maintain or even enhance their performances in academics.

3.3.6.6 Phases of learning

Successful learning is a procedural, highly structured activity both at dependent and independent student levels.

Teachers teach students by motivating them to learn, or sensitising them to identify and address their learning needs and addressing them effectively. Teachers then present information, and finally assess the learning outcomes among the learners, re-teach and recheck if necessary. Instructions given by the teacher go a long way in determining a student's motivation to learn and how a teacher engages a student will determine how well a student engages in independent study activities. Many teachers adhere to an oversimplified perception of the process of learning and this offers a good explanation for why many of their students fail to learn (Pajares & Urdan, 2006). The teaching/learning process can be much better if students and teachers gave it the serious attention it deserves.

3.3.6.7 Effective learning

In order for effective learning to take place, the learner must go through all Gagné's eight phases in every learning or study session. Gagné (1985: 72) described the events of learning as shown below:

- Attention;
- Expectancy;
- Retrieval of information to the working memory;
- Selective perception to shut out distracters;
- Encoding: entry of information to the long-term memory;
- Responding;
- Feedback; and
- Cueing retrieval.

A serious breakdown at any one phase or a cumulative breakdown over several phases can bring learning to a halt. When teachers, textbook writers, or others

decide to develop instructional materials or presentations, it is important that they verify that all eight of these events will occur as the learner interacts with the learning materials/instruction. If the instructional designer does not plan for all these eight phases, then either some other person or material must supply the missing steps or effective learning will not occur. The most likely filler of such a gap would be the teacher who is the key to successful academically oriented instructions.

Gagné, Briggs and Wager (1992) explained the eight phases of learning as follows:

- i Attention: Learning is not likely to occur in the absence of attention. Attention is essential for getting information into the working memory and keeping it active. Therefore, the first phase in the learning process is that the learner must focus attention on the learning activity and material. Although this is listed as the "first phase," attention must be maintained throughout the other phases as well. The most crucial teacher role is to capture and sustain the attention and interest of the learner.
- ii Expectancy: During this phase, the learner develops an expectancy that something desirable will happen as a result of the proposed learning process and amount of effort exerted in the right direction. The result is a motivation to engage in the subsequent phases of the learning process. The learner dares dream about his anticipated academic achievements.
- iii Retrieval of relevant information to working Memory: The learner retrieves from long-term memory the structures that will be helpful in learning new information or solving problems that have been encountered. It is also reasonable to assume that it is helpful to activate the relevant thinking strategies in any objective activity engaged in.
- iv Selective perception: During this phase the learner focuses attention on the essential features of the instructional presentation. It is not always possible for teachers to ascertain by simple inspection where students are focusing attention; and learners often fail to learn because they have focused on the wrong information. It is possible for teachers to help learners direct their attention appropriately through strategies as diverse as simply asking them what they are

thinking about and using measures of attention to ascertain where they are focusing (Posner & Peterson, 1990).

Failures at this selective perception can occur either because the presentation inadequately draws attention, because the learner fails to direct attention, or because of a combination of both of these reasons. A frequent source of faulty selective perception is a fundamental misconception about the topic under consideration: the learner may think he/she is focusing on the correct information, when in reality this is a mistake.

Teachers often assume that because their own attention is focused on the right aspects of the presentation, their students must be focusing on the same aspects. It is best to test this assumption and to make corrections when necessary (Owens, 1995).

- v Encoding: Entry of Information into Long-Term Memory Storage. During this phase the learner encodes the information i.e. transfers the information into long-term memory by relating it to information that is already stored there.
- vi Responding: During this phase the learner retrieves and actively uses the information that has been stored in long-term memory. The learner demonstrates through an active performance that the learning has taken place.
- vii Feedback: During this phase the learner determines the degree to which the performance during the previous phase was satisfactory. When the feedback indicates acceptable performance, this usually serves as reinforcement to the learner. Reinforcement interacts heavily with motivation. That is, students who evaluate themselves negatively or extrinsically are likely to develop an orientation toward extrinsic motivation, which is likely to interfere with achievement.
- viii Cueing retrieval: During this phase the learner practises recalling or applying the information after it has been initially learned in order to enhance retention of the information or to transfer the learning beyond its original context to a new application (Daniel, Gilbert & Wagner, 2011).

3.3.6.8 The events of instruction

In formal learning environment, instructions are necessary.

Basing on the eight phases of learning of Gagné, *et al.* (1992), Pashler, McDonald, Rohrer and Bjork (2009), derived nine events of instruction. Instructional events focus on activities that can be performed by the teacher or system and information communication technology in delivering the instruction in order to effectively stimulate or facilitate learning events in the mind of the learner. The following are some of the strategies for implementing instructional activities (Gagné, Briggs & Wager, 1992):

- Gaining attention;
- Activating motivation;
- Informing the learner of the objective;
- Stimulating recall of prerequisite learning;
- Presenting stimulus material;
- Providing learning guidance eliciting the performance;
- Providing feedback;
- Assessing the learner's performance; and
- Promoting retention and transfer;

An additional model on formation and maintenance of productive physical and psychological study habits for improved academic achievement is proposed in this study. Models act as guidance to teachers, parents and students on how to form, shape and modify study habits for improved academic achievement. The model proposed in this chapter assumes that study habits can be systematically planned and developed through well-organised behavioural practices and interactions with the environment geared towards achievement of high academic standards for secondary schools and individual learners. Development of students' study habits can be influenced by both intra and extra-individual elements in learning environments.

Habit formation is a gradual process and starts with isolated actions that develop into consistent behavioural practices. With continued practice and reinforcement, such repeated behaviours become habitual, consistent, and difficult to break. Study habits develop from learning behaviours that have been consistently practised and reinforced either intrinsically, by experiencing the joy of success and achievement of

personal academic goals and objectives, or extrinsically, by receiving tangible or intangible rewards from the learning environment.

3.3.6.9 Conditioning learning

Conditioning may be viewed as “a process of changing behaviour by rewarding or punishing a subject each time an action is performed” (The Free Dictionary, 2014: n. p.).

According to Pal (2011), conditioning that involves the use of consequences to modify the occurrence and form of behaviour is referred to as operant and deals with the modification of voluntary behaviour or operant behaviour. Operant behaviour operates on the environment and is maintained by its consequences, while classical conditioning deals with the conditioning of respondent behaviours, which are elicited by antecedent conditions. Conditioned learning is dependent on reinforcement and punishment. Reinforcement and punishment, the core tools of operant conditioning, is either positive (delivered following a response), or negative (withdrawn following a response). This creates a total of four basic consequences as stipulated below (Flora, 2004).

- Positive reinforcement: (Reinforcement) occurs when behaviour (response) is followed by a stimulus (commonly seen as pleasant) that increases the frequency of that behaviour. In the Skinner's experiment, a stimulus such as food or sugar solution can be delivered when the rat engages in target behaviour, such as pressing a lever.
- Negative reinforcement: (Escape) occurs when a behaviour (response) is followed by the removal of a stimulus (commonly seen as unpleasant) thereby increasing that behaviour's frequency. In the Skinner box experiment, negative reinforcement can be a loud noise continuously sounding inside the rat's cage until it engages in the target behaviour, such as pressing a lever, upon which the loud noise is removed.
- Positive punishment: This is Punishment by contingent stimulation that occurs when behaviour (response) is followed by a pain inducing stimulus, such as introducing a shock or loud noise, resulting in a decrease in that behaviour.

- Negative punishment: (Penalty) (also called "Punishment by contingent withdrawal") occurs when a behaviour (response) is followed by the removal of a stimulus, such as taking away a child's toy following an undesired behaviour, resulting in a decrease in that behaviour (Flora, 2004)..

3.3.7 Factors that Alter the Effectiveness of Consequences

When using consequences to modify a response, the effectiveness of a consequence can be increased or decreased by various factors. These factors can apply to either reinforcing or punishing consequences (Cole, 1990). This consequence may be physical, social or psychological. Hati (2010) enumerated and explained four of such consequences as follows:

3.3.7.1 Satiation/Deprivation

The effectiveness of a consequence will be reduced if the individual's "appetite" for that source of stimulation has been satisfied. Inversely, the effectiveness of a consequence will increase as the individual becomes deprived of that stimulus. If someone is not hungry, food will not be an effective reinforcer for behaviour. Satiation is generally only a potential problem with primary reinforcers, those that do not need to be learned such as food and water (Cole, 1990).

3.3.7.2 Immediacy

After a response, how immediately a consequence is then felt determines the effectiveness of the consequence. More immediate feedback will be more effective than less immediate feedback (Hati, 2010).

3.3.7.3 Contingency

If a consequence does not contingently (reliably, or consistently) follow the target response, its effectiveness upon the response is reduced. But if a consequence follows the response consistently after successive instances, its ability to modify the response is increased. The schedule of reinforcement, when consistent, leads to faster learning. When the schedule is variable the learning is slower. Extinction is more difficult when learning occurred during intermittent reinforcement and more easily extinguished when learning occurred during a highly consistent schedule (Chalabaev, Major, Sarrazin & Cury, 2012).

3.3.7.4 Size

This is a "cost-benefit" determinant of whether a consequence will be effective (Chen, 1997). If the size, or amount, of the consequence is large enough to be worth the effort, the consequence will be more effective upon the behaviour. The magnitude of the expected effects determines the amount of effort exerted in behaviour.

Most of these factors are biological and have a homeostatic function. For example, the biological purpose of the principle of satiation is to maintain the organism's homeostasis. For example, when an organism has been deprived of sugar, the effectiveness of the taste of sugar as a reinforcer is high. However, as the organism reaches or exceeds its optimum blood-sugar levels, the taste of sugar becomes less effective, perhaps even aversive (Marieb & Hoehn, 2007).

3.3.8 Personal Effort Model of Study and Academic Achievement (PEMSAA)

This study seeks to be conceptualized through the proposed PEMSAA model reflected in Figure 3.9 below. The model is based on the principle that individual students' study habits begin with the students' academic desire, locus of control, and self-efficacy followed by development of a motivation that provides an impetus or force propelling them towards setting achievable academic goals and objectives. In turn, such goals will necessitate maximum exploitation of all available learning resources both intra and extra person.

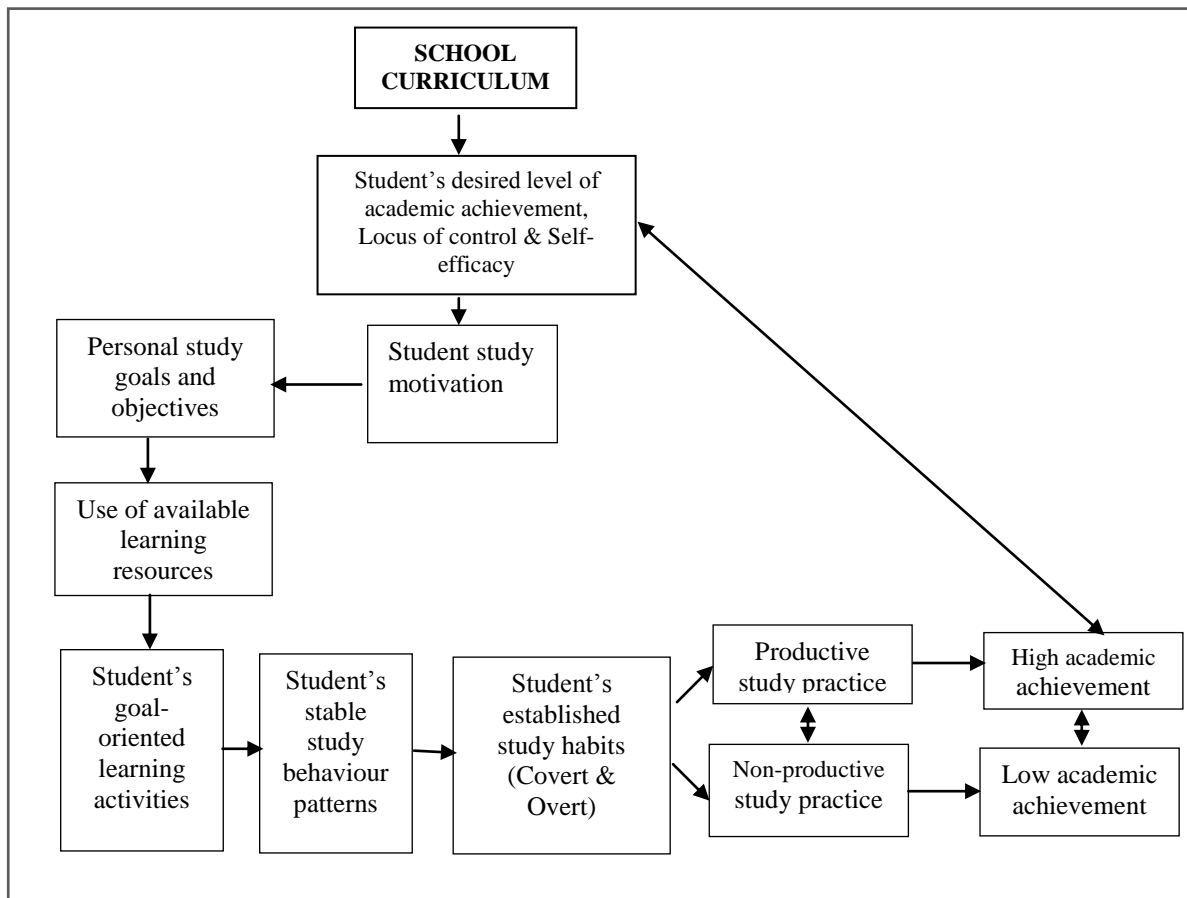


Figure 3.9: Personal Effort Model of Study and Academic Achievement

Source: Researcher - proposed (2014).

As a result, individual learners will engage in such study activities that would enable them to attain personally set academic goals and objectives in the best way possible within the prevailing circumstances. Those who have not desired and set personal standards of academic achievement will not see the need for setting such goals and objectives, hence they will not see the need for personal study efforts apart from adhering to the basic systemic demands e.g. school rules and regulations.

The students' goals determine the effectiveness of study activities they engage in on a daily basis. With practice, study activities graduate into stable study behaviour, which with time and further practice evolve into study habits that are well entrenched in the individual and are hard to break. With such habits coupled with appropriate self-efficacy and locus of control, students are able to effectively resist any external as well as psychological distracters from their study goals.

Study habits may develop quite quickly depending on the levels of intrinsic and extrinsic motivation and reinforcement. Every student desires to perform well in school and national examinations to realise maximum benefits from the learning process and education in general. Under normal circumstances, high academic achievement comes as a result of rich personal study habits, academic discipline and healthy psychological states while poor study habits and psychological states lead to poor academic performance and low achievement. Only in rare cases do students attain good grades in examinations without working hard in their studies, engaging strong emotional gears and properly utilising the resources within their disposal almost in a conditioned manner.

Students who have discovered their productive study habits and practise them perform fairly well in their studies without much of a struggle, stress and anxiety. They are capable of tackling most of the environmental barriers, difficulties and challenges to achieve their academic goals. This was demonstrated in 2008 when a Kenya Certificate of Primary Education candidate, who had operated from internally displaced persons (IDP) camps for the whole examination year, posted comparably good results in the year's national examination (Daily Nation, 2008). Other students have performed well after studying and taking examination in prisons with some performing even better than students in ordinary and regular learning and examination environments.

It is the responsibility of teachers and parents to help students to understand and appreciate their learning strengths and weaknesses and encourage them to use their strengths to alleviate the weaknesses, otherwise students might wrongly think that academic achievements are random occurrences instead of results of individual learners' study efforts. The factors that contribute to the individual level of academic achievement include both individual and environmental. Environmental factors include school, home, and peer while individual includes psychological, physical, experiential, and temperamental. All these factors need to be managed to enable learners to develop effective physical and psychological study habits.

The levels of achievement further inform individual study motivation towards studies helping students to make the necessary adjustments in individual study programmes and develop adequate resilience.

Working hard to get good school grades trains the child to appreciate that the grades need to be worked for and are not acquired accidentally, or by luck. Such a virtue would go a long way in reducing the incidences of cheating in national examinations and, in the long run, reduce corrupt practices in society in future. Hard work includes initiative, diligence, goal-setting, and resourcefulness (Gay, 2000).

Learning styles group common ways that people learn. Everyone has a mix of learning styles. Some people may find that they have a dominant style of learning, with far less use of the other styles. Others may find that they use different styles in different circumstances. There is no right mix. Nor are an individual's styles fixed. One can develop ability in less dominant styles, as well as further develop styles already in use.

Using multiple learning styles and “multiple intelligence” for learning is a relatively new approach. This approach is one that educators have only recently started to recognise. Traditional schooling used (and continues to use) mainly linguistic and logical teaching methods. It also uses a limited range of learning and teaching techniques. Many schools still rely on classroom and book-based teaching, much repetition, and pressured exams for reinforcement and review. The result is that we often label those who use these learning styles and techniques as “bright.” Those who use less favoured learning styles often find themselves in lower classes, with various not-so-complimentary labels and sometimes lower quality teaching. This can create positive and negative spirals that reinforce the belief that one is “smart” or “dumb”, thus defining an individual’s perceived level of self-efficacy.

By recognising and understanding one's own learning styles, one can use more appropriate techniques. This improves the speed and quality of individual learning and understanding of content.

3.4 CHAPTER SUMMARY

This chapter has reviewed several learning and study models and established that different models view learning from different perspectives. Theorists have argued that different learners can benefit from applying different models in their learning and studies. The brain also plays a major role in the choice of the most effective model

and style of study. The following is a summary of some of the models and styles reviewed in this chapter.

- The Cognitive Theory of Multimedia Learning is based on three main assumptions that there are two separate channels (auditory and visual) for processing information; there is limited channel capacity; and that learning is an active process of filtering, selecting, organising, and integrating information gathered from the environment.
- Problem-Based Learning is an instructional method of hands-on, active learning centred on the investigation and resolution of messy, real-world problems. The model is based on open-ended problems, self-directed learners, and teacher as facilitator and learner as a problem solver.
- Experiential learning is a four-stage cyclical model of learning, based on a holistic perspective that combines experience, perception, cognition, and behaviour. Its key concepts include learning cycles, learning styles, concrete experience, reflective observation, abstract conceptualisation and active experimentation.
- Discovery learning is a method of inquiry-based instruction that believes that it is best for learners to discover facts and relationships for themselves holding that knowledge thus acquired enjoys high levels of retention.
- Situated Learning Theory posits that learning is unintentional and situated within authentic activity, context, and culture.
- Attribution Theory attempts to explain the world and to determine the cause of an event or behaviour (e.g. why people do what they do). It is mostly concerned with attribution, locus of control, stability and controllability of behaviour.
- Multiple intelligence theory posits that there are several ways people understand in the world. Gardner (2006) described seven intelligences: linguistic, logical-mathematical, visual-spatial, body-kinaesthetic, musical-rhythmic, interpersonal, and intrapersonal. Individuals possess each of these forms of intelligence in varying magnitudes.

Phases of learning and events of instruction have been explored and a new model of study habits proposed. Social cognitive theory and learning models have been reviewed and explained in relation to learning environment and behaviour with insights drawn from cognitive learning styles and conditioning learning processes.

In conclusion, this chapter has established that there are many different models of study and learning from which teachers and learners can select a model or models that best suit their teaching and learning situations. Instructors have a wide range of choice with regard to students' learning styles and modalities.

Chapter 4 which follows describes the research design and methodological procedures pertaining to the empirical part of the study.

CHAPTER 4

RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

This chapter is empirical in nature and provides and explains the research design and methodology applied in this study. This chapter first highlights that a quantitative design was adopted, which in turn provides the rationale for the sampling methods and the data collection tools as well as the data analyses that were used.

4.2 RESEARCH DESIGN

Research design provides the glue that holds the research project together. A design is used to structure the research, to show how all of the major parts of the research project – the samples, measures and variables – work together to try to address the central research questions (Kothari, 2008). This study adopted an exploratory descriptive survey approach as represented in a mainly quantitative method research design. This design gathers numerical data that is analysed, explained and interpreted using statistical analyses and testing of study hypotheses such as the hypotheses provided in section 1.4 in chapter one. It also allows for generalisation of its findings and conclusions (Kothari, 2008).

4.3 APPROACH

The study applied mainly quantitative research approaches in its data collection and analysis. This implies that the researcher collected and analysed quantitative data gathered using a quantitative questionnaire for the study and test study hypotheses and generalise findings (Kumar, 2005). Quantitative component of the study was a self-administered survey which requires individuals to respond to a series of statements or questions about themselves on a questionnaire (Kumar, 2005).

4.4 TARGET POPULATION

Target population can be defined as all people or items with the characteristic associated with the phenomenon the researcher wishes to understand (Creswell, 2008).

Because there is very seldom enough time or money to investigate the entire population, the researcher strives to select a representative sample (or subset) of the target population that will represent the entire population of interest in the study (Creswell, 2008).

The target population for this study comprised all Form 4 students in public secondary schools in Embu County, Kenya. Form 4 students were selected because they were in their final year of secondary education. Only those Form 4 students who had been in their current secondary school for the previous two years before January 2014 and had taken end-of-trimester examinations for at least six consecutive school trimesters were eligible for inclusion in the sample. A trimester consists of three months of continuous school attendance followed by a one-month vacation. A year comprises of three trimesters each running for three months with end-of-trimester examinations.

4.5 SAMPLING

Sampling may be defined as the process of selecting units (e.g., people, organisations) from a population of interest to represent the population so that, by studying the sample, the researcher would be able to generalise the findings from the sample to the population from which the sample was drawn (Creswell, 2008). Sampling is part of statistical practice concerned with the selection of a representative subset of individual observations within a population of individuals. The intent of sampling was to collect measurements on the sample which will yield knowledge about the population of concern, especially for the purposes of making predictions based on statistical inference, since it is not practical or possible to study the whole population (Salant & Dillman, 1994).

The research sampling strategy selected Embu County for the purpose of this study because of its convenience of access to the researcher. Respondent schools and students were selected through random stratified sampling. This ensured that respondents were drawn from all relevant levels and the relevant academic achievement quartiles of the target public secondary schools in the selected county. Secondary schools are categorised into three levels: National, Provincial/County and District. National schools admit the cream of qualifiers from primary schools country wide, while provincial/County and District schools restrict most of their admissions to

the county and sub-county respectively. A county comprises several sub counties/districts. District or sub-county secondary schools are the last to admit qualifiers from primary school once national and county/provincial schools have done their selection of students. All county schools are fully residential (boarding) school level. The performance level of students was also considered in sample selection.

4.5.1 The Sampling Frame

A list of members of the population of interest is referred to as the sampling frame. The specific sampling frame for this study was a six trimester merit rank list of all Form 4 students the 2014 cohort from which the topmost five and the lowermost five were purposively selected to participate in the study. This merit rank list was derived from end trimester exams rank lists for the preceding six consecutive trimesters (two years) for each selected school (see template – Annexure 4).

4.5.2 Sampling Techniques

In the context of this study the researcher opted to use probability sampling (simple random sampling and random stratified sampling) which leads to the possibility to be able to generalise the findings.

4.5.2.1 Simple random sampling

McLeod (2010) explained that if each member of the sample (sampling unit) is selected by the equivalent of drawing lots and each sampling unit has an equal chance of being selected to the sample, the sampling technique is referred to as simple random sampling. If the researcher identifies and divides the target population into respective strata from which representative samples are drawn then this becomes random stratified sampling. This study selected respondent students using purposive sampling from 50 schools out of 149 public schools comprising county and district level schools or 32%. The county had 156 public schools with Form 4 classes in 2014. Five schools were used during piloting and the two newly designated National schools were omitted. The researcher could not use all 149 schools and believed that 50 schools (32%) was sufficient. According to Charlesworth, Lawton, Lewis, Martin and Taylor (2001), in applied management research, it is common to take the figure of 30 as a useful safe minimum size for the set of data on which the researcher will conduct the analysis.

4.5.2.2 Random stratified sampling

Stratified random sampling is a method of sampling that involves the division of a population into smaller groups known as strata where these strata form natural categories within the population. In other words, in stratified random sampling, the strata are formed based on members' shared attributes or characteristics. A random sample from each stratum is taken in a number proportionate to the stratum's size when compared to the population. These subsets of the various strata are then pooled to form a random sample. The main advantage with random stratified sampling is that key population characteristics are captured in the sample (Investopedia, n. d.).

In the sample for this study, the classification of schools was taken into account when sampling schools for the quantitative component of the study. Two-phase stratified and simple random sampling techniques were used to select 50 secondary schools which grouped the schools into county and district levels and then students from the selected schools were purposively selected. Under purposive sampling, five uppermost and five lowermost performers were selected from merit lists compiled over six semesters showing the mean grade of students' six end trimester exams developed for each selected school from their class performance records for 2012 and 2013. The five topmost and lowermost performers on the grand merit list represented the upper and lower quartile academic achievers respectively. School level and performance level of students was incorporated in the sampling design. The layout of the sampling design was as reflected in Table 4.1 below.

Table 4.1: Sampling design: Layout of school structure strata and number of schools and students selected.

Level of schools selected	Gender	No. of schools selected		Total No. of students selected	
		Male	Female	Uppermost	Lowermost
County	Mono	4	5	45	45
District	Mixed	41		205	205
Total		50		250	250

Table 4.1 above represents the sample of the research population. The sample size comprised a total of 500 students. From each selected school, ten students were selected for the study.

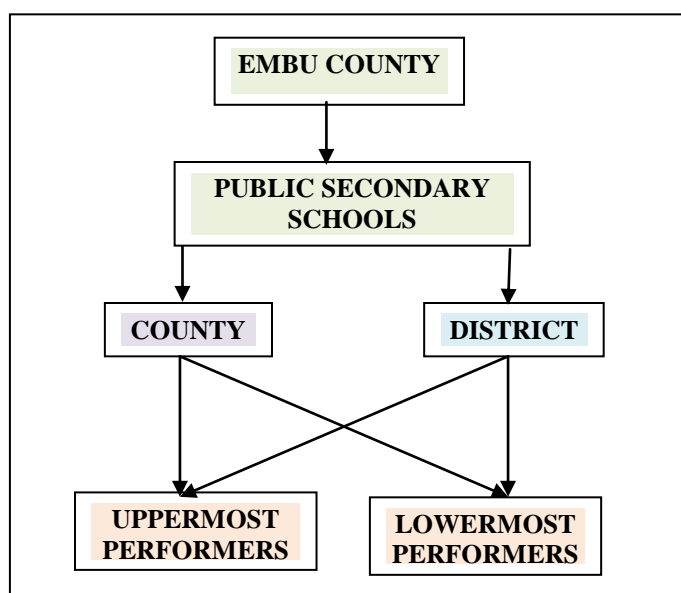


Figure 4.1: Structure of the sampling process

From Figure 4.1 above it can be observed that the research involved public secondary schools in Embu County. The levels of school involved were County and District and only the uppermost and lowermost academic performers were selected to represent their respective quartiles.

Embu County was conveniently sampled, District and County schools were selected by random stratified sampling, Upper and Lower quartile respondents were selected using intensity sampling.

4.5.3 Procedural Allocation of Students to Upper or Lower Quartile Academic Achievers Sub-Samples

The sample was divided into upper and lower quartile groups on the grand merit list considering students' performance mean scores over six trimesters.

Students take trimester examinations at the end of every three months before breaking for a one month vacation after taking end term examinations. Individual students' grades for six consecutive end trimester examinations were used to calculate a grand mean score for each student. In order to do this the researcher

liaised with the school curriculum master from each selected school. Any selected school that did not have six trimester merit lists was replaced.

From the six end-of-trimester academic performance merit lists, the researcher worked with the curriculum master to compute one grand rank list for each school showing students' average mean grade on the six trimester examinations. From these lists, the researcher selected the uppermost (first) and lowermost (last) five performance positions rank making a total of ten students from each selected school to represent the upper and lower quartile academic achievers in each selected school. The research questionnaire was administered to the selected students from each selected school in one supervised sitting lasting a maximum of 20 minutes. The researcher made arrangements with the school principals and curriculum coordinators for this supervised data collection exercise such that the school routine programmes were not interfered with. Although the same in content, the questionnaire for upper and lower achievers were marked differently on the cover page i.e. Upper quartile ▲, Lower quartile ▼. Data collection for this study was done during the months of January and February, 2014.

4.6 RESEARCH INSTRUMENT

The study used a multi-sectional self-administered questionnaire (see Annexure 1). A questionnaire may be viewed as a form containing a set of questions, especially one addressed to properly selected sample of subjects as a way of gathering reliable and appropriate information for a survey (Cresswell & Miller, 2000). It is a set of open and or closed ended questions asked to respondents, and designed to extract specific information. The basic purposes of a questionnaire include collecting appropriate data; making data comparable and amenable to analysis; minimising bias in formulating and asking questions; and making questions engaging and varied (Kreuter, Presser & Tourangeau, 2008).

The research instrument was a multi-sectional questionnaire comprising test items sourced from relevant online Internet sources on study habits, locus of control and self-efficacy. The items comprising the questionnaires were constructively adapted by the researcher with guidance from the research supervisor. The researcher also requested local university education lecturers, post-graduate students and

secondary school teachers to critically assess and evaluate the instrument to ascertain its content and face validity.

The questionnaire test items also probed students' bio-demographical attributes of age, gender, level of school, their self-assessed most common grade range performance in trimester examinations and residence status.

Other than the bio-demographical part, the questionnaire comprised three main subsections: Study Habits (S.H.), Locus of Control (LoC) and Self-Efficacy (SE) as briefly explained below.

- **Section SH (Study Habits)**

A 3-point Likert self-rating scale was used to gather information on respondents' cumulative general level of habitual study practices. Questions on study habits touched, cumulatively, on aspects that constitute performance-enhancing study practices such as motivation, time management, concentration, consultations, formative self-testing, and preparation for tests and exams.

Study Habits (SH) section of the questionnaire comprised 23, three-point Likert items with statements touching on students level of learning motivation, time management, concentration, stimulus discrimination reading, formative testing, test taking strategy and consultations with teachers and academic seniors. The respondent was required to indicate how often s/he performed the activity stated in each of the 23 items stating whether always, sometimes or never. For positive statements, 'always' was given a score of 3 points while, in the negative statements, 'always' was given a score of 1. The middle position, 'sometimes' attracted a score of 2. The score, up to a maximum of 69, indicated the student's level of study habit.

- **Section LoC (Locus of Control)**

The Locus of Control (LoC) section comprised 19 item questions with two given response options 'a' and 'b' each of which indicated either the student's tendency towards internal or external locus of control. Responses (a) on internal locus of control were given a score of 2 while responses (b) implying external locus of control were given a score of 1. The total sum of the responses to the 19 items indicated

one's level of internal locus of control up to a maximum of 38. The higher the score, the higher the tendency towards internal locus of control.

- **Section SE (Self- Efficacy)**

Section Self-efficacy (SE) comprised 12 item statements on a 4-point Likert scale. Students were required to express the level at which they considered the statements true. In positive statements exactly true option was given 4 points while in negative statements exactly true was given a score of 1. The maximum score was 48 and the students score indicated his / her level of self-efficacy.

4.7 PILOT STUDY

A pilot study may be defined as a small scale preliminary study conducted prior to the main research in order to check the feasibility or to improve the design of the research. It is a smaller version of a study carried out before the actual investigation is done. Researchers use pilot data to refine or modify the research methodology for the main study (Baker, 1994).

To ensure that the questionnaire administered in the main study yielded valid and reliable data, a pilot study was conducted to identify misleading/ambiguous questions and statements and to iron out questionnaire administration glitches. The pilot study was carried out in a few selected schools that did not partake in the main research study. The pilot study enabled the researcher to identify the instruments' weaknesses and inconsistencies to be addressed before the actual study (Creswell & Miller, 2000). The pilot study was carried out in the second week of the first trimester of 2014. It involved five schools; two at county/provincial and three at district level. A total of 50 Form 4 students participated in pilot study. This led to minimal adjustments to the research tool, such as including + (Plus grades) in grade ranges.

As previously mentioned, this study collected quantitative data (Patton, 2002). Data was collected during the first school trimester in 2014. Schools in Kenya run for three three-month sessions separated by one-month break. The questionnaires were administered by the researcher assisted by school curriculum coordinators and Form 4 class teachers.

4.8 DATA PRESENTATION AND ANALYSIS

Data was presented in tables, histograms and line graphs for easy view readability, understanding and interpretation.

Analysis of data is a process of inspecting, cleaning, summarizing transforming, and modeling data as dictated by the specific research questions and hypotheses formulated as part of research methodology. The purpose of analysis is to highlight useful information, summarise results, make deductions, and suggest recommendations and support decision making (Tabachnick & Fidell, 2007).

This study data made use of descriptive and inferential statistical techniques as indicated in chapter 1 section 1.5.2.3.

4.8.1 Descriptive Statistics

Descriptive statistics comprise, for example, measurements such as mean, median, standard deviation that summarize and interpret properties of a set of data (sample) and discuss the sample being studied but do not make inferences about the broader population (Nick, 2007).

Descriptive statistics describe the main features of collection of data. Descriptive statistics are distinguished from inferential statistics, in that descriptive statistics aim at summarising a sample, rather than using the data to learn about the population that the sample of data is thought to represent. Even when a data analysis draws its main conclusions using inferential statistics, descriptive statistics are generally also presented.

4.8.2 Inferential Statistics

Statistical techniques that employ probability theory to deduce the properties of a population from the analysis of the sample fall in the category of inferential statistics. Inferential statistics make provision for generalisation of sample results to the broader population and is concerned with the precision and reliability of the inferences which have been deduced (Merriam, 2002).

In statistics, statistical inference is the process of drawing conclusions from data that are subject to random variation, for example, observational errors or sampling

variation. Initial requirements of such a system of procedures for inference and induction are that the system should produce reasonable answers when applied to well-defined situations and that it should be general enough to be applied across a range of situations. Inferential statistics are used to test hypotheses and make estimations using sample data (Laerd Statistics, n. d.).

The outcome of statistical inference may be an answer to the question "what should be done next?", where this might be a decision about making further experiments or surveys, or about drawing a conclusion before implementing some organisational or governmental policy.

Statistical analysis was conducted with the Statistical Package for Social Sciences (SPSS).

The following research questions and hypotheses guided the study:

Research questions:

- What level of study habits, self-efficacy and internal locus of control do secondary school students have?
- Are there mean score differences in study habits, self-efficacy and internal locus of control between uppermost and lowermost academic achievers in secondary school?
- Are there mean score differences in study habits, self-efficacy and internal locus of control among secondary school students of different ages?
- Are there mean score differences in study habits, self-efficacy and internal locus of control between male and female students in secondary school?
- Are there mean score differences in study habits, self-efficacy and internal locus of control among secondary school students attending schools of different levels?
- Are there mean score differences in study habits, self-efficacy and internal locus of control among secondary school students of different residence status?

Research hypotheses:

H₀₂ There are no significant mean differences in study habits, self-efficacy and internal locus of control between uppermost and lowermost academic achievers among secondary school students.

H₀3 There are no significant differences in mean study habits, self-efficacy and internal locus of control among secondary school students of different ages.

H₀4 There are no significant inter-gender mean differences in study habits, self-efficacy and internal locus of control among secondary school students.

H₀5 There are no significant differences in mean study habits, self-efficacy and internal locus of control among secondary school students attending different levels of school.

H₀6 There are no significant differences in mean study habits, self-efficacy and internal locus of control among secondary school students of different residential status.

4.9 ETHICAL CONSIDERATIONS

The researcher worked with the supervisor in the adaptation and construction of the research instrument. The researcher agreed with the supervisor that the data targeted was not sensitive and the instrument could be used for the intended purpose.

An introductory letter was secured from the UNISA office at KCA University, Kenya, which the researcher used to obtain authority from the county Director of Education to allow him access to schools and to administer the questionnaires in Embu County.

In every selected school, the researcher discussed the research aim with the school principal who thereafter introduced the researcher to the school curriculum coordinator. After a discussion on the data collection and sampling procedure, a request for assistance was made.

Students' consent was requested through schools' curriculum coordinators. The Form 4 students were requested to permit the researcher with the assistance from the curriculum coordinator to select ten of them to help in filling in the questionnaire. They were also informed that they could withdraw their consent and terminate participation any time during the study without any repercussions whatsoever. Partial research funding was granted by the Directorate of Student Funding at the University of South Africa.

Chapter 5 that follows presents data and results of the empirical study.

CHAPTER 5

RESULTS OF THE EMPIRICAL STUDY

5.1 INTRODUCTION

In Chapter 5 information obtained through the administration of research instrument is conveyed and analyses and discussions of the results are presented. Data was collected from 500 form 4 students in 50 public secondary schools selected in Embu County.

A summary of the research findings is presented and the researcher has determined whether the null hypotheses are rejected or in favour of. In doing so, the relationship between students' study habits, locus of control and self-efficacy and performance has been analysed. The influence of selected bio-demographic variables on study habits, self-efficacy and internal locus of control is also presented.

5.2 RESEARCH AIM: ADDRESSING THE RESEARCH PROBLEM

The specific research problem was to find out how upper and lower quartile academic achievers in secondary schools in Embu County, Kenya differ in study habits, self-efficacy and internal locus of control and how these factors are influenced by students' age, gender, school level and residential status.

Students' bio-demographic variables such as gender, age, school level, grade range and residential status and their influence on study habits, self-efficacy and internal locus of control were also factored in. The questionnaire used in data collection consisted four sections: DI which had 5 bio-demographic items; SH section consisting of 23 items on study habits; LoC section consisting of 19 items on locus of control; and SE section consisting of 12 items on self-efficacy.

5.3 STATISTICAL TECHNIQUES

The statistical techniques used to answer research questions derived from the variables mentioned under 5.2 above included percentages, means and ANOVA.

5.4 RESULTS AND DISCUSSIONS

This section is structured into two main sections Descriptive and inferential statistics.

It is imperative to note that questionnaire return rate was ninety nine percent mainly because the administration in each selected school was done in one sitting and supervised. Only 3 questionnaires had errors in their completion.

5.4.1 Descriptive Statistics

Some measures that are commonly used to describe a data set include measures of central tendency and measures of variability or dispersion. Measures of central tendency include the mean, median and mode, while measures of variability include the standard deviation or variance, the minimum and maximum values of the variables, kurtosis and skewness (Jackson, 2009). The section below presents the descriptive statistics that were derived from the results of the survey.

5.4.2.1 Frequencies by demographic variables: age, gender, level of school, grade and residence status.

The frequencies shown below follow the order in which the questions were asked in the questionnaire, namely:

- Age;
- Gender;
- Level of school;
- Grade range; and
- Residential status.

Figure 5.1 below indicates that 7% students were aged 16 yrs; 31.7% students 17 yrs; 32.3% students 18 yrs; 24.3% students 19 yrs and only 4.6% were of ages outside the age range of 16-19 years. The majority of form four students (80%) were aged 17-19 years.

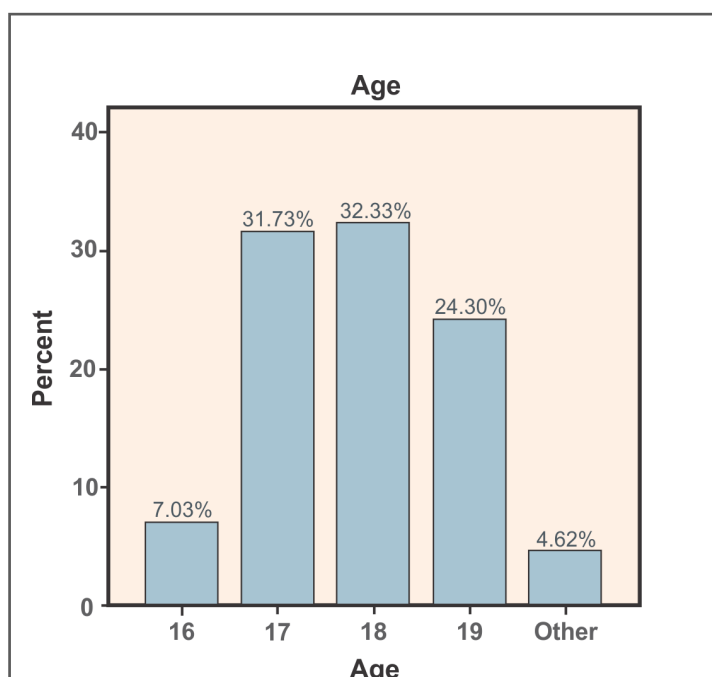


Figure 5.1: Age

The majority (80%) of uppermost and lowermost students sit their KCSE at age 17-19. Some studies have found age to be significant in academic performance with older students performing better than younger ones (Abubakar & Uboh, 2010).

Figure 5.2 below shows that males comprised 50.8% while females made 49.2. Gender parity in quality of academic achievement in secondary education seems to have been achieved.

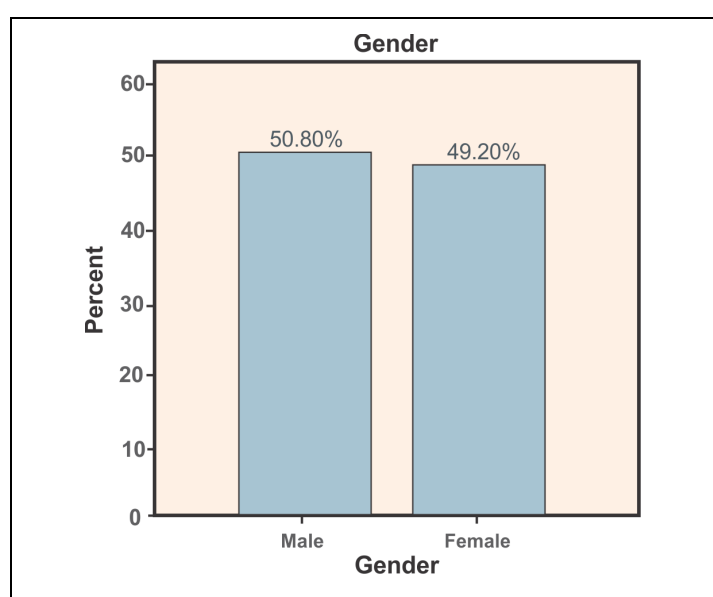


Figure 5.2: Gender

This finding indicates that a near 100% gender parity for equitable quality of achievement and access to education for boys and girls has been achieved. Many earlier studies have shown significant differences in academic achievement with some in favour of either gender especially in specific subjects in the curriculum (Fryer & Levitt, 2010).

As can be observed from Figure 5.3 below, 18.7% of the students were drawn from the county level of school while the majority 81.3% were drawn from district schools.

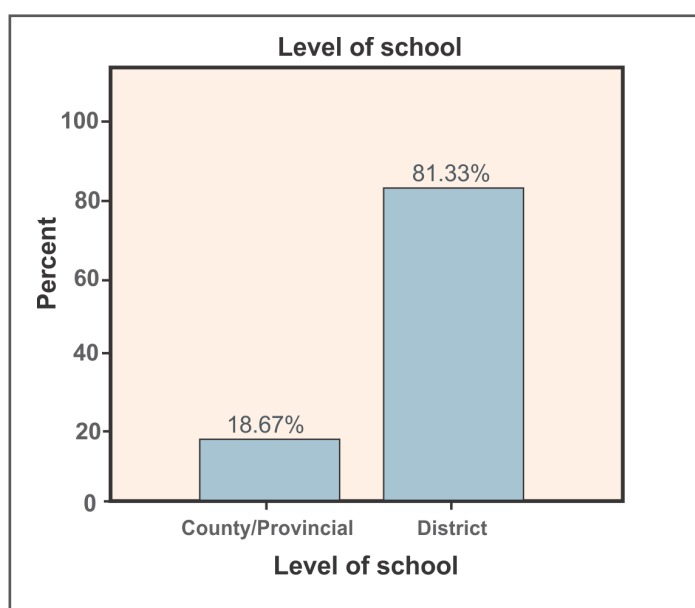


Figure 5.3: Respondents' school level

County schools are costly and unaffordable for many families. This has led to high demand and popularity of district schools and especially non-residential schools which are less expensive owing to the fact that students operate from home going to school only for student-teacher contact hours. All county schools offer residential status and charge high fees. Most of the institutions of learning are either non-residential or hybrid. These institutions include universities both public and private that no longer peg admissions on bed capacity. This has in turn improved access to education due to reduced costs.

Many students and parents feel that academic performance depends on the level of school one attends instead of students' effort (Boggiano, Flink, Shields, Seelbach & Barrett, 1993; Njeru & Orodho, 2003). It becomes hard to perform especially when enrolled in a school they may not like purely because of costs.

From Figure 5.4 below, it can be observed that the extreme grades have very low student population. Only 3.61% scored grade A-B+ (1) while only 5.61% performed at grade range D-E (4). 45.09% performed at grade B-C+ (3) while 45.69% performed at grades C-D+ (3).

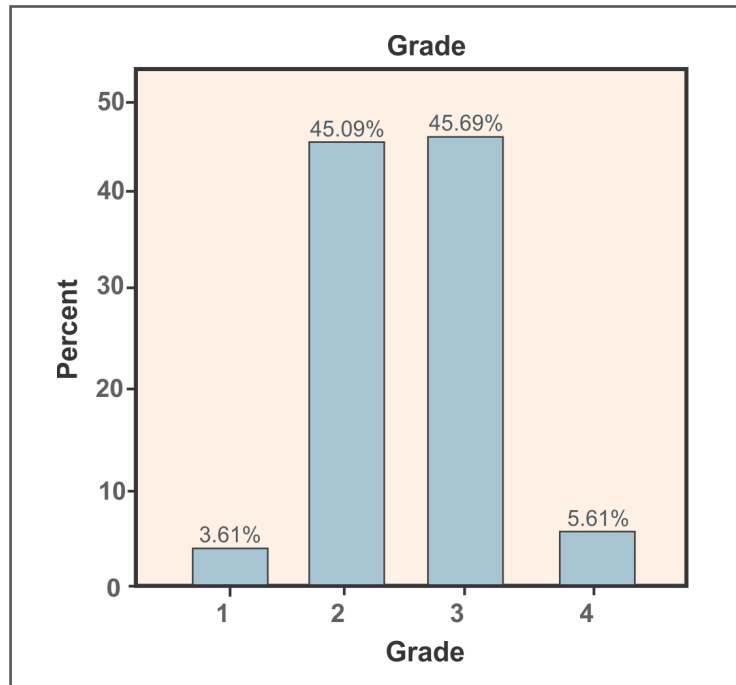


Figure 5.4: Four level grade range

Following this scenario it became prudent to combine the results for Grade levels 1 & 2 and 3 & 4 to come up with two uppermost and lowermost performance respectively, instead of four. These two grade levels represent the upper and lower quartile academic achievers respectively in the study. Normally, only about a quarter of all KCSE candidates score grade C+ and above (Grade level 1 and 2).

Figure 5.5 below indicates that grades 1 & 2 that had 18 and 225 respondents respectively combined to make the uppermost performance group (Upper quartile) while levels grades 3 & 4 that had 28 and 228 respondents combined to make the lowermost performance group (Lower quartile).

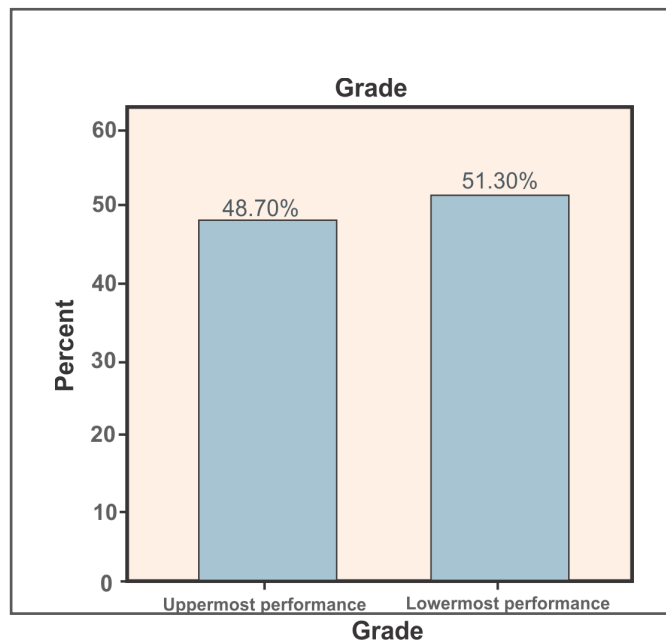


Figure 5.5: Two level grade range

A few (1.30%) of respondents from the uppermost performance group appear to have erroneously reported to belong to the lowermost performance group. The item on grades required recall of some historical information and some students may not be good at this. The sub-samples were numerically predetermined through random stratified sampling.

From Figure 5.6 below, it can be observed that boarders (residential) students comprised 36.3% while day scholars (non-residential) comprised the majority 63.7%.

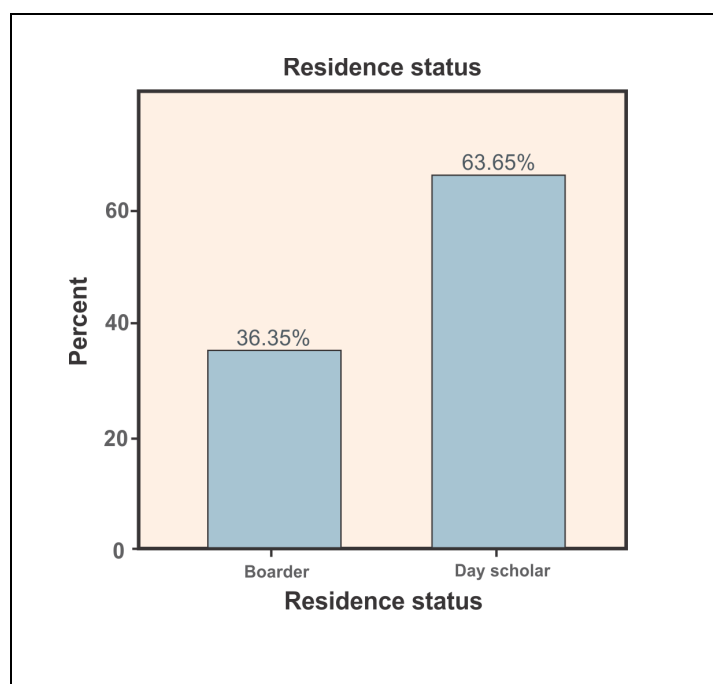


Figure 5.6: Residence status

Day schools (non-residential) are community-established, government-assisted secondary schools which have significantly improved accessibility to secondary school education.

This indicates that majority of students are day scholars. Day scholar student status has greatly increased access to secondary education due to reduced school fees. Some district schools are wholly residential while some day schools offer limited boarding facilities. Were it not for the costs, the majority of parents and students would prefer residential to non-residential studentship (Wachira, 2009; Jagero, Agak & Ayodo, 2010).

From Table 5.1 below, it can be observed that study habits (SH) had a mean of 42.8357, median 43.000, standard deviation 5.6729, skewness -.179, minimum 23.00, maximum 57.00.

Table 5.1: Students' study habits (SH)

Statistics		
N	Valid	499
	Missing	1
Mean		42.8357
Median		43.0000
Standard. Deviation		5.67290
Skewness		-.179
Standard. Error of Skewness		.109
Kurtosis		-.040
Standard. Error of Kurtosis		.218
Range		34.00
Minimum		23.00
Maximum		57.00

The median was to the right of the mean hence most of the scores fell above the mean. The maximum possible score was 69. This is an indication that majority of the students scored well above the mean (42.8357) and can therefore be considered to generally have good study habits normally distributed in the population of high and low academic achievers as indicated by the histogram below.

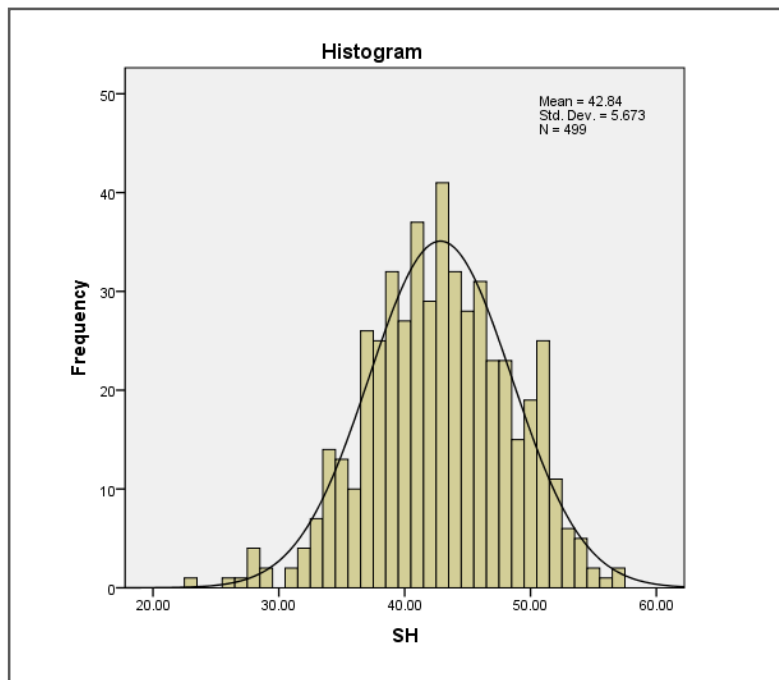


Figure 5.7: Study habits (SH)

Table 5.2 below shows that Self-Efficacy (SE) had a mean of 31.8994, median 32.000, Standard Deviation 4.1811, Skewness -.155, Minimum score 16.00, maximum score 45.00.

Table 5.2: Self-efficacy (SE)

Statistics		
N	Valid	497
	Missing	3
Mean		31.8994
Median		32.0000
Standard Deviation		4.18112
Skewness		-.155
Standard Error of Skewness		.110
Kurtosis		.365
Standard Error of Kurtosis		.219
Range		29.00
Minimum		16.00
Maximum		45.00

The median 32.000 was to the right of the mean indicating that most of the scores fall above the mean. This is an indication that majority of the students' scores were above the mean of 31 out of a possible 48, and can therefore be considered to have a generally high level of self-efficacy with normal distribution in the population of high and low academic achievers as indicated by the histogram. However, although students strongly feel efficacious and believe in their ability, the same is not reflected in their academic performance.

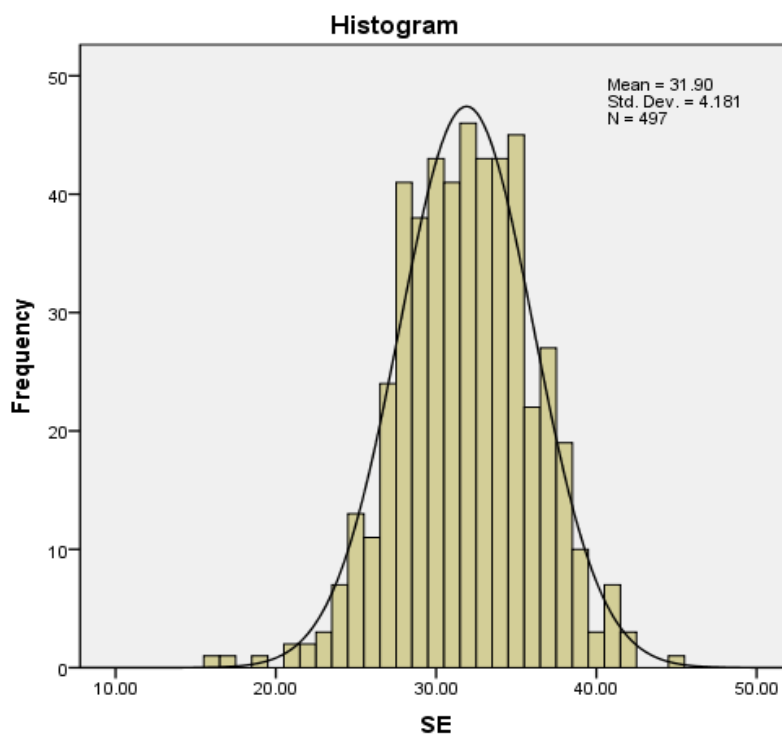


Figure 5.8: Self-efficacy (SE)

Table 5.3 below reveals that internal locus of control (ILOC) had a mean of 33.0701, median 34.000 Standard Deviation 3.7557, Skewness -1.326, Minimum 21.00, maximum 38.00.

Table 5.3: Internal Locus of Control (ILOC)

Statistics		
N	Valid	499
	Missing	1
Mean		33.0701
Median		34.0000
Standard Deviation,		3.75573
Skewness		-1.326
Standard Error of Skewness		.109
Kurtosis		.940
Standard Error of Kurtosis		.218
Range		17.00
Minimum		21.00
Maximum		38.00

The median 34.000 was to the right of the mean hence most of the scores fall above the mean. This is an indication that majority of the students scored above the mean, an indication that secondary school students can be considered to believe in possession of generally good internal locus of control, although not normally distributed in the population of high and low academic achievers as indicated by the norm curve (Chalabaev, Major, Sarrazin & Cury, 2012).

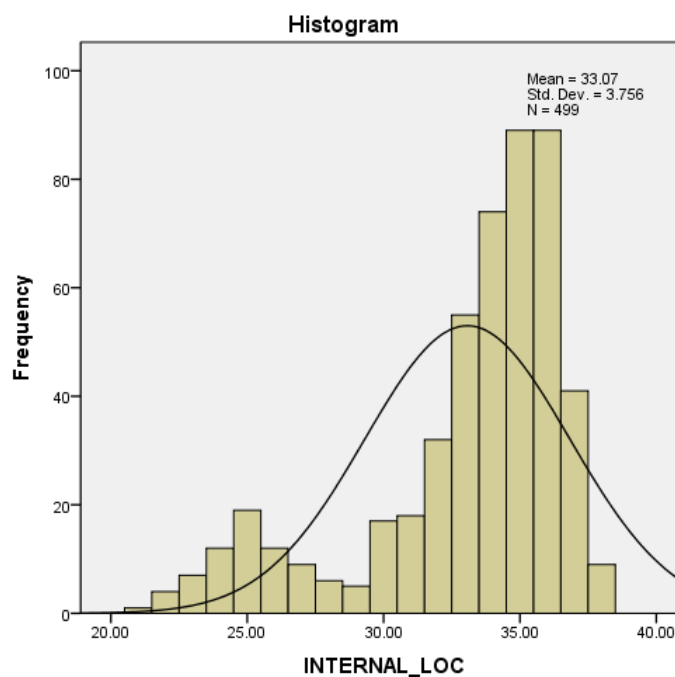


Figure 5.9: Internal Locus of Control (ILOC)

5.4.3 Inferential Statistics

This section presents the analyses of statistical differences using analyses of variance (ANOVA) for the purposes of rejecting or failing to reject null hypotheses of the study at the confidence level of $\alpha = 0.05$. Each research question and the null hypothesis derived from it, is presented alongside the statistical analysis (Hand, 2004).

5.4.2.1 Grade descriptives at four student-reported levels of high and low performers

From Table 5.4 below, the mean study habits (SH) for grade range A-B+ (1) posted a mean of 39.89 with a standard deviation of 3.79, Lower and upper bounds of the confidence interval of the 38.01 and 41.77 respectively. The minimum and maximum scores were 33.00 and 48.00 respectively.

Table 5.4: Descriptives

		N	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
SH	1	18	39.8889	3.78680	.89256	38.0058	41.7720	33.00	48.00
	2	225	41.6178	4.63350	.30890	41.0091	42.2265	23.00	53.00
	3	228	44.1140	6.22240	.41209	43.3020	44.9260	27.00	57.00
	4	28	44.1071	6.87636	1.29951	41.4408	46.7735	28.00	54.00
	Total	499	42.8357	5.67290	.25395	42.3367	43.3346	23.00	57.00
SE	1	18	29.3889	3.51700	.82896	27.6399	31.1379	26.00	39.00
	2	223	31.2870	3.99979	.26785	30.7591	31.8148	16.00	45.00
	3	228	32.6491	4.14279	.27436	32.1085	33.1897	19.00	42.00
	4	28	32.2857	5.03217	.95099	30.3344	34.2370	17.00	42.00
	Total	497	31.8994	4.18112	.18755	31.5309	32.2679	16.00	45.00
INTERNAL_LOC	1	18	35.1111	2.02598	.47753	34.1036	36.1186	30.00	38.00
	2	225	34.4844	1.89948	.12663	34.2349	34.7340	28.00	38.00
	3	228	31.7675	4.38996	.29073	31.1947	32.3404	22.00	37.00
	4	28	31.0000	5.23521	.98936	28.9700	33.0300	21.00	37.00

	Total	499	33.0701	3.75573	.16813	32.7398	33.4005	21.00	38.00
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From Table 5.4 above, the mean Self-Efficacy (SE) for grade range A-B+ (1) posted a mean of 29.39 with a standard deviation of 3.52, Lower and upper bounds of the confidence interval of the 27.64 and 31.14 respectively. The minimum and maximum scores were 26.00 and 39.00 respectively.

From Table 5.4 above, the mean Self-Efficacy (SE) for grade range B-C+ (2) posted a mean of 31.29 with a standard deviation of 4.00, lower and upper bounds of the confidence interval of the 30.76 and 31.81 respectively. The minimum and maximum scores were 16.00 and 45.00 respectively.

From Table 5.4 above, the mean Self-Efficacy (SE) for grade range C-D+ (3) posted a mean of 32.65 with a standard deviation of 4.14, Lower and upper bounds of the confidence interval of the 32.11 and 33.19 respectively. The minimum and maximum scores were 19.00 and 42.00 respectively.

From Table 5.4 above, the mean Self-Efficacy (SE) for grade range D-E (4) posted a mean of 32.29 with a standard deviation of 5.03, Lower and upper bounds of the confidence interval of the 30.33 and 34.24 respectively. The minimum and maximum scores were 17.00 and 42.00 respectively.

From Table 5.4 above, the mean Internal Locus of Control (ILOC) for grade range A-B+ (1) posted a mean of 35.11 with a standard deviation of 2.03, Lower and upper bounds of the confidence interval of the 34.10 and 36.12 respectively. The minimum and maximum scores were 30.00 and 38.00 respectively.

From Table 5.4 above, the mean Internal Locus of Control (ILOC) for grade range B-C+ (2) posted a mean of 34.49 with a standard deviation of 1.90, Lower and upper bounds of the confidence interval of the 34.23 and 34.73 respectively. The minimum and maximum scores were 28.00 and 38.00 respectively.

From Table 5.4 above, the mean Internal Locus of Control (ILOC) for grade range C-D+ (3) posted a mean of 31.77 with a standard deviation of 4.39, Lower and upper bounds of the confidence interval of the 31.19 and 32.34 respectively. The minimum and maximum scores were 22.00 and 37.00 respectively.

From Table 5.4 above, the mean Internal Locus of Control (ILOC) for grade range D-E (4) posted a mean of 31.00 with a standard deviation of 5.24, Lower and upper bounds of the confidence interval of the 28.97 and 33.03 respectively. The minimum and maximum scores were 21.00 and 37.00 respectively.

ANOVA was done for grades at two-levels i.e. Uppermost and Lowermost academic achievers.

Table 5.5 below shows that 243 (48.7%) reported to perform at uppermost level or the top two performance grade ranges while 256 (51.3%) reported to perform at the lowermost level or the bottom two performance grade ranges (See table 5.4).

Table 5.5: Grades ANOVA at two levels

Grade		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Uppermost performance	243	48.7	48.7	48.7
	Lowermost performance	256	51.3	51.3	100.0
	Total	499	100.0	100.0	

It appears that at least six students from the uppermost performance group erroneously indicated that they belong to the lowermost performance group on the questionnaire thus increasing the number of respondents in lowermost group by six and reducing the number of the uppermost group by at least six. The questionnaire was administered to 250 students in each of the two groups making a total of 500 respondents.

From Table 5.6 below, the mean for study habits (SH) for the uppermost performance students was 41.49, standard deviation 4.59 and 40.91 and 42.07 as the lower and upper bounds of the interval of mean respectively. Minimum and maximum scores were 23 and 53 respectively. The lowermost performers had a mean score of 44.11, a standard deviation of 6.28 and 43.34 and 44.89 as the lower and upper bounds of interval for mean. The minimum and maximum scores were 27 and 57 respectively.

Table 5.6: Descriptives of two grade levels against SH, SE, ILOC

			Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean		Minimum	Maximum
SH	Uppermost performance	243	41.4897	4.59191	.29457	40.9095	42.0700	23.00	53.00
	Lowermost performance	256	44.1133	6.28279	.39267	43.3400	44.8866	27.00	57.00
	Total	499	42.8357	5.67290	.25395	42.3367	43.3346	23.00	57.00
SE	Uppermost performance	241	31.1452	3.99057	.25706	30.6389	31.6516	16.00	45.00
	Lowermost performance	256	32.6094	4.23938	.26496	32.0876	33.1312	17.00	42.00
	Total	497	31.8994	4.18112	.18755	31.5309	32.2679	16.00	45.00
INTERNAL LOC	Uppermost performance	243	34.5309	1.91181	.12264	34.2893	34.7724	28.00	38.00
	Lowermost performance	256	31.6836	4.48500	.28031	31.1316	32.2356	21.00	37.00
	Total	499	33.0701	3.75573	.16813	32.7398	33.4005	21.00	38.00

Interestingly, the lowermost performance students posted a higher mean in study habits than the uppermost performers, a scenario that came as a surprise in this research because the opposite result was anticipated.

From Table 5.6 above, the mean self-efficacy (SE) for the uppermost performance students was 31.15, standard deviation 3.99 and 30.64 and 31.64 as the lower and upper bounds of the interval of mean respectively. Minimum and maximum scores were 16.00 and 45.00 respectively. The lowermost performers had a mean score of 32.61, a standard deviation of 4.24 and 32.09 and 33.13 as the lower and upper bounds of interval for mean. The minimum and maximum scores were 17.00 and 42.00 respectively. Again, the lowermost performance students posted a higher mean in self-efficacy than the uppermost performers, a scenario that came as a surprise as the opposite result was anticipated.

From Table 5.6 above, the mean Internal Locus of Control (ILOC) for the uppermost performance students were 34.53, standard deviation 1.91 and 34.29 and 34.77 as the lower and upper bounds of the interval of mean respectively. Minimum and maximum scores were 28.00 and 38.00 respectively. The lowermost performers had a mean score of 31.68, a standard deviation of 4.48 and 31.13 and 32.24 as the lower and upper bounds of interval for mean. The minimum and maximum scores were 21.00 and 37.00 respectively. The uppermost performance students posted a higher mean in internal locus of control than the lowermost performers.

Table 5.7: ANOVA of two grade levels against SH, SE, ILOC

		Sum of Squares	Df	Mean Square	F	Sig.
SH	Between Groups	858.086	1	858.086	28.116	.000
	Within Groups	15168.439	497	30.520		
	Total	16026.525	498			
SE	Between Groups	266.115	1	266.115	15.673	.000
	Within Groups	8404.855	495	16.980		
	Total	8670.970	496			
INTERNAL_LOC	Between Groups	1010.655	1	1010.655	83.523	.000
	Within Groups	6013.890	497	12.100		
	Total	7024.545	498			

From ANOVA Table 5.7 above, it can be observed that the differences between the uppermost and lowermost performers' study habit means were significant $p < 0.05$, $df=1,497$, $F=28.116$. This ANOVA reveals that the two groups of performance lowermost and uppermost posted significantly different means in study habits. However the lowermost group reported higher mean scores against the natural direction of expectations. This could imply that the low performers set very low academic goals and do their best to attain them or have none at all hence whatever comes their way will be viewed as something the student has worked for. This direction of findings contradicts studies on study habits and academic performance in specific curricular subjects (Nuthan & Yenagi, 2009; Hassanbeigi, Askari, Nakhjavani, Shirkhoda, Barzegar, Mozayyan & Fallahzadeh, 2011; Osa-Edoh & Alutu, 2012). Studying needs to be focused and as free from distractions as possible, in all domains of learning, in order to be as effective. Otherwise, the whole

exercise would be a waste of time (Dunlosky, Rawson, Marsh, Nathan & Willingham, 2013).

From ANOVA Table 5.7 above, it can be observed that the differences between the uppermost and lowermost performers' Self-efficacy (SE) means were significant at $p < 0.05$, $df = 1,497$, $F = 15.673$. This could imply that the low performers set very low academic goals or have none at all. Self-efficacy is self-rated and one is as efficacious as he/she feels with respect to the goal to be achieved. Studies by Maddux (2002), Elias and Macdonald (2007), Luszczynska, Gutierrez-Dona and Schwarzer (2005), and Osborne and Jones (2011) found positive correlations between high self-efficacy and high performance or achievement in specific areas of human endeavour. The current study made the same finding but with students in lowermost performance levels reporting higher mean scores in self-efficacy compared to those in the uppermost performance level.

Self-efficacy will equally help individuals to achieve as much as they targeted. Self-efficacy among children is largely influenced by the feedback received from significant others and, in this case, teachers, parents and peers providing the most effective role models (Luszczynska, Gutierrez-Dona & Schwarzer, 2005).

From ANOVA Table 5.7 above, it can be observed that the differences between the uppermost and lowermost performers' internal locus of control means were significant at $p < 0.05$, $df = 1,497$, $F = 83.523$. Students who exhibit high levels of internal locus of control made greater academic achievements compared to those with lower scores. Those who are externally controlled may not be worried about their poor performance especially because they will apportion blame to external factors. For example, when students fail teachers and other variables receive greater blame from society than the students themselves. This study has found that students in the uppermost performance level posted higher scores than those in the lower performance level in internal locus of control. They know what they want in school and education and how to practically get it (Marinak & Gambrell, 2008).

The Latin word for a person's "locus" is "place" or "location" which may be conceptualised as either internal whereby someone believes they can control their life or external whereby they believe that their decisions, life and experiences are determined and controlled by environmental factors which they cannot influence. Internal control is the belief that events in one's life, whether good or bad, are caused by controllable factors such as one's attitude, preparation, and effort. For

example, when a girl fails in a test, she acknowledges that she had not studied enough and did not understand a few of its key questions. She resolves to meet with her teacher for advice on ways to improve performance in the next examination.

Findings in this study that internal locus of control leads to better academic achievement agreed with earlier studies by Butter and Orion (1990), Millar and Irving (1995), Rotter (1966) and Weymer (2002). Study activities, to the lower academic performers, may be viewed as an obligation, something one has to do for external reasons, for example, to avoid aversive repercussions or punishment by the school authorities; hence it is possible to claim positive habitual study behaviours without the expected resultant achievement levels due to lack of intrinsic motivation. This is the basic reason why a student can purport to have high self-efficacy and study habits yet fail to achieve highly in academics. It could also imply that of the three: study habits, self-efficacy and locus of control, only locus of control has a direct effect on performance in secondary school (Wang & Holcombe, 2010).

On the null hypothesis H_02 : “There are no significant mean differences in study habits, self-efficacy and internal locus of control between uppermost and lowermost academic achievers among secondary school students”, it followed that the null hypothesis on SH, SE and ILOC was rejected at the 95% level of confidence.

Figure 5.10 below shows that the differences in means of SH for different levels of student academic performance is visible and ANOVA found the differences significant at $\alpha=0.05$.

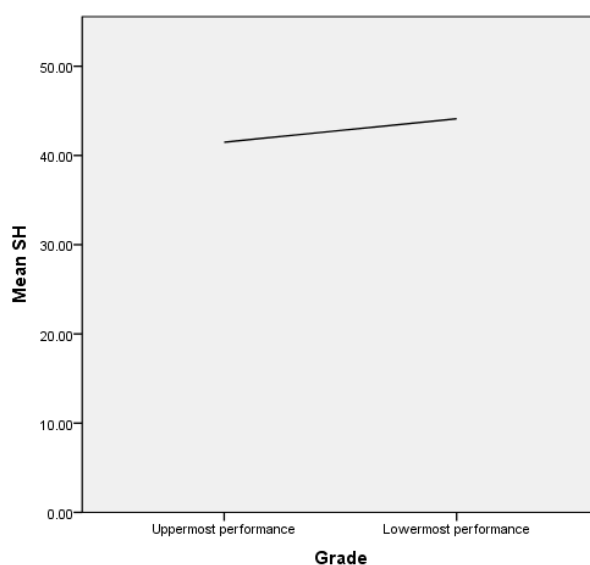


Figure 5.10: Mean study habits under grade at two levels

Significant mean score differences in study habits imply that study habits have a bearing on performance but surprisingly, lowermost performers posted higher mean scores in study habits pointing to a possibility that students may know what is right to do but other than doing it objectively and for a purpose, they do it as an unpleasant duty imposed on them by the school authorities and parents, hence the study engaged in does not add meaningful value to their learning outcomes. This may point to the need for structured training on study habits in secondary school.

Figure 5.11 below shows that the differences in means of self-efficacy for different levels of student academic performance is visible and ANOVA found the differences significant at $\alpha=0.05$.

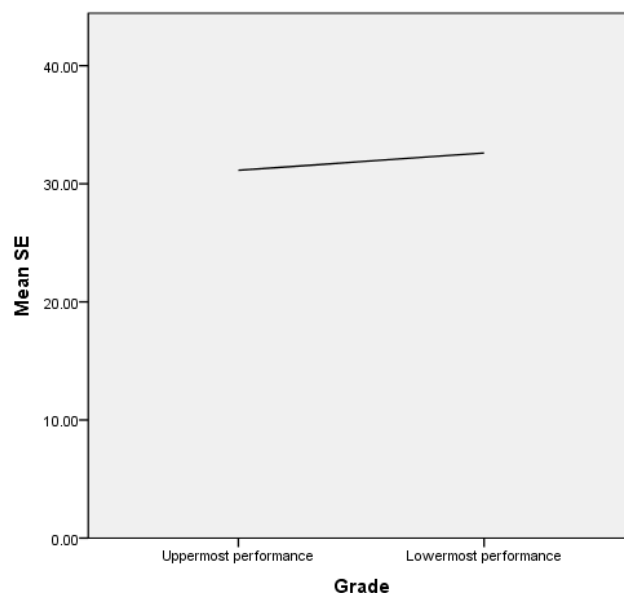


Figure 5.11: Mean self-efficacy under grade at two levels

The significant differences in mean score presuppose that self-efficacy has a bearing in performance, but surprisingly, lower performers posted higher self-efficacy mean scores than upper performers. This points to a possibility of feeling efficacious but failing to exhibit the learning behaviours of an efficacious student. Extremes also are not good because extremely high self-efficacy brings anxiety while extremely low self-efficacy leads to helplessness. Although self-efficacy mediates the relationship between knowledge and action, it alone is not sufficient to assure successful performance.

Figure 5.12 below shows that the differences in means of ILoC for different levels of student academic performance is visible and ANOVA found the differences significant at $\alpha=0.05$.

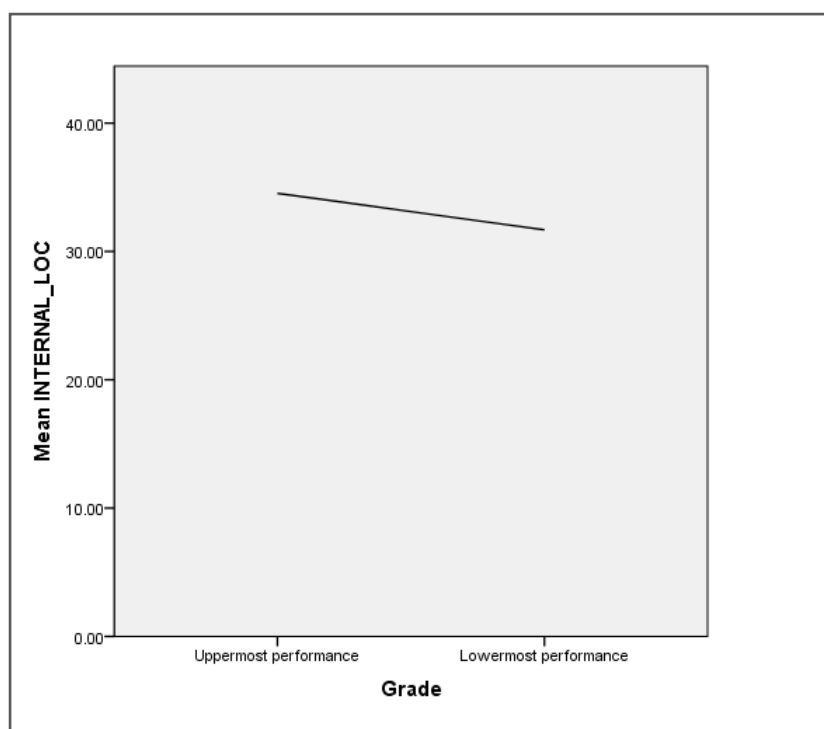


Figure 5.12: Mean internal locus of control under grade at two levels

The significant mean score differences shows that internal locus of control has some influence on the level of performance and achievement. As expected, the uppermost performers posted higher mean scores in internal locus of control compared to lowermost performers.

From Table 5.8 below, the mean study habits (SH) for the 16-year-old students were 44.00, standard deviation 4.270 and 42.533 and 45.467 as the lower and upper bounds of the interval for mean. Minimum and maximum scores were 36.00 and 53.00 respectively. The 17-year-olds had a mean SH of 42.063, a standard deviation of 5.233 and 41.241 and 42.886 as the lower and upper bounds of interval for mean. The minimum and maximum scores were 29.00 and 57.00 respectively. The mean study habits (SH) for the 18-year-old students were 42.560, standard deviation 5.496 and 41.634 and 43.485 as the lower and bounds of the interval of mean. Minimum and maximum scores were 23.00 and 57.00 respectively. The 19-year-olds had a mean SH of 44.041, a standard deviation of 5.813. Lower and upper

bounds of interval for mean were 43.000 and 45.088 respectively. The minimum and maximum scores were 27.00 and 54.00 respectively.

Table 5.8: Descriptives: SH, SE, ILOC by age

		N	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
SH	16	35	44.0000	4.27028	.72181	42.5331	45.4669	36.00	53.00
	17	158	42.0633	5.23302	.41632	41.2410	42.8856	29.00	57.00
	18	161	42.5590	5.94647	.46865	41.6335	43.4845	23.00	57.00
	19	121	44.0413	5.81291	.52845	42.9950	45.0876	27.00	54.00
	Total	475	42.8779	5.61811	.25778	42.3714	43.3844	23.00	57.00
SE	16	35	33.2571	4.06088	.68641	31.8622	34.6521	25.00	42.00
	17	157	32.0701	4.18807	.33424	31.4098	32.7303	21.00	45.00
	18	161	31.5217	4.34610	.34252	30.8453	32.1982	16.00	42.00
	19	120	31.9583	4.01969	.36695	31.2317	32.6849	17.00	41.00
	Total	473	31.9429	4.20186	.19320	31.5633	32.3226	16.00	45.00
INTERNAL LOC	16	35	33.2286	4.05902	.68610	31.8342	34.6229	21.00	38.00
	17	158	33.8418	3.30320	.26279	33.3227	34.3608	23.00	38.00
	18	161	33.3727	3.16390	.24935	32.8802	33.8651	22.00	38.00
	19	121	31.8017	4.52883	.41171	30.9865	32.6168	22.00	37.00
	Total	475	33.1179	3.74262	.17172	32.7805	33.4553	21.00	38.00

From Table 5.8 above, the mean self-efficacy (SE) for the 16-year-old students were 33.257, standard deviation 4.061 and 31.862 and 34.652 as the lower and bounds of the interval of mean. Minimum and maximum scores were 25.00 and 42.00 respectively. The 17-year-olds had a mean SE of 32.070 a standard deviation of 4.188 and 31.410 and 32.730 as the lower and upper bounds of interval for mean. The minimum and maximum scores were 21.00 and 45.00 respectively. The mean (SE) for the 18-year-old students was 31.522, standard deviation 4.346 and 30.845

and 32.198 as the upper and lower bounds of the interval for the mean. Minimum and maximum scores were 16.00 and 42.00 respectively. The 19-year-olds had a mean SE of 31.958, a standard deviation of 4.020. Lower and upper bounds of interval for the mean were 31.232 and 32.685 respectively. The minimum and maximum scores were 17.00 and 41.00 respectively.

From Table 5.8 above, the mean internal locus of control (ILOC) for the 16-year-old students were 32.229, standard deviation 4.059 and 31.834 and 34.623 as the lower and upper bounds of the interval of mean. Minimum and maximum scores were 21.00 and 38.00 respectively. The 17-year-olds had a mean ILOC of 33.842, a standard deviation of 3.303 and 33.323 and 34.361 as the lower and upper bounds of interval for mean. The minimum and maximum scores were 23.00 and 38.00 respectively. The mean ILOC for the 18-year-old students was 33.373, standard deviation 3.164 and 32.880 and 33.865 as the lower and upper bounds of the interval for mean. Minimum and maximum scores were 22.00 and 38.00 respectively. The 19-year-olds had a mean ILOC of 31.802, a standard deviation of 4.529. Lower and upper bounds of interval for mean were 30.987 and 32.617 respectively. The minimum and maximum scores were 22.00 and 37.00 respectively.

Looking only at the means above, it can be observed that the younger and older students exhibit better study habits and self-efficacy except in internal locus of control where performance of older and younger students was lower than others.

From the ANOVA Table 5.9 below it can be observed that the mean differences among students of different ages in study habits (SH) were significant $p < 0.05$, df_1 , 371, $F = 3.531$. The p value is smaller than 0.05 thus significant.

Table 5.9: ANOVA: SH, SE, ILOC by Age

		Sum of Squares	Df	Mean Square	F	Sig.
SH	Between Groups	329.068	3	109.689	3.531	.015
	Within Groups	14631.850	471	31.065		
	Total	14960.918	474			

		Sum of Squares	Df	Mean Square	F	Sig.
SE	Between Groups	91.578	3	30.526	1.737	.159
	Within Groups	8241.881	469	17.573		
	Total	8333.459	472			
INTERNAL_LOC	Between Groups	303.303	3	101.101	7.515	.000
	Within Groups	6336.095	471	13.452		
	Total	6639.398	474			

From the ANOVA Table 5.9 above, it can be observed that the SE mean differences among students of different ages were not significant $p > 0.05$, df 3,469, $F=15.673$.

From the ANOVA table 5.9 above, it can be observed that the ILOC mean differences among students of different ages were significant $p < 0.05$, df 1,471, $F=7.515$. The p value is smaller than 0.05 thus significant.

On the null hypothesis H_0 : “There are no significant mean differences in study habits, self-efficacy and internal locus of control among secondary school students of different ages”, it followed that the hypothesis on SH and ILOC was rejected while that on SE was not rejected at the 95% level of confidence. Age appears to influence study habits and internal locus of control but not self-efficacy.

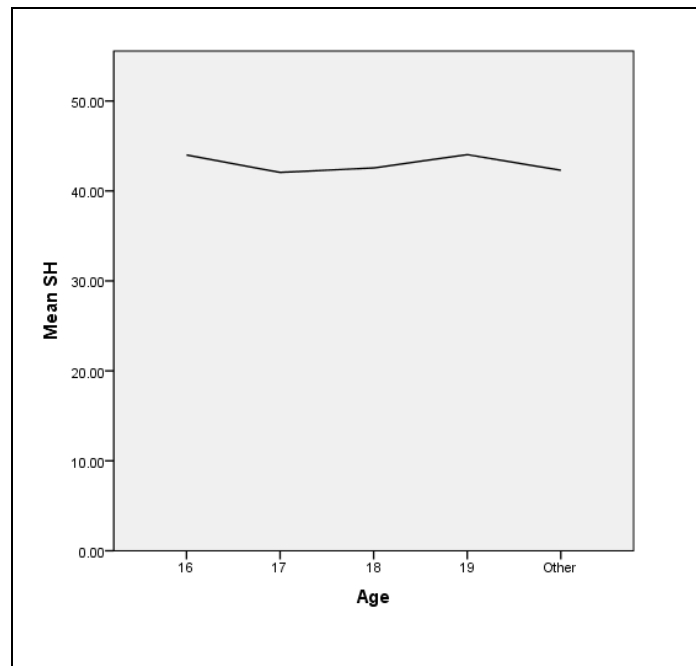


Figure 5.13: Mean study habits by age

Figure 5.13 above shows that the differences in means of study habits for different ages of students appear small but ANOVA found the differences significant at $\alpha=0.05$.

Significant mean score differences in study habits connote that age has some influence on students' study habits. Bada and Oguguo (2011) found age more important than gender in predicting performance in mathematics among college students in Nigeria.

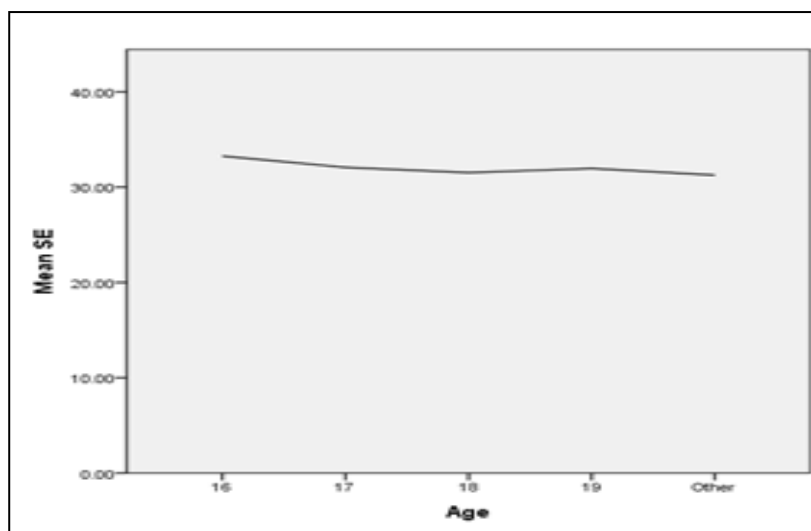


Figure 5.14: Mean self-efficacy by age

Figure 5.14 above shows that the differences in means of self-efficacy for different ages of students appear small and ANOVA also found the differences not significant at $\alpha=0.05$. Insignificant mean score differences in self-efficacy imply that age has no influence on students self-efficacy.

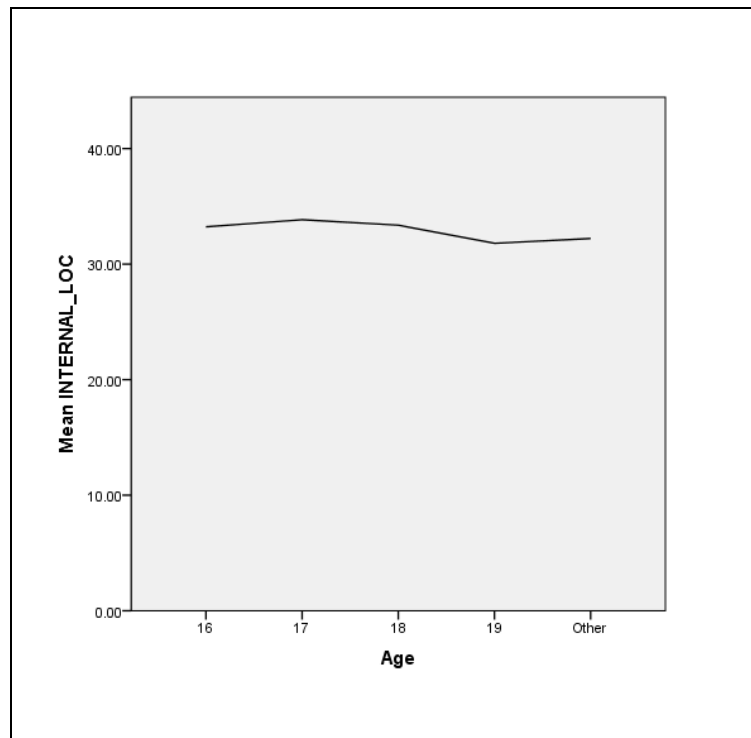


Figure 5.15: Mean internal locus of control by age

Figure 5.15 above shows that the differences in means of internal locus of control for different ages of students appear small but ANOVA found the differences significant at $\alpha=0.05$. The significant differences in mean scores for internal locus of control point to a possibility that age has some influence on students' internal locus of control.

From Table 5.10 below the mean study habits (SH) for the male and female students was 42.18 and 43.48 respectively, standard deviation 5.95 and 5.28; 41.44 and 42.82 as lower bounds and 42.92 and 44.15 as the upper bounds of the interval of mean. Minimum and maximum scores were 23 and 57 for male and 27 and 57 for female. Females posted higher mean scores than males in study habits.

From Table 5.10 below, the mean self-efficacy (SE) for the male and female students was 31.66 and 32.13 respectively, standard deviation 4.15 and 4.21; 31.14

and 31.60 as lower bounds and 32.17 and 32.67 as the upper bounds of the interval of mean. Minimum and maximum scores were 16 and 42 for male and 21 and 45 for female. Females posted higher mean scores than males in self-efficacy.

Table 5.10: Descriptives: SH, SE, ILOC by gender

		N	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
SH	Male	253	42.1779	5.95919	.37465	41.4400	42.9157	23.00	57.00
	Female	245	43.4816	5.27877	.33725	42.8173	44.1459	27.00	57.00
	Total	498	42.8193	5.66676	.25393	42.3204	43.3182	23.00	57.00
SE	Male	251	31.6574	4.14947	.26191	31.1415	32.1732	16.00	42.00
	Female	245	32.1347	4.21189	.26909	31.6047	32.6647	21.00	45.00
	Total	496	31.8931	4.18302	.18782	31.5241	32.2622	16.00	45.00
INTERNAL LOC	Male	253	33.1976	3.70442	.23289	32.7390	33.6563	22.00	38.00
	Female	245	32.9714	3.78457	.24179	32.4952	33.4477	21.00	38.00
	Total	498	33.0863	3.74200	.16768	32.7569	33.4158	21.00	38.00

From Table 5.10 above, the mean internal locus of control (ILOC) for the male and female students was 33.20 and 32.97 respectively, standard deviation 3.70 and 3.78; 32.74 and 32.50 as lower bounds and 33.66 and 33.45 as the upper bounds of the interval of mean. Minimum and maximum scores were 22 and 38 for male and 21 and 38 for female. Males posted higher mean scores than females in internal locus of control.

According to Table 5.11 below, males and females posted significantly different means in study habits (SH), $p < 0.05$, $df 1,496$ $F = 6.664$. The p value is smaller than 0.05 thus it is significant.

Males and females posted non-significantly differences in means on self-efficacy (SE) $p>0.05$ $df=1,495$, $F=1.616$. Males and females posted non-significantly different means in internal locus of control (ILOC), $p>0.05$. $df=1,496$, $F=0.454$,

Table 5.11: ANOVA SH, SE, ILOC by Gender

		Sum of Squares	df	Mean Square	F	Sig.
SH	Between Groups	211.572	1	211.572	6.664	.010
	Within Groups	15748.163	496	31.750		
	Total	15959.735	497			
SE	Between Groups	28.248	1	28.248	1.616	.204
	Within Groups	8633.089	494	17.476		
	Total	8661.337	495			
INTERNAL_LOC	Between Groups	6.369	1	6.369	.454	.501
	Within Groups	6952.919	496	14.018		
	Total	6959.287	497			

On the null hypothesis H_{03} , “There are no significant differences in mean study habits, self-efficacy and internal locus of control among secondary school students of different gender”, it followed that null hypothesis on SH was rejected while that on SE and ILOC was not rejected at the 95% level of confidence. It appears that students’ gender is relevant in the determination of self-efficacy and internal locus of control but not study habits. Guiso, Monte, Sapienza and Zingales (2008) and Else-Quest, Hyde and Linn (2010) found gender to have influence on performance on mathematics and English.

Figure 5.16 below shows that the differences in means of study habits for male and female students appear small but ANOVA found them significant at $\alpha=0.05$. Significant mean score differences in study habits denote that gender has some influence on the way students study with girls doing better than boys in the practise of productive study skills.

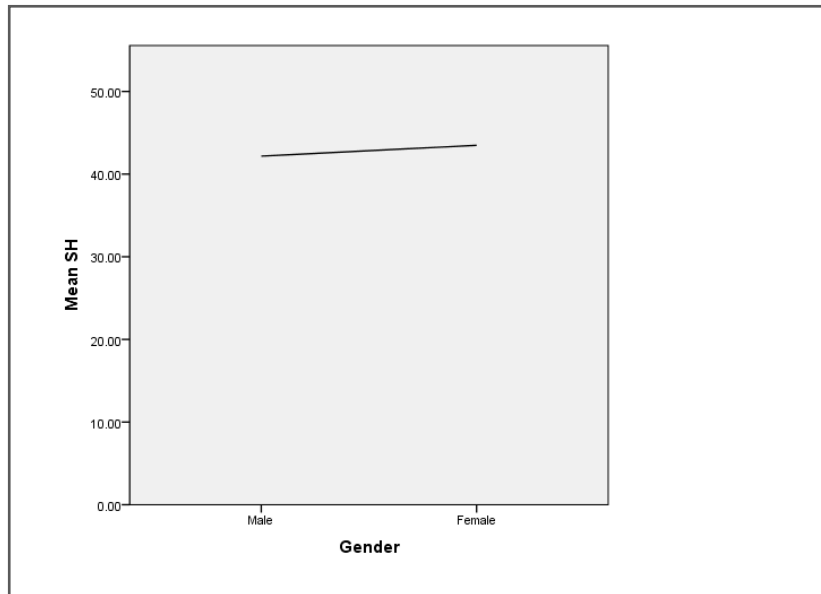


Figure 5.16: Mean Study Habits (SH) by gender

Figure 5.17 below reveals that the differences in means of self-efficacy for male and female students appear small and ANOVA also found the difference to be insignificant at $\alpha=0.05$. Lack of significance in mean score differences in self-efficacy suggests that gender has no influence the students' level of self-efficacy.

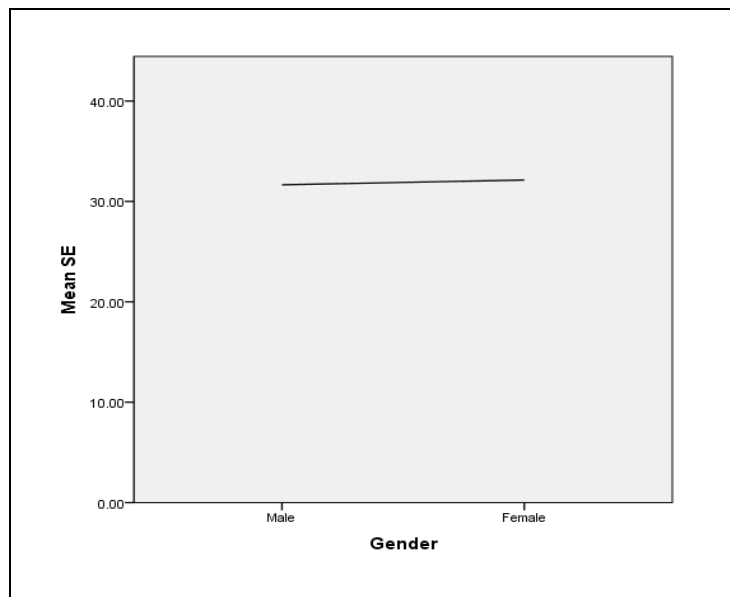


Figure 5.17: Mean Self-Efficacy (SE) by gender

Figure 5.18 below reveals that the differences in means of internal locus of control for male and female students appear small and ANOVA also found them insignificant at $\alpha=0.05$. The insignificant mean score differences in internal locus of control presuppose that gender has no bearing in students' internal locus of control.

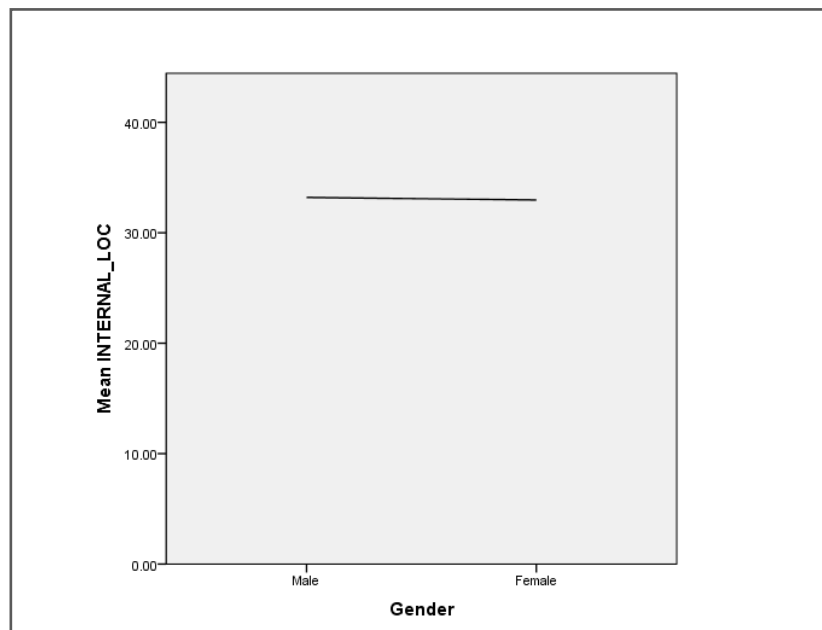


Figure 5.18: Mean internal locus of control by gender

From Table 5.12 below, the mean study habits (SH) for the County and District school level students was 43.72 and 42.63 respectively, standard deviation 4.92 and 5.83; 42.71 and 42.06 as lower bounds and 44.73 and 43.20 as the upper bounds of the interval of mean. Minimum and maximum scores were 33.00 and 57.00 for county and 23.00 and 56.00 for District schools. County schools posted higher mean scores than District in study habits.

Table 5.12: Descriptives type of school against SH, SE, ILOC

		N	Mean	Standard Deviation	Standard Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
SH	County/Provincial	93	43.7204	4.91751	.50992	42.7077	44.7332	33.00	57.00
	District	405	42.6321	5.82589	.28949	42.0630	43.2012	23.00	56.00
	Total	498	42.8353	5.67860	.25446	42.3354	43.3353	23.00	57.00
SE	County/Provincial	93	32.9247	4.09994	.42514	32.0804	33.7691	25.00	42.00
	District	403	31.6725	4.17013	.20773	31.2641	32.0808	16.00	45.00
	Total	496	31.9073	4.18167	.18776	31.5383	32.2762	16.00	45.00
INTERNAL_LOC	County/Provincial	93	33.1398	3.44709	.35745	32.4299	33.8497	24.00	38.00
	District	405	33.0494	3.83025	.19033	32.6752	33.4235	21.00	38.00
	Total	498	33.0663	3.75851	.16842	32.7354	33.3972	21.00	38.00

From Table 5.12 above, the mean self-efficacy (SE) for the county and district school students was 32.92 and 31.67 respectively, standard deviation 4.10 and 4.17; 32.08 and 31.26 as lower bounds and 33.77 and 32.08 as the upper bounds of the interval of mean. Minimum and maximum scores were 25.00 and 42.00 for county and 16 and 45 for district. County schools posted higher mean scores than district schools in self-efficacy.

From Table 5.12 above, the mean internal locus of control (ILOC) for the county and district school level students was 33.14 and 33.05 respectively, standard deviation 3.45 and 3.83; 32.43 and 32.68 as lower bounds and 33.85 and 33.42 as the upper bounds of the interval of mean. Minimum and maximum scores were 24.00 and 38.00 for county and 21.00 and 38.00 for district. County schools posted higher mean scores than district in internal locus of control.

From Table 5.13 below it can be observed that county and district school level students posted non- significantly different means in study habits (SH) $p>0.05$, df 1,496, $F=2.788$. County and district school levels level posted significant differences in means on self-efficacy (SE) $p<0.05$, $df=1,494$ $F=6.857$. The p value is smaller than 0.05 thus it is significant. County and district school level students posted non-significantly different means in internal locus of control (ILOC) $p>0.05$, df 1,496 $F=0.044$.

Table 5.13: ANOVA : SH, SE, ILOC by level of school

		Sum of Squares	df	Mean Square	F	Sig.
SH	Between Groups	89.584	1	89.584	2.788	.096
	Within Groups	15936.914	496	32.131		
	Total	16026.498	497			
SE	Between Groups	118.496	1	118.496	6.857	.009
	Within Groups	8537.237	494	17.282		
	Total	8655.734	495			
INTERNAL_LOC	Between Groups	.618	1	.618	.044	.835
	Within Groups	7020.195	496	14.154		
	Total	7020.813	497			

On the null hypothesis H_0 "There are no significant differences in mean study habits, self-efficacy and internal locus of control among secondary school students

attending different levels of school”, it followed that the null hypothesis on SH and ILOC was rejected while that on SE was not rejected at the 95% level of confidence. It appears that school level influences students’ self-efficacy but not study habits and internal locus of control.

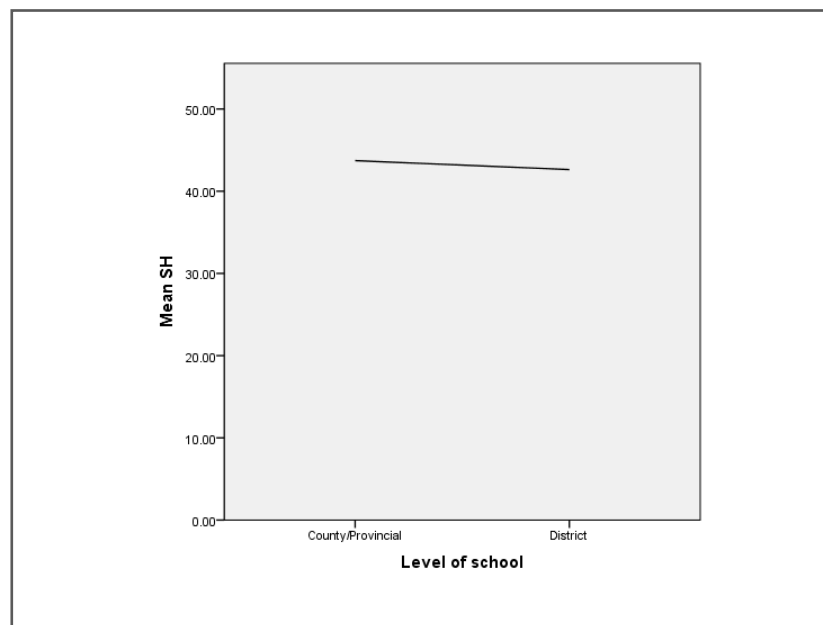


Figure 5.19: Mean study habits by level of school

Figure 5.19 above reveals that the differences in means of Internal Study Habits for students in County and District level of school appear to have no differences. ANOVA found the difference insignificant at $\alpha=0.05$. Lack of significance in mean score differences in study habits indicate that residence status has a bearing on students’ study practices. County school students do better than district school students.

Figure 5.20 below reveals that the differences in means in self-efficacy for students in County and District level of school appear visible. ANOVA also found the differences significant at $\alpha=0.05$. Significant mean score differences in self-efficacy is an indication that school level has some effect in students’ self-efficacy. County school students feel more efficacious compared to district.

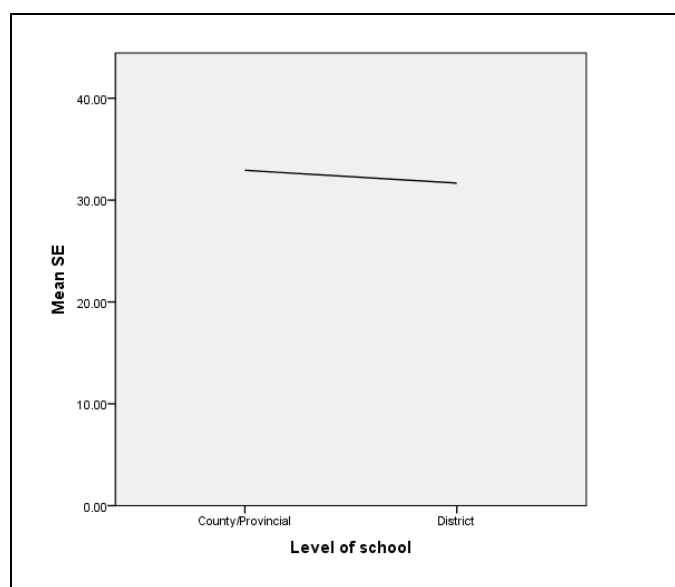


Figure 5.20: Mean self-efficacy by level of school

Figure 5.21 below reveals that the differences in means of Internal Locus of control for students in County and District level of school appear to be invisible and the ANOVA also found them not significant at $\alpha=0.05$. Insignificant mean score differences in internal locus of control indicate that school level has no bearing in students' internal locus of control.

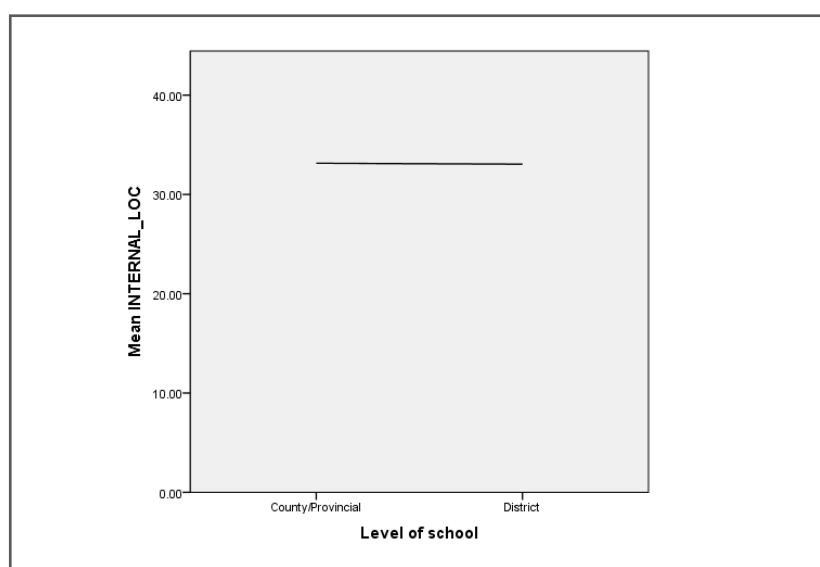


Figure 5.21: Mean Internal Locus of Control by level of school

From Table 5.14 below, the mean study habits (SH) for residential students posted a mean of 43.14 with a standard deviation of 5.43, Lower and upper bounds of the confidence interval of the mean was 42.34 and 43.93 respectively. The minimum and maximum scores were 26.00 and 57.00 respectively. Non-residential students

posted a mean of 42.63 with a standard deviation of 5.79, lower and upper bounds of the confidence interval of the mean was 41.99 and 43.27 respectively. The minimum and maximum scores were 23.00 and 55.00 respectively.

Table 5.14: Descriptives: SH, SE, ILOC by residential status

		N	Mean	Standard. Deviation	Standard. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
SH	Boarder	181	43.1381	5.42604	.40331	42.3423	43.9340	26.00	57.00
	Day scholar	317	42.6309	5.79006	.32520	41.9911	43.2707	23.00	55.00
	Total	498	42.8153	5.66023	.25364	42.3169	43.3136	23.00	57.00
SE	Boarder	180	32.6500	4.43006	.33020	31.9984	33.3016	21.00	42.00
	Day scholar	316	31.4652	3.98115	.22396	31.0245	31.9058	16.00	45.00
	Total	496	31.8952	4.18428	.18788	31.5260	32.2643	16.00	45.00
INTERNAL_LOC	Boarder	181	33.1492	3.51740	.26145	32.6333	33.6651	24.00	38.00
	Day scholar	317	33.0599	3.84587	.21601	32.6349	33.4849	21.00	38.00
	Total	498	33.0924	3.72650	.16699	32.7643	33.4205	21.00	38.00

From Table 5.14 above the mean self-efficacy (SE) for residential students posted a mean of 32.65 with a standard deviation of 4.43, Lower and upper bounds of the confidence interval of the mean was 32.00 and 33.30 respectively. The minimum and maximum scores were 21.00 and 42.00 respectively. Non-residential students posted a mean of 31.47 with a standard deviation of 3.98, lower and upper bounds of the confidence interval of the mean was 31.02 and 31.91 respectively. The minimum and maximum scores were 16.00 and 45.00 respectively.

From Table 5.14 above, internal locus of control (ILOC) for Residential students posted a mean of 33.15 with a standard deviation of 3.52, Lower and upper bounds of the confidence interval of the mean was 32.63 and 33.67 respectively. The minimum and maximum scores were 24.00 and 38.00 respectively. Non-residential students posted a mean of 33.06 with a standard deviation of 3.85, lower and upper bounds of the confidence interval of the mean was 32.63 and 33.48 respectively. The minimum and maximum scores were 21.00 and 38.00 respectively.

The ANOVA on Table 5.15 above shows that the differences in study habits between the resident and non-residential (day scholar) students were not significant. $p > 0.05$. df 1,496 and $F=0.925$. The difference in self-efficacy between the residential and non-residential students was significant: $p < 0.05$ df 1,494 and $F=9.350$. The p value is smaller than 0.05 thus it is significant.

Table 5.15: ANOVA: SH, SE, ILOC by residential status

		Sum of Squares	df	Mean Square	F	Sig.
SH	Between Groups	29.640	1	29.640	.925	.337
	Within Groups	15893.364	496	32.043		
	Total	15923.004	497			
SE	Between Groups	160.981	1	160.981	9.350	.002
	Within Groups	8505.567	494	17.218		
	Total	8666.548	495			
INTERNAL_LOC	Between Groups	.917	1	.917	.066	.797
	Within Groups	6900.834	496	13.913		
	Total	6901.751	497			

The difference in internal locus of control between the boarders and day-scholars respondents was not significant at. $p > 0.05$ df 1,496 and $F=0.066$.

On the null hypothesis H_06 : "There are no significant differences in mean study habits, self-efficacy and internal locus of control among secondary school students of different residence status", the null hypothesis on SH and ILOC was rejected while that on SE was not rejected at the 95% level of confidence. Students' residential status has an influence on self-efficacy but not on study habits and internal locus of control.

Figure 5.22 below shows that the differences in means of study habits for boarders and day scholar students were small. ANOVA also found them to be insignificant at $\alpha=0.05$. Insignificant mean scores differences in study habits imply that residential status has no influence on the way students study.

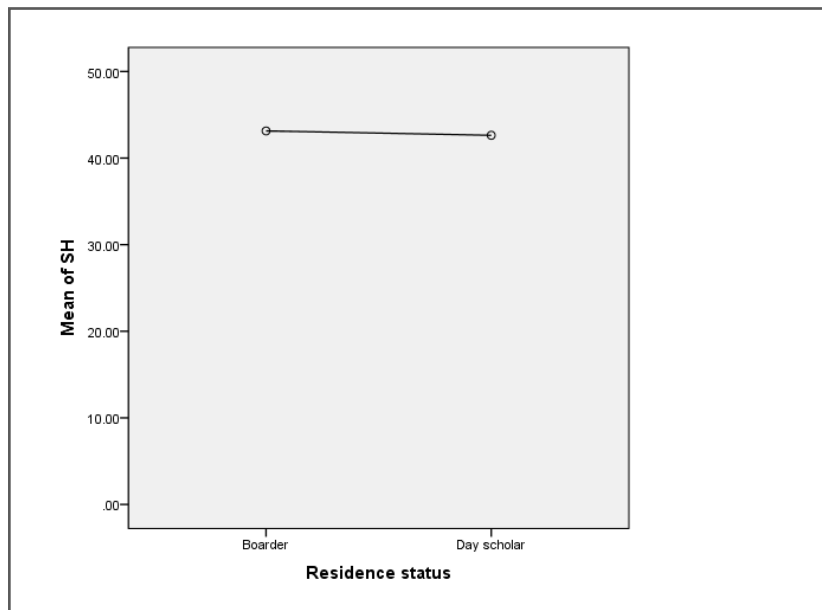


Figure 5.22: Mean study habits under residential status

Figure 5.23 below shows visible differences in means in Self-efficacy for boarders and day scholar students. ANOVA found them to be significant at $\alpha=0.05$. Significant mean score differences in self-efficacy imply that residence status has a bearing in students' level of self-efficacy in favour of boarders.

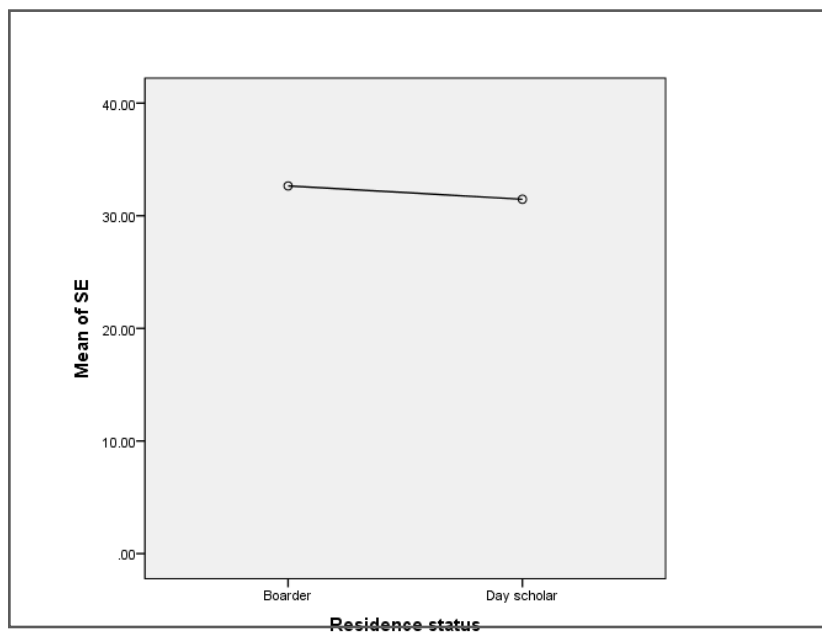


Figure 5.23: Mean of self-efficacy under residential status

Figure 5.24 below reveals that the differences in means for residential and non-residential students in internal locus of control were almost invisible. ANOVA also found them to be insignificant at $\alpha=0.05$. Insignificant mean score differences in students internal locus of control between boarders and day-scholars indicate that residence status has no bearing on students' internal locus of control.

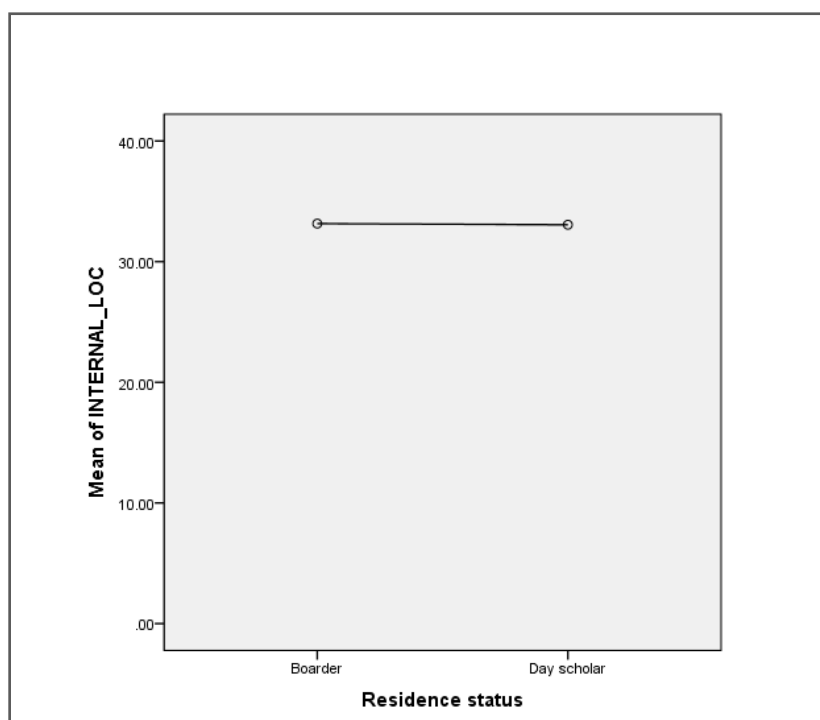


Figure 5.24: Mean: Internal locus of control under residential status

5.5 DISCUSSION OF EMPIRICAL RESULTS

In general students showed relatively high study habits, self-efficacy and internal of control. As can be observed from Tables 5.1, 5.2 and 5.3 respectively the means were 42.84 for SH; 31.90 for SE and 33.07 for ILOC. All of these mean scores were above the median as revealed in the tables aforementioned.

Students reported strong study habits yet the strength of the reported study habits is not reflected in their academic performance. Studying is different from sitting silently at a desk with an exercise book, pen and reading material but requires active interaction with the selected reading material and integrating the newly learned concepts with existing bodies of knowledge. Students are likely to do things not for individual academic goal achievement but to comply with the school rules and regulations in order to avoid punishment or other aversive experiences. This finding

deviates from the typical concept of motivation whereby an individual is expected to behave in certain ways in order to achieve certain goals in life (Carver & Scheier, 1981).

This finding indicates that although students may strongly feel efficacious and believe in their ability the same may not be reflected in their academic performance. This is likely to happen where students have strong beliefs about their ability to perform but fail to follow their beliefs with relevant behaviours, either out of ignorance or sheer negligence and a “don’t care” attitude that is common during teenage years (Pajares & Urdan, 2006:137). Believing strongly in one’s ability does not yield good academic grades if not followed by activities requisite for success.

Students generally reported a relatively high mean score in internal locus of control; however, those who do not perform as expected may not be able to address their academic challenges even when they correctly feel that they are responsible for their experiences of success or failure in life. Another possibility is that some students may not be able to draw upon inner resources from themselves to confront academic failure. More often than not academic failure is blamed on external factors and especially teachers, leaving the students with no responsibility for their learning outcomes (Chalabaev, *et al.*, 2012).

This is an indication that students should be instructed, trained and supported in the development and use of sound study habits, self-efficacy and internal locus of control to improve on achievement of their academic goals in a well-planned and structured manner.

5.5.1 Students’ Bio-Demographics

Students in secondary schools include both boys and girls schooling in schools of different levels designated as National, County/Provincial and District. National and county schools are for either boys or girls while the majority of District schools are co-educational and non-residential except those designated as exclusively residential/boarding. Students in one class in secondary school may be of different ages depending of the ages at which individual students joined primary school and whether they repeated any grade or not.

Students in secondary schools perform differently even if the admission criterion to schools of the same level is equitable. Students are allocated schools depending on their performance in the qualifying examination which for secondary admission, in Kenya, is the Kenya Certificate of Primary Education (KCPE). However, students in the same secondary school perform significantly different from each other with some adding little or no academic value through secondary education. For example, only about a quarter of secondary school students get the minimum grade requirement for direct university entry (C+ mean grade) which is a dream for majority of students (Advance Africa.Com. n. d.).

5.5.2 Students' Grades in relation to Bio-Demographic Variables

The bio-demographic variables considered included grade, age, gender, level of school and student residential status.

5.5.2.1 Grade: SH, SE, ILOC

Students were asked to report the grade range in which most of their end term exam grades have featured since they were in form one. The four grade ranges were as shown in item four on the data collection questionnaire. From figure 5.4 grade range A-B+ (1) had 3.61%; B-C+(2) 45.09%; C-D+(3) 45.69 and D-E(4) 5.61%. Very few students performed in range 1 and 4 meaning that very few students perform superbly high or terribly low. Majority of schools boast of having few or no students at all in range four hence the desire to push every student towards grade range one (Grade level 1 and 2) (Yousefi, Mansor, Juhari, Redzuan & Abu Talib, 2010).

Following the trends observed in Table 5.4, grade ranges 1 & 2 and 3 & 4 were combined to form the uppermost performance and lowermost performance grades respectively as per the predetermined data collection plan. (See Figure 5.5).

ANOVA Table 5.7 reveals that the two groups of performance, lowermost and uppermost posted significantly different means in study habits. Surprisingly, however, the lowermost group reported higher mean scores against the natural direction of expectations. This could imply that the low performers set very low academic goals and do their best to attain such low goals or set none at all. Failure to set goals would imply that whatever learning outcomes will be viewed and accepted as something the student planned and worked for hence satisfactory. This

direction of findings contradicts studies on study habits and academic performance by Hassanbeigi, *et al.* (2011), Nuthan and Yenagi (2009) and Osa-Edoh and Alutu (2012).

The lower quartile academic performers posted significantly higher means in self-efficacy compared to their upper quartile counterparts. This could imply that the low performers set very low academic goals or have none at all. Self-efficacy is self-rated and one is as efficacious as he/she feels with respect to the goal to be achieved. The current study made the same finding but with students in lowermost performance levels reporting higher means scores in self-efficacy compared to those in uppermost performance level.

It appears possible for people to claim to hold high levels of self-efficacy yet fail to prove this in performance because rarely would individuals achieve with self-efficacy only without relevant work. Rarely does life reward people beyond their expectations. Expectations guide exertion of personal effort. While life will not fulfil all expectations, it will seldom exceed an individual's expectations. Self-efficacy among children is, mostly, influenced by the feedback received from significant others, in this case, teachers and parents providing the best motivation with peers providing the most effective role models (Luszczynska, Gutierrez-Dona & Schwarzer, 2005).

Students who exhibit high levels of internal locus of control also achieved greater academic achievements compared to those with lower scores in internal locus of control.

On the null hypothesis H_02 : "There are no significant differences in mean study habits, self-efficacy and internal locus of control between upper and lower academic achievers among secondary school students", the null hypothesis on SH, SE and ILOC was rejected at the 95% level of confidence.

5.5.2.2 Age: SH, SE, ILOC

From the ANOVA Table 5.9, it can be observed that the mean differences were among students of different ages in study habits (SH) were significant $p < 0.05$, df_1 , 371, $F = 3.531$. The p value is smaller than 0.05; thus it is significant.

From the ANOVA table 5.11 it can be observed that the SE mean differences among students of different ages were not significant $p>0.05$, $df\ 3,469$, $F=15.673$.

From the ANOVA table 5.11 it can be observed that the ILOC mean differences among students of different ages were significant $p<0.05$, $df\ 1,471$, $F=7.515$.

Habit is something a student engages in as well as locus of control but self-efficacy is a feeling, a belief in oneself, hence subjective. It may be that as students get older, they improve in their planning of activities and ability to take responsibility of their actions and behaviour without unnecessarily passing the buck or blaming others for their poor performance in academics. Yousefi, *et al.* (2010) did not find significant influence of age on academic achievement.

5.5.2.3 Gender: SH, SE, ILOC

ANOVA Table 5.11 found that males and females differ significantly in study habits with females studying better than males. Inter-gender differences in self-efficacy and internal locus of control were not significant at 95% level of confidence. Guiso, Monte, Sapienza and Zingales (2008) and Else-Quest, Hyde and Linn (2010) found gender to have influence on performance in mathematics and English. These differences therefore according to the current study are have no direct relationship with self-efficacy or internal locus of control but could be influenced by study habits. Students have been known to have different study habits in the subjects they like and those they do not like, with boys performing better than girls in sciences and mathematics while girls surpass boys in arts and languages

5.5.2.4 School level: SH, SE, ILOC

ANOVA Table 5.13 found that the differences in study habits and internal locus of control among students attending county and district level schools not significant.

County and district school level students posted significant differences in means on self-efficacy. Most students believe that the level of academic achievement has a direct relationship with level of school almost without individual effort. There are students who pass where others fail irrespective of the level of the school. The school level therefore seems have some influence on students' self-efficacy which in turn influences individual student effort and performance.

Differential performance in county and district school can be attributed to differential levels of belief in individual ability to perform and not study habits or locus of control.

On the null hypothesis H_05 : “There are no significant mean differences in mean study habits, and internal locus of control among secondary school students attending county and district schools”, self-efficacy posted significant mean differences, and the null hypothesis on SH and ILOC with respect to level of school was rejected while that on SE was not rejected at the 95% level of confidence. It appears that school level influences students’ study habits and internal locus of control with county school students outperforming district school students. Students’ differences in self-efficacy were not significant. County schools enhance students’ study habits and internal locus of control. Students admitted into county schools also had better performance in KCPE implying superior study habits and internal locus of control even at primary level.

5.5.2.5 Residential status

ANOVA Table 5.15 revealed that the mean differences between residents and non-residents in study habits and internal locus of control were not significant. The difference between resident and non-resident students mean self-efficacy was significant. Students’ residential status has influence on self-efficacy but not study habits and internal locus of control.

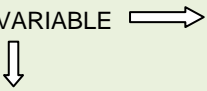
On the null hypothesis H_06 : “There are no significant differences in mean study habits, self-efficacy and internal locus of control among secondary school students of different residence status”, the null hypothesis on SH and ILOC was rejected while that on SE was not rejected at the 95% level of confidence.

The foregoing discussion shows that demographic variables such as age, gender, and school level and residential status were found to have little or no influence on performance. A need for concerted efforts by teachers and parents in structurally helping the students in identifying and practising effective study habits, developing a strong sense of self-efficacy and adopting the philosophical principal of internal locus of control as opposed to external was indicated in order to help students improve on their academic performance.

Findings have indicated that it is possible for students to think and feel that they study well, have the necessary levels of self-efficacy but fail to inject the necessary effort in their learning tasks resulting from whether the student attributes his successes or failures to internal or external forces. Without high levels of internal locus of control and relevant personal goal-oriented behaviours, it will be hard to achieve high academic performance commensurate with students' perceived levels of personal study habits and self-efficacy if at all such students had set personal goals.

The influence of bio-demographic variables: age, gender, school level and residential status on study habits, self-efficacy or an internal locus of control was as reflected on Table 5.16 below.

Table 5.16: Significance of Variability

VARIABLE 	SIGNIFICANCE			In favour of(IFO) (Students)
	Study Habits	Self-efficacy	Internal LOC	
Age	Non-Sig.	Non-Sig.	Sig.	Younger & Older
Gender	Sig.	Non-Sig.	Non-Sig.	Female
Sch. Level	Non-Sig	Sig	Non-Sig.	County/provincial
Res. Status	Non-Sig	Sig	Non-Sig	Resident/Boarder
Grade/quartile	Sig. (IFO Low P)	Sig. (IFO Low P)	Sig.(IFO High P)	P=performance

The table above shows how the demographic variables influenced study habits, self-efficacy and internal locus of control. As can be observed age had significant influence on internal locus of control in favour of younger and older students; gender on study habits in favour of females; school level on self-efficacy in favour of county level; residential status in favour of boarders and grade with lower performers reporting higher study habit and self-efficacy with low internal locus of control.

5.6 CHAPTER SUMMARY

The chapter presented the findings that emerged from both the descriptive and inferential analyses of the data gathered through the questionnaire. It empirically showed the cumulative impact that the study habits, self-efficacy and locus of control

have on the level of academic performance among upper and lower academic achievers in secondary school. The chapter also discussed the influence of age, gender, and school level and student residential status on study habits, self-efficacy and locus of control. The purposive selection of the upper and lower performance samples and administering differently marked questionnaires helped mitigate any inconsistencies in students' responses and especially where grade item was concerned. It was found that lower performers reported higher study habits and claimed higher levels of self-efficacy than upper performers. Only in internal locus of control did high level performers post better scores than the lower performers.

Students' age, gender, school level, residential status have little if any relevance in the determination of performance levels.

The study data obtained and analysed indicated that students report significantly good study habits, high self-efficacy and internal locus of control. However, the three variables posted significantly different mean scores in academic performance between upper and lower quartile academic achievers. Surprisingly the lower quartile achievers reported higher mean scores than the upper quartile in study habits and self-efficacy except for internal locus of control.

There is need for schools to support students, to train and instruct students on the effect of, and how to develop and practise effective productive study habits, high self-efficacy and internal locus of control on academic performance. This is not currently factored into the curriculum, especially in Kenya.

Chapter 6 that follows presents conclusions emanating from the study. Recommendations are made on how teaching-learning encounters should be approached in schools to encourage individual students' to integrate study habits, self-efficacy, internal locus of control to enhance individual student performance which in turn would uplift the general school academic performance. The chapter also makes recommendations for further research on study habits.

CHAPTER 6

CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS

6.1 INTRODUCTION

The problem that was investigated in this research is the study habits characteristic of the upper and lower quartile academic achievers in secondary school in Embu County, Kenya. In order to achieve this, the following six broad research questions were investigated:

1. What level of study habits, self-efficacy and internal locus of control do secondary school students have?
2. Are there mean score differences in study habits, self-efficacy and internal locus of control between upper and lower quartile academic achievers in secondary school?
3. Are there mean score differences in study habits, self-efficacy and internal locus of control between male and female students in secondary school?
4. Are there mean score differences in study habits, self-efficacy and internal locus of control among secondary school students of different ages?
5. Are there mean score differences in study habits, self-efficacy and internal locus of control among secondary school students attending county and district level of schools?
6. Are there mean score differences in study habits, self-efficacy and internal locus of control among secondary school students of different residential status?

Accordingly, this chapter presents the conclusions that emerged from the literature chapters, as well as from the empirical investigation. Limitations to the study are thereafter considered, followed by recommendations on how study habits at both physical and psychological levels may be developed and or improved among secondary school students, and, by extension improve the general academic achievement in secondary schools in Kenya.

6.2 CONCLUSIONS

The following are the conclusions of the study:

6.2.1 Conclusions from the Literature Study

The effectiveness of learning among secondary school students is reflected and demonstrated in the results posted by individual students in the national examination (KCSE) administered by the Kenya National Examination Council (KNEC) to students at the end of four years of secondary education in Kenya. Students' performance levels in these examinations may not be taken as an indication of how well the student was taught, but also how effectively students overcame all challenges that come with learning process and achieved their academic goals. In chapter 2, basic theoretical concepts on formation, maintenance and sustenance of effective study habits were reviewed leading to the formulation of a conceptual framework for the study. Study habits involve learners' overt and covert behaviours. Overt and covert behaviours represent observable and non-observable behaviours respectively. Psychological study habits such as academic self-efficacy and internal locus of control fall under overt behaviour. Most effective study habits may be developed and nurtured through continuous deliberate practice and are not inborn. Habits are behaviours that have been so entrenched in the individual personality such that individuals perform them with very little if any conscious effort. Habits are very hard to break and can be classified as good or bad (cf. 2.1; 2.2). Habits form from repeated and rewarded behaviours and are sustained by their continuous practice and consequences. Habit may be viewed as second nature. Pavlov and Skinner demonstrated this concept well through their classical and operant conditioning experiments respectively (Kirsch, Lynn, Vigorito & Miller, 2004).

Covert characteristics of habits include level of self-efficacy and internal locus of control both of which exert a lot of influence on levels of engagement in academic activities that lead to the desired level of achievement. Nothing will make a person achieve something he/she feels incapable of. However, some students think that feeling efficacious is enough to bring the desired effects of efficacy without exertion of the relevant physical effort. Those who attribute their experiences to forces beyond their control seldom achieve their goals, just as those who feel in control but do not control their experiences for whatever reason. Students' setting of goals without making personal plans on how to achieve them is futile in effect. Students with low internal locus of control are more likely to set goals expecting external factors to gravitate towards achievement of such goals without much effort or

deliberate involvement by the students. Although parents, teachers and some significant others have a responsibility towards students' development of appropriate study habits and performance motivation (cf. 2.3), students' active role in this endeavour is crucial. Students with genuine self-efficacy and internal locus of control are more likely to adapt their study approaches to counter situational and circumstantial challenges they might find themselves in and improve their chances for success in academics against all odds.

Behaviours and habits are dependent on motivation and reinforcement. Behaviour that is rewarding tends to be repeated and strengthened while behaviour that is punished every time it occurs weakens and becomes extinct. Behaviour depends on personal desires and expectations. While life will not meet all students' academic expectations, it will not exceed them either. It is believed that when a person sets goals and exerts relevant effort and determination, he will make the necessary adjustments to ensure that such goals are satisfactorily achieved. Students can study alone or in groups depending on their preferred mode or prevailing personal circumstances. However, research has found that effective study groups yield better academic results for the members than individual study. Peer-peer tutoring, modelling and criticism is more effective than adult-student communication (cf. 2.4.1-5).

Internal locus of control is thought to be crucial in the determination of success or failure in academic goals. Locus of control takes a continuum with internal and external loci of control at the extremes. All students fall within this continuum. Students with an internal locus of control will attribute their experiences to factors within their control while those with external locus of control attribute their experiences to factors outside their control. Externally controlled students easily surrender to fate and learned helplessness, leading to doing nothing towards improvement of their situations or expecting others to do what is required to help them succeed. Learned helplessness is the feeling that a student is completely unable to change his or her unpleasant academic situation.

Externally controlled students will blame everybody and everything except themselves, when challenged to justify poor academic positions they may find themselves in. Those with internal locus of control on the other hand tend to

confront their academic situations and challenges head-on in search for a change or solution, feeling in charge and, as a result, weather any challenge in the process of attaining their anticipated academic achievement. Self-efficacy is closely related to internal locus of control that in turn influences human motivation, endeavours and accomplishments (cf. 2.5.1.4). Students with internal locus of control are convinced that their academic situation is as a result of their acts of omission or commission.

The style of thinking controls a person's desires, aspirations, goals, efforts, achievements, accomplishments, perceptions and motivation. Observational evidence shows that people become erratic and unpredictable when engaging in a task in which they have low self-efficacy or feel less capable of mastering. While people with low self-efficacy find challenges to be hindrances to their target levels of success, to the self-efficacious, hindrances form a source of strength, encouragement and motivation to improve their efforts toward academic achievement. To the self-efficacious, the goal is more important than the sum total of all the challenges experienced in the process of becoming (cf. 2.6). Many students desire good academic grades but only a few accompany this desire with behaviour requisite for this level of academic success. Academic dreams that are actualised are well-understood by the students who act upon them through effective study habits that demonstrate observable behavioural approximations towards the academic goal. Failure to plan is planning to fail. This study defined failure as inability to achieve one's set goal. Where there are no goals and objectives the concept of actual success or failure does not arise. Every effective goal should be specific, measurable, attainable, realistic, timed and well within the learners' mastery ability and control (cf. 2.7.3).

Objective students find poor learning outcomes unpleasant enough to warrant a change in approach to their study behaviour due to the cognitive dissonance that is caused by such an experience of failure to achieve academic goals. Intrinsic motivation is more effective than extrinsic and has a stronger effect on students' learning motivation and style (cf. 2.7.1-2).

From the literature it is evident that teachers should be conversant with students' learning styles in order to be able to offer effective and meaningful study guidance for improved performance and subject students to relevant learning experiences.

Students learn differently. Some are visual, auditory, kinaesthetic or multidimensional hence the need for teachers to use a multidimensional approach in teach-learn encounters. Learning sessions are more effective when intertwined with breaks (cf. 2.8.1-4). Breaks are important in improvement of memory.

Study habits are not complete without effective habits in taking of examinations. Candidates who feel ill-prepared for examinations may have irresistible temptations to use unorthodox means to attain high grades in examinations. This is the situation a student may find himself in if he has set high academic goals and the learning process has not inculcated in him a high sense of self-efficacy and prepared him for effective examination taking skills (cf. 2.9.1-3). As pointed out by Stronge and Grant (2009), effectiveness of examination-taking habits is determined and developed during formative evaluation. Positive examination-taking habits should be embraced while the negative ones are discarded such that during summative evaluation stage the candidate should be armed only with the habits that have been tested and found productive through the formative testing and evaluation during the learning process (cf. 2.10.0-4)

Chapter 3 presents literature review on basic models of study and learning styles the students may employ in their schooling experiences to achieve their set individual academic goals. Some of the models include:

- Problem-Based Learning Model (3.2.1)
- The Experiential Learning Model (3.2.2)
- Discovery Learning Model (3.2.3)
- Carroll's model of school learning (3.2.4)
- Situated Learning Theory Model (3.2.5)
- Attribution Theory Model (3.2.6)
- The Cognitive Theory of Multimedia Learning Model (3.2.7)
- Herrmann's Brain Dominance Instrument Model (3.3.1)
- Brain Dominance Model (3.3.2)
- Felder-Silverman Learning Style Model (3.3.3)
- Social Cognitive Learning Model (3.3.4)
- Kolb's Learning Style Model (3.3.5)

The above mentioned models informed the concepts in this study and guided the theoretical perspectives of the study. The theoretical framework for this study was a synthesis of several theories and models as follows: attribution theory, social cognitive theory, social cognitive learning model, experiential model, operant conditioning, self-efficacy theory, and selected theories of motivation. The literature review identified possible practices that might impact on students' academic performance, for example, taking notes during lessons and private studies, membership of discussion groups, following personal study schedules, and regularly reviewing of school notes among other practices. The interactive nature of overt and covert study habits that distinguish upper and lower quartile academic achievers in secondary school has not been given adequate attention. The empirical investigation enabled the researcher to investigate the interaction of overt and covert study habits in the determination of the level of academic achievement including the influence of age, gender, and school level and residence status.

6.2.2 Conclusions from the Empirical Investigation

The conclusions from the empirical investigations were guided by the research questions as follows:

6.2.2.1 Research question 1

What level of study habits, self-efficacy and internal locus of control do upper and lower quartile secondary school students report to have?

Students in upper and lower quartile academic achievement levels reported to have considerably high though different levels of study habits, self-efficacy and internal locus of control. The grand mean scores (see Table 5.14) were above the mean score of the distribution, an indication that majority of individual scores in the respective variables fell above the mean score of the sample. This implies that the distribution of scores was mostly negatively skewed. Lower quartile academic achievers reported a higher mean score than upper quartile academic achievers in study habits and self-efficacy. This was a surprise finding but does not mean that higher study habits and self-efficacy lead to low academic performance, but may imply the existence of other equally important factors. Existing literature shows that upper achievers performed better than lower achievers in specific school subjects.

Literature review found positive correlations between study habits, self-efficacy, and locus of control with specific subject performance; however, the concern of this study was general academic performance. The students may have good study habits and self-efficacy but may lack the motivation required to actualise those qualities to make high academic achievement. For example, they might fail to set and pursue appropriate goals commensurate with their potential qualities. It is the duty of the teachers and parents to establish ability and aspiration levels of the students and help them set appropriate goals and pursue them unwaveringly. This could be the reason why the mean score differences between the upper and lower academic achievers were significantly in favour of the high achievers in locus of control and in favour of lower achievers in study habits and self-efficacy.

From these results it can be concluded that student claims of possession of high mean scores in self-efficacy and study habits may not necessarily yield good academic results, possibly due to lack of appropriate accompanying motivation and academic goals. Locus of control appears to be more influential in distinguishing high performers from low performers.

6.2.2.2 Research question 2

Are there mean score differences in study habits, self-efficacy and internal locus of control between upper and lower quartile academic achievers in secondary school?

Quantitative results showed that the differences between the upper and lower quartile academic achievers were significant with the lower achievers reporting higher mean scores than the upper in study habits and self-efficacy. Only in internal locus of control did the upper quartile achievers report a higher mean score than the lower quartile achievers (Table 5.14).

ANOVA Table 5.15, shows that students mean differences in study habits, self-efficacy and internal locus of control were significant with lower performers posting better mean scores than upper performers in study habits and self-efficacy (Fig. 5.10-5.12). This finding implies that internal locus of control is more important in determination of level of performance than claimed individual study habits and self-efficacy. Study habits and self-efficacy are more subjective than locus of control. It appears that the effect of study habits and self-efficacy on performance is subject to

internal locus of control. A student who scores highly in internal locus of control believes he/she holds the key to his/her academic success and is more likely to have more active self-efficacy and study habits compared to a student who posts high study habits and self-efficacy but scores low in internal locus of control.

6.2.2.3 Research question 3

Are there significant mean score differences in study habits, self-efficacy and internal locus of control between male and female students in secondary school?

Tables 5.18 and 5.19 male and female secondary school students have insignificant differences in self-efficacy and internal locus of control. However, their mean score differences in study habits was in favour of female students.

There are no inter-gender differences in self-efficacy and internal locus of control. The inter-gender academic achievements are influenced by factors other than self-efficacy and locus of control. However, female students reported slightly better study habits than male students (See Fig. 5.15-5.17).

6.2.2.4 Research question 4

Are there mean score differences in study habits, self-efficacy and internal locus of control among secondary school students of different ages?

Table 5.17 and 5.18 shows that age had very little influence on the study habits of secondary school students with slightly different mean scores. The differences were however significant for study habits and internal locus of control but insignificant for self-efficacy. The significant mean differences in SH and ILOC indicated that the older and the younger reported stronger study habits but weaker internal locus of control than the rest. The whole sample did not have any significant differences in self-efficacy (See Fig. 5.12-5.14).

6.2.2.5 Research question 5

Are there mean score differences in study habits, self-efficacy and internal locus of control among secondary school students attending County and District level schools?

Tables 5.19 and 5.20 show that students in County and District schools have no significant differences in study habits and internal locus of control. However, they reported significantly different mean scores in self-efficacy in favour of students in county level of school (See Fig. 5.18-5.20). The level of school influences students' self-efficacy but not study habits and locus of control. County schools have superior facilities that may indirectly enhance students' level of confidence.

6.2.2.6 Research question 6

Are there mean score differences in study habits, self-efficacy and internal locus of control between secondary school students of different residential status.

Tables 5.20-5.21 reveal that secondary school students, residential and non-residential in the schools they attend show significant differences in study habits and internal locus of control but not in self-efficacy (See Fig 5.20-5.22) both in favour of residential. Residential status in the school seems to provide students with opportunities to develop and practise better study habits and internal locus of control.

6.3 RECOMMENDATIONS

The following recommendations are made based on the literature review and findings from the empirical investigation. The main research question of the study was: How do upper and lower quartile academic achievers in secondary differ in their study habits, self-efficacy and internal locus of control and how these factors are influenced by students' age, gender, school level and residential status

The recommendations are as follows:

6.3.1 Students

Students should learn to set own academic goals, develop and practise performance-friendly study habits such as organising own study schedules, tracking own performance, managing time, making academic enquiries and consulting with teachers and academically superior students. They should also avoid situations that may negatively impact study habits, self-efficacy and internal locus of control at all costs, and approach studies objectively instead of as a mere adherence to the school routine and rules.

6.3.2 Teachers

Teachers should take and perform their rightful role of training and mentoring students on the appropriate methods of study, impressing on them that good performance is not about how one feels but what one does with those feelings in learning activities in and out of school to influence academic outcomes. The way teachers give feedback on students' performance during formative evaluation should be directed towards improvement and enhancement of productive study habits at both physical and psychological levels. Teachers should play a more active role in ensuring that students learn how to learn effectively and improve their performance.

6.3.3 Parents

Parents, guardians or parent figures should actively play their role of ensuring continuity of positive study habits through effective supervision of all academic activities when the child is at home, giving the necessary support and encouragement, and ensuring that students organise and adhere to sound study plans and schedules. The parents should show keen interest in the students' performance and not only discuss examination results but also the day-to-day learning process and experiences of the student. Parents should always encourage students to work hard, believe in themselves, exercise internal locus of control and take full responsibility for their experiences, academic or otherwise.

6.3.4 Ministry of Education (MoE)

The Ministry of Education should set and enforce strategic directions that facilitate the working together of teachers, parents, students and other stakeholders to ensure effective teaching and learning efforts for improved study habits and academic performance. It should also actively support school principals and teachers to do an excellent job of ensuring that students set achievable and desirable academic goals, and pursue them relentlessly through practice of effective study habits and maximum utilisation of available learning resources.

6.3.5 Recommendations on Overcoming Bio-Demographic Challenges to Improve Academic Achievement

Bio-demographic variables have some socially determined challenges that can best be addressed from psychosocial perspectives to mitigate their effects on academic achievement.

6.3.5.1 Gender challenge

Teachers, parents and students should stop associating sex (gender) with the determination of inter-gender differences in performance. Instead it is only the differences in study habits that influence performance levels between girls and boys. Teachers and parents should subject both boys and girls to the same academic performance expectations. Any form of gender bias affects self-efficacy and internal locus of control negatively. All differential gender-based treatment and considerations should be stopped and instead both male and female learners should be given an equal chance to express their potential in academics.

While sex differences are biologically assigned, gender differences are social, cultural phenomena.

6.3.5.2 Age challenge

Education is a continuous process and physical age may not pose a significant intellectual challenge to secondary school students. Social practices are more likely to affect their study habits, self-efficacy and internal locus of control and academic performance. Schools and teachers should mitigate the social challenges that ensue in some cases instead of leaving such challenges to interfere with the students learning efforts.

6.3.5.3 School level challenge

Teachers, parents and students should abandon the attitude and notion that the level of the school (whether the school is categorised as National, County/Provincial or District) determines the level of academic performance in which case the National school student is expected to perform better than the County and District even if such students were at par during admission. This notion may negatively impact the study habits, self-efficacy and internal locus of control and consequently

performance, of both students and teachers thus reducing their motivation and ability to effectively set and pursue appropriate academic goals for individual students and lower level schools in general.

Teachers, parents and members of the community should ensure that all schools have adequate infrastructural resources and facilities to make all schools appropriate places for learning purposes such that students can correctly attribute their differential performance to individual differences in study and learning effort and habits other than the physical environmental factors.

6.3.5.4 Residential status challenge

Students should be discouraged from pegging self-efficacy and performance on student residential status and instead be persuaded that good grades are the result of personal efforts in dealing with the challenges encountered in the learning environment. This persuasion would greatly reduce the negative perception stakeholders have about non-residential students' chances of doing well in school.

Teachers, parents and members of the community should ensure that students have a healthy and adequate study atmosphere, environment and materials both at home and school such as books, adequate lighting, and study time. All schools and homes should be made conducive for studies so that residential status will not be perceived as a factor for discrimination between resident and non-resident student as regards academic performance. Efforts should be made to mitigate the challenges that negatively influence the study habits of day-scholar students.

6.3.4 Recommendations for Overcoming Performance Ranking Challenge

Ranking of students during formative assessment and evaluation should be based on levels of improvement indices but not the raw performance in the current examination itself. A student or school that maintains a position but has not registered a positive improvement index should not be celebrated as much as one that has registered an improvement in performance. That would make assessment and evaluation more criterion- than norm-referenced and more relevant in improving study habits, self-efficacy, internal locus of control and performance. Currently schools and students are competitively ranked as per their performance in the latest examinations, hence schools and students think more of competition at the expense

of improvement in personal performance and are more concerned with their relative position compared to others' even when their performance level has declined.

6.4 LIMITATIONS OF THE STUDY

The study was confined to County and District public secondary schools in Embu county of Kenya hence generalisability of results may not be extended to schools of all levels.

The study did not involve teachers and parents who may be crucial in the development of students' study habits, self-efficacy and internal locus of control and subsequent levels of academic achievement

Samples were drawn only from public secondary schools' Form 4, 2014, students in Embu county, Kenya. The schools were sampled from one county although devolved government divides Kenya into 47 counties governed by politically elected leaders. Conducting research in Embu County was conveniently selected because the researcher is conversant with the location of schools in the county making access easy. This made data collection easier and more efficient. The research was limited to fifty randomly selected schools from each of which five uppermost and five lowermost performers were purposively selected from a performance merit list computed from individual student means in six trimesters (Form Two 2012 and Form Three 2013).

6.5 CONTRIBUTIONS OF THE STUDY

The level of performance especially in secondary school is crucial in the life of a student. It marks an important milestone in the life of a secondary school student because it will determine the future choice of training and career. There is always pressure not only to sit for the secondary examination but to perform well. Good grades in the KCSE means having a cutting edge in further training opportunities and future employment. Those who perform well secure admission to prestigious university degree programmes such as medicine, engineering, architecture and law, all of which attract the top grades in the qualifying KCSE examination. Those who score low grades do not expect much in terms of further training or employment. As the upper performers celebrate their achievements every time results are

announced, the lower performers are vilified for allegedly wasting their time and parents' money paid in form of school fees and other levies. Secondary schools are also rated on their students' level of performance in KCSE. Teachers whose students make high academic achievement easily get promoted to higher professional grades, a gesture that may make them work even harder to help students to do even better.

This study proposes a valuable way for stakeholders in education to help in the development and improvement of study habits, self-efficacy and internal locus of control to assist secondary schools and students to improve their academic achievement and performance and overall their well-being in order to be able to contribute effectively to the society.

The contributions of this study include the discovery that:

- The most important finding in this study is that it is possible for students to claim strong study habits and self-efficacy but still fail to make equally strong grades in their secondary education. This implies that students need to be instructed and trained in such a way that they will be able to not only develop but also utilise their study habits, self-efficacy and internal locus of control to boost and direct their academic performance and achievement.
- Internal locus of control is more influential in performance than study habits and self-efficacy. Students who reported greater internal locus of control with lower scores in study habits and self-efficacy performed better academically than those with higher study habits and self-efficacy but lower internal locus of control. This scenario requires teachers to ensure that students understand their role in the outcomes of their learning behaviour experiences. Learning and teaching activities should be such that learners will develop and utilise internal locus of control together with study habits and self-efficacy to improve their academic performance. Students should be guided on how to control their learning experiences and take full responsibility for the consequences of their academic behaviour instead of blaming others or extrinsic factors for their low achievement in academics.

- Bio-demographic variables such as age, gender, level of school and residential status have little if any influence on study habits, self-efficacy and locus of control. These factors do not directly affect academic performance but may influence development and application of study habits, self-efficacy and internal locus of control which then affects students' performance.
- This study has contributed to the field of education and especially the body of knowledge in Kenya.

6.6 RECOMMENDATIONS FOR FURTHER RESEARCH

Findings stimulate future researchers' interest on how study habits, self-efficacy and internal locus of control interact to influence levels of academic performance among students in same or similar secondary school environments.

Further research should be directed on how students can be helped to combine study habits, self-efficacy and internal locus of control to improve academic performance.

The issue of low academic achievers posting better study habits and self-efficacy than high achievers in general academic achievement is the most important finding in this study and should be further investigated through action research to inform classroom teacher-student encounters. This would investigate why low academic achievers report better study habits and are higher in self-efficacy yet perform poorly. This could determine where the actual problem that causes the discrepancy between better study habits and higher self-efficacy and students' academic achievement is.

The study did not involve teachers and parents who are crucial in the development and utilisation of students' study habits, self-efficacy and internal locus of control and subsequent levels of academic achievement. Future research should include this perspective.

This study was limited to only one county and future researchers could replicate the study in a wider geographical area with larger samples.

Internal locus of control has a significant influence on students' performance. Further research should be done to determine how students' internal locus of control could be developed and maintained among students. It appears to contribute more to high academic achievement compared to study habits and self-efficacy.

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ANNEXURE 1: QUESTIONNAIRE: UPPER QUARTILE COVER PAGE

SN

▲ STUDENTS' WAY OF STUDY QUESTIONNAIRE ▲

(ALL RESPONSES ARE GUIDED)

The aim of this questionnaire is to gather self reported information on the way students study. The findings of the study will be applied to assist secondary schools and students improve study practices in order to achieve their desired academic goals. Please respond to each question in the most truthful way. **Be assured that the information you give in this questionnaire will be treated with maximum confidentiality and used for the purposes of this research study only.**

PLEASE DO NOT WRITE YOUR NAME OR THAT OF YOUR SCHOOL ON ANY PART OF THIS QUESTIONNAIRE. ONLY RESPOND TO THE QUESTIONS

“READ THE INSTRUCTIONS IN EACH SECTION OF THE QUESTIONNAIRE CAREFULLY”

Section D.I							
Kindly respond to each of the following 5 questions by marking your response with a tick mark [✓] or fill in the blank as applies to you.							
1. Indicate your age in years: 16 [] 17 [] 18 [] 19 [] Other, state _____							
2. Indicate your gender Male [] Female []							
3. Indicate the level of the of school you attend County/Provincial [] District []							
4. Indicate with a small tick[✓] the mean grade range in which most of your end term exams grades have featured since form one. <table border="1"><tr><td>A↔B+ []</td><td>B↔C+ []</td><td>C↔D+ []</td><td>D↔E []</td></tr></table>				A↔B+ []	B↔C+ []	C↔D+ []	D↔E []
A↔B+ []	B↔C+ []	C↔D+ []	D↔E []				
5. Indicate your student residence status in the school you attend. Resident(Boarder) [] Non-resident(Day-Scholar) []							

ANNEXURE 2: QUESTIONNAIRE: LOWER QUARTILE COVER PAGE

SN

▼ STUDENTS' WAY OF STUDY QUESTIONNAIRE ▼

(ALL RESPONSES ARE GUIDED)

The aim of this questionnaire is to gather self reported information on the way students study. The findings of the study will be applied to assist secondary schools and students improve study practices in order to achieve their desired academic goals. Please respond to each question in the most truthful way. **Be assured that the information you give in this questionnaire will be treated with maximum confidentiality and used for the purposes of this research study only.**

PLEASE DO NOT WRITE YOUR NAME OR THAT OF YOUR SCHOOL ON ANY PART OF THIS QUESTIONNAIRE. ONLY RESPOND TO THE QUESTIONS

“READ THE INSTRUCTIONS IN EACH SECTION OF THE QUESTIONNAIRE CAREFULLY”

Section D.I							
Kindly respond to each of the following 5 questions by marking your response with a tick mark [✓] or fill in the blank as applies to you.							
1.	Indicate your age in years: 16 [] 17 [] 18 [] 19 [] Other, state _____						
2.	Indicate your gender Male [] Female []						
3.	Indicate the level of the school you attend. County/Provincial [] District []						
4.	Indicate with a small tick[✓] the mean grade range in which most of your end term exams grades have featured since form one. <table border="1"><tr><td>A↔B+ []</td><td>B↔C+ []</td><td>C↔D+ []</td><td>D↔E []</td></tr></table>			A↔B+ []	B↔C+ []	C↔D+ []	D↔E []
A↔B+ []	B↔C+ []	C↔D+ []	D↔E []				
5.	Indicate your student residence status in the school. Resident(Boarder) [] Non-resident(Day-Scholar) []						

ANNEXURE 3: MAIN QUESTIONNAIRE

Section S.H

Since different students study differently, please indicate with a tick mark (✓) how often you perform each of the following 23 activities. Tick in only one column under <u>Always</u> , <u>Sometimes</u> or <u>Never</u> as applies to you personally. <u>NO WRONG OR CORRECT RESPONSE</u> "Please be honest in all your responses"		<u>Always</u>	<u>Sometimes</u>	<u>Never</u>
1	Make notes when studying privately.			
2	Give more study time to the subjects I like most.			
3	Seek help on difficult subject areas.			
4	Participate in class activities			
5	Revise notes in all subjects regularly.			
6	Spend all your day's free time on non-academic activities.			
7	Reward yourself for improving grade performance.			
8	Prepare and use personal study timetable.			
9	Make notes when reading materials other than school text books.			
10	Revise past exam papers in preparation for exams.			
11	Extend prep times beyond the hours set in your school.			
12	Spend all your day's free time on studies.			
13	Hold discussions in small study groups.			
14	Track your performance by comparing your present with previous performance grades			
15	Read ahead of the teacher in subject text books			
16	Revise previous lesson notes before the next lesson in each subject.			
17	Study each subject at specific times without change during free time.			
18	Track your performance by comparing it with that of classmates.			
19	Work on more difficulty subjects assignments first			
20	Make notes when I study			
21	Commit important points to memory instead of writing			
22	Spend little time on subjects that I am not good in			
23	Prefer studying in large study groups			

Section-L.O.C

Read each of the following 19 simple statements very carefully and circle only one response option a. or b. as best reasoned by you. "Please be true to yourself in all your responses."

1. Suppose you're not sure about the answer to a question your teacher asks you and the answer you give turns out to be wrong. Is it likely to happen
 - a. because the teacher was more specific than usual, or
 - b. because you answered too quickly?
2. If a teacher says to you, "Try to do better," would it be
 - a. because this is something the teacher might say to get pupils to try harder, or
 - b. because your work wasn't as good as usual?
3. If you can't work a puzzle, is it more likely to happen
 - a. because you are not especially good at working puzzles, or
 - b. because the instructions weren't written clearly enough?
4. Suppose you are showing a friend how to play a game and he has trouble with it. Would that happen
 - a. because he wasn't able to understand how to play, or
 - b. because you couldn't explain it well?
5. When you find it easy to work out problems in a math test, is it usually
 - a. because the teacher gave you especially easy problems, or
 - b. because you studied well before you took the test?
6. If a boy or girl tells you that you are bright, is it usually
 - a. because you thought up a good idea, or
 - b. because they like you?

7. Suppose you became a famous teacher, scientist or doctor. Do you think this would happen
- a. because other people helped you when you needed it, or
 - b. because you worked very hard?
8. When you read a story and remember most of it, is it usually
- a. because you were interested in the story, or
 - b. because the story was well written?
9. When you find it hard to work out science problems at school, is it
- a. because you didn't study well enough before you tried them, or
 - b. because the teacher gave problems that were too hard?
10. If a teacher says to you, "Your work is fine," is it
- a. something teachers usually say to encourage pupils, or
 - b. because you did a good job?
11. Suppose you study to become an engineer, banker, or pilot and you fail. Do you think this would happen
- a. because you didn't work hard enough, or
 - b. because you needed some help, and other people didn't give it to you?
12. When you learn something quickly in school, is it usually
- a. because you paid close attention, or
 - b. because the teacher explained it clearly
13. If you solve a puzzle quickly, is it
- a. because it wasn't a very hard puzzle, or
 - b. because you worked on it carefully?

14. When you lose at a game of cards or checkers, does it usually happen
- a. because the other player is good at the game, or
 - b. because you don't play well?
15. When you read a story and can't remember much of it, is it usually
- a. because the story wasn't well written, or
 - b. because you weren't interested in the story?
16. Suppose your parents say you are doing well in school. Is this likely to happen
- a. because your school work is good, or
 - b. because they are in a good mood?
17. Suppose you did better than usual in a subject at school. Would it probably happen
- a. because you tried harder, or
 - b. because someone helped you?
18. When you do well in a test at school, is it more likely to be
- a. because you studied for it, or
 - b. because the test was especially easy?
19. When you have trouble understanding something in school, is it usually
- a. because the teacher didn't explain it well, or
 - b. because you didn't listen carefully?

Section S.E

Below is a list of 12 statements dealing with general human feelings. Indicate with a tick mark [✓] the extent (Not at all true, Hardly true, Moderately true, Exactly true) to which each statement is true about you as a person. "Please be true to yourself in all your responses".

1. If I make plans, I am convinced I will succeed in carrying them out.

Not at all true [] Hardly true [] Moderately true [] Exactly true []

2. If I have a failure the first time I try, I work on until I succeed.

Not at all true [] Hardly true [] Moderately true [] Exactly true []

3. If I seriously want something, it usually runs away from me.

Not at all true [] Hardly true [] Moderately true [] Exactly true []

4. If I have the feeling that something new is complicated, I do not start it.

Not at all true [] Hardly true [] Moderately true [] Exactly true []

5. Even with unpleasant tasks I hold on until it is completed.

Not at all true [] Hardly true [] Moderately true [] Exactly true []

6. I have difficulties handling challenges well in my life.

Not at all true [] Hardly true [] Moderately true [] Exactly true []

7. If I made a decision to do something, I will do it no matter what.

Not at all true [] Hardly true [] Moderately true [] Exactly true []

8. If I start something new, I soon must have the idea that I'm in the right track, otherwise I quit.

Not at all true [] Hardly true [] Moderately true [] Exactly true []

9. Unexpected problems make me quickly lose my focus.

Not at all true [] Hardly true [] Moderately true [] Exactly true []

10. If I make a mistake I try even harder.

Not at all true [] Hardly true [] Moderately true [] Exactly true []

11. I do not start learning new things if I think they are too difficult.

Not at all true [] Hardly true [] Moderately true [] Exactly true []

12. I doubt myself.

Not at all true [] Hardly true [] Moderately true [] Exactly true []

**THANK YOU FOR ANSWERING THIS QUESTIONNAIRE CAREFULLY,
TRUTHFULLY AND HONESTLY**

ANNEXURE 4: SAMPLING FRAME TEMPLATE

Quartile	Student rank position: six trimesters	F2T1	F2T2	F2T3	F3T1	F3T2	F3T3	Total marks	Mean score
Upper Most	X_1								
	X_2								
	X_3								
	X_4								
	X_5								
Lower Most	X_{n-4}								
	X_{n-3}								
	X_{n-2}								
	X_{n-1}								
	X_n								

ANNEXURE 5: INTRODUCTORY LETTER- KCA UNIVERSITY

KCA UNIVERSITY

KCA UNIVERSITY
THIKA ROAD RUARAKA
P.O. BOX 56808-00200
NAIROBI-KENYA
JANUARY 09, 2014

REF: KCAU/SOB.14/BR

To whom it may concern,

Dear Sir/ Madam,

RE: RESEARCH PROJECT

This is to certify that **FRANCIS MANYATTA NJUE STUDENT NO. 42152771** has been permitted by the KCA University School of Business and Public Management to carry out research on the topic

“A COMPARATIVE ANALYSIS OF UPPER AND LOWER QUARTILE ACADEMIC ACHIEVERS’ STUDY HABITS IN SECONDARY SCHOOLS IN EMBU COUNTY, KENYA”.

The research is purely for academic purposes and for the partial fulfillment of the requirement for the D.Ed. (Psychology of Education) degree program.

Kindly assist him with information where possible

Yours faithfully

Prof.Silas Onyango

Dean, School of Business and Public Management

ANNEXURE 6: LETTER OF AUTHORITY FROM THE COUNTY DIRECTOR OF EDUCATION

MINISTRY OF EDUCATION

OFFICE OF THE COUNTY DIRECTOR OF EDUCATION

EMBU COUNTY

P.O. BOX 123-60100

EMBU

10 JANUARY 2014

REF.NO. EBC/GA/32/1/17

ALL PRINCIPALS

PUBLIC SECONDARY SCHOOLS

THROUGH'

DISTRICT EDUCATION OFFICERS

EMBU COUNTY

RE: AUTHORITY TO CARRY OUT RESEARCH: FRANCIS MANYATTA NJUE

Authority is hereby granted to **Francis Manyatta Njue Student No. 42152771** of KCA University to carry out research on the topic

“A comparative Analysis of Upper and Lower quartile Academic Achievers’ Study Habits in Secondary schools in Embu County, Kenya”

Kindly accord him all the necessary assistance and ensure that the exercise is conducted professionally. This programme should not interfere with the normal school routine.

BEATRICE M. MAKAU (MRS.)

COUNTY DIRECTOR OF EDUCATION

EMBU COUNTY

Copy to:

**Director Quality Assurance and Standards,
Ministry of Education, Science and Technology
State Department of Education,
P.O. Box 30426-00100
NAIROBI**

ANNEXURE 7: REQUEST FOR PERMISSION FROM SCHOOL PRINCIPALS

LETTER TO SCHOOL PRINCIPALS REQUESTING PARTICIPATION OF STUDENTS IN FILLING IN THE QUESTIONNAIRES ON D. Ed RESEARCH PROJECT

I hereby authorize **Mr. Francis Manyatta Njue** a student at the **KCAU-UNISA SNo. 42152771** to administer the research questionnaire to the students as part of the D. Ed research study titled:

“A Comparative Analysis of Upper and Lower Quartile Academic Achievers’ Study habits in Secondary Schools in Embu County, Kenya”

I understand that the participation of my school and students in the study is voluntary and will not interfere with the school’s regular curriculum routine whatsoever and the information gathered shall be used for the purposes of this study only and kept strictly confidential.

The data and any other assistance required will be given free of charge. The researcher can be reached on **0722689608**.

PRINCIPAL’S SIGNATURE

DATE