

**SOCIAL COGNITIVE SKILLS AS PREDICTORS OF DELINQUENT
BEHAVIOUR MODIFICATION AMONG STUDENTS IN PUBLIC
SECONDARY SCHOOLS**

TOM KENNEDY OMONDI ONYANGO

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TECHNOLOGY**

@ 2022

DECLARATION AND APPROVAL

DECLARATION BY CANDIDATE

This PhD thesis is my original work and has not been presented for any award of a diploma or conferment of a degree in any other university or institution.

Signature.....

Date.....

Tom Kennedy Omondi Onyango

(E361/4492/2013)

APPROVAL BY SUPERVISORS

This Ph.D thesis has been submitted for examination with our approval as the university supervisors.

Signature.....

Date.....

Prof. Pamela Raburu

Department of Psychology and Educational Foundations

School of Education

Jaramogi Oginga Odinga University of Science and Technology

Signature .....

Date.....

Dr. Peter Jairo Aloka

Wits School of Education

The University of The Witswatersrand

DEDICATION

To my late grandparent, Mama Norah Anyango Okoth who, despite low academic achievement, appreciated and encouraged education.

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ABSTRACT

The purpose of the study was to find out about social cognitive skills as predictors of delinquent behaviour modification among public secondary school students in Rongo Sub-County. The study objectives were to examine the relationship between self-control and delinquent behaviour modification among secondary school students in Rongo Sub-County; establish the relationship between vicarious experience and delinquent behaviour modification among secondary school students in Rongo Sub-County; determine the relationship between rational attribution and delinquent behaviour modification among secondary school students in Rongo Sub-County and to establish the relationship between inhibition and delinquent behaviour modification among secondary school students in Rongo Sub-County. Bandura's self-efficacy theory and Skinner's reinforcement theory of motivation informed the study. The study adopted a Concurrent Triangulation research design within the Mixed Method approach. From a population of 3,740 students, 10% (374), were sampled for the study with a return rate of 92.3% (344) and 26.9% (7) of the target Deputy Principals and Teacher Counsellors from the 26 schools, making a sample of 7 for both officers. Stratified random sampling was used to cater for the different categories of secondary schools. Purposive sampling was used to sample the one (1) national school in the Sub-County. Quantitative data was collected using questionnaires while an interview schedule was used to collect qualitative data from the seven (7) Deputy Principals and Teacher Counsellors, Focus Group Discussions were used with groups of 6 for each sampled school leading to a total of 42 participants in 7 groups. The validity of the research instrument was ensured through expert judgement by the University lecturers. The reliability of the research instruments was determined by the use of Cronbach's Alpha and a coefficient which in this study was .7 and above. The quantitative data were analyzed using Statistical Package for Social Sciences (SPSS) version 27 using statistical tests such as Pearson's Product Moment Correlation Coefficient and Multiple Regression Analysis while qualitative data were analyzed using thematic analysis. The study reported that there is statistically significant positive correlation between self-control and delinquent behaviour modification among secondary school students ($n=344$; $r = .276$; $p<.05$); a significant positive correlation between vicarious experience and delinquent behaviour modification among secondary school students ($n=344$; $r = .207$; $p<.05$); a significant positive correlation between rational attribution and delinquent behaviour modification among secondary school students ($n=344$; $r = .240$; $p<.05$) and a significant positive correlation between inhibition and delinquent behaviour modification among secondary school students ($n=344$; $r = .190$; $p<.05$). Recommendations included the need for the Sub-County Education office to mount awareness programmes for Parents' Associations on how to provide better home environments for students, the need for guidance from the Ministry of Education to Principals in schools on behavioural development of students, Principals to be proactive in the provision of Guidance and Counselling services to delinquent students instill discipline in them, Teacher Counsellors should train students on self-control to assist them on appropriate behaviour modification and also apply person-centred counselling techniques to enhance inhibition in students and have structured Counselling sessions.

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ACRONYMS

- ADHD** – Attention-Deficit/Hyperactivity Disorder
- AMR** – Anti-Microbial Resistance
- ANOVA** – Analysis of Variance
- ART** – Anti-retroviral Therapy
- BAS** – Behavioural Approach System
- BI** – Behavioural Inhibition
- BIS** – Behavioural Inhibition System
- DP** – Deputy Principal
- EEG** - Electroencephalography
- FGD** – Focus Group Discussion
- GNG** – Go/no-go
- ICT** – Information and Computer Technology
- IPC** – Infection Prevention and Control
- KMO** - Kaiser-Meyer-Oklin measure of sampling adequacy
- NACOSTI** – National Commission for Science, Technology and Innovation
- SAD** – Seasonal Affective Disorder
- SD** – Standard Deviation
- SDLR** – Self-Directed Learning Readiness
- SPS** - Social Problem-solving
- SPSS** - Statistical Package for the Social Sciences
- STEBI-B** - Science Teaching Efficacy Belief Instrument B
- TC** – Teacher Counsellor
- USA** – United States of America
- VIF** – Variance Inflation Factor
- VT** – Vicarious Trauma
- WHO-AFRO** – World Health Organization Regional Office for Africa

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Student conflicts in secondary schools are one of the most common challenges faced in the 21st century in the modern world as observed in the studies carried out in this area. Social cognitive skills refer to a wide group of abilities that allow us to interact, communicate and understand social agents (Alaerts, Nackaerts, Meyns, Swinnen & Wenderoth 2011). Bijari, Zare, Haghdoost, Bazrafshan, Beigzadeh, and Esmaili (2016) state that the components of social cognitive skills include self-control - the student's cognitive ability to control one's emotions and behaviour in the face of temptations and impulses to achieve his or her goals; vicarious experience - knowledge or information about a skill or behaviour that students derive from seeing the performance of others in school, for example, keeping to the school rules and routine; rational attribution - the process by which students logically explain the causes of their behaviour and events, and inhibition - the act of preventing or slowing the activity or occurrence of inappropriate behaviour in school.

An American case is reported of a teacher who, when one of his students slammed a book on the floor, followed what has become standard protocol in schools across the country: He sent the teenager out of class to an administrator who would decide his fate (Mcclain, 2015). But, at Mission High, a San Francisco school that's brought down its suspension rate significantly in recent years, the story did not end there. Mcclain (2015) reports that a veteran teacher and a dean followed up and gently encouraged the teacher to think carefully about why he had sent the student, who is black, to the office for glaring and slamming the book. As Arguedas, the teacher reflected with his colleagues he realized to his dismay that he had misinterpreted the teenager's emotional problems and inability to express himself for aggressive anger—possibly because the student was black and male. Educators are rethinking their approach to school discipline in response to sky-high suspension rates that disproportionately affect black children (Mcclain, 2015).

Some of the more common efforts, from this study, aim to change student behaviour or overhaul school protocols. A district might unilaterally ban suspensions for more

subjective transgressions or adopt restorative justice practices designed to repair relationships when there's been a rift. But a growing number of schools in the Bay Area and nationally are realizing that improving discipline is just as much about changing teacher behaviour as changing student behaviour. This study in America concentrated on teachers as respondents in the which had limited data to improve discipline while the current study was on social cognitive skills as predictors of delinquent behaviour modification among students in public secondary schools with the respondents being the deputy principal, as the in-charge of discipline; the teacher counsellor, as they help in modifying behaviour and the guided and counselled students thus making it rich in data on delinquent behaviour modification.

Another study in America posits that schools are expected to be a place where students learn the expected behaviour in society and research in the American school system came up with the results that there is school prisonization '...a seclusion room...something akin to a prison cell – a concrete room latched from the outside, its tiny window obscured by a piece of paper' (Payne, 2013, p. 75). This research further noted that '...schools grow more like prisons than institutions of education.' It attributed this to increased crime, delinquency, disorder, and victimization. These ended up with student criminalization characterized by fighting, abusive language and attendance issues, disobedience and disrespect as well as general classroom disruption. Payne (2013, p. 78) notes that "decisions to call a shouting match or locker graffiti a crime, to arrest rather than to see a teachable moment, to prosecute rather than resolve disputes – these practices are turning schools into policed territories." There is need to correct such delinquencies and make the students leave schools as good citizens. This American study was on the American school system as a whole while the current study was on a specific aspect of predictor nature of social cognitive skills of delinquent behaviour modification among students in public secondary schools.

Through modelling, observation and then imitation, children develop new behaviours. Modelling can be as simple as having a child watch another child sharpen a pencil (Idigun, 2016). Idigun (2016) goes ahead to note that by watching the model, a child can learn a new behaviour, inhibit another behaviour, or strengthen previously learned

behaviour. To use modelling effectively, you must determine whether a child can observe and then imitate the model. In classroom settings, a student's response modelling is influenced by three factors, namely the characteristics of the model, the characteristics of the observer and the positive or negative consequences associated with the behaviour (Bijari, Zare, Haghdoost, Bazrafshan, Beigzadeh & Esmaili, 2016). Children are more likely to respond to modelling when they view their teachers as competent, nurturing, supportive, fun, and interesting. Children are also more likely to imitate behaviour that results in positive consequences.

In a study by Mather and Goldstein (2013), behaviour modification assumes that observable and measurable behaviours are good targets for change. All behaviour follows a set of consistent rules. Methods can be developed for defining, observing and measuring behaviours, as well as designing effective interventions. Guidance and counselling are aimed at helping individuals understand themselves and their environment so that they can function effectively in society.

Delinquent behaviour modification is aimed at helping individuals overcome their problems. Delinquent behavioural modification of students in public secondary schools refers to students' change of behaviour from what is inappropriate to that which is appropriate as a result of counselling interventions in school (Mather & Goldstein, 2013). This is expected to be a positive change in behaviour by a delinquent student. The aforementioned components of social cognitive skills should be able to apply in this change to be seen to predict the behaviour modification in the delinquent students.

From preschool to mid-elementary school, which is about ages 3 to 5, antisocial students' behaviour changes in form and increases in intensity. Snyder and Stoolmiller (2012) note that during the preschool years these children, whose ages range from 3 to 5, often display aversive behaviours such as frequent whining and noncompliance. Later, during the elementary school years, with ages of between 6 and 9, these behaviours take the form of less frequent but higher intensity acts such as hitting, fighting, bullying, and stealing. During adolescence, between ages 10 to 16, bullying and hitting may escalate into robbery, assault, lying, stealing, fraud, and burglary (Snyder & Stoolmiller, 2012).

Adolescence is a period highly marked by crisis for the adolescent as he or she strives to acquire independency and his identity. Adolescents' attitudes, values and behaviour could be influenced positively or negatively by their peer group and sometimes resist their parents' authority. Odigie's (2013) study in Nigeria focused on applying counselling models in managing adolescent psycho-social crises. A laboratory approach using a simulated problem situation to determine the effectiveness of the Cognitive-behavioural counselling model in managing psycho-social crisis was adopted with a quasi-experimental design. 30 students were randomly selected from 100 volunteer adolescent Students of the University of Ado-Ekiti and a 10-item psycho-social Stress Reaction Questionnaire was used to test their reactions. The study used 30 students (15-membered control and experimental groups respectively) before and after treatment. It was found that problem-solving and self-talk skills training in the cognitive behavioural counselling model enhances adolescent positive reactions to psycho-social stress. It was recommended that parents should use counselling services for the management of the psychosocial issues of their adolescent children.

Odigie (2013) highlights that the adolescent period is marked by great emotional stress when children detach emotionally from their parents and seek to make their own choices about their activities, diet, time schedule, and so on. There is increased sociability with peers and risk-taking behaviour as the adolescents strive toward acquiring the necessary skills for survival in adulthood. Adolescents are observed to be highly involved in drug abuse, which greatly affects educational performance. Aligning with the observed adolescents, Olatunde (2001) posits that those with poor academic records are those who had taken drugs to aid their preparation for the examinations. The Odigie (2013) study was carried out among university adolescent students who have different behaviours compared to the secondary school adolescents hence the need to carry out one with the secondary school behaviours to have relevant data to the adolescents at the secondary school level.

The study also made use of questionnaires and a laboratory approach to respondents which may not give the full picture of the respondents. The current study is making use of both qualitative and quantitative tools of data collection which give deeper response thoughts on their behaviour based on the findings of Coetzee's (2011) study in South Africa, the

following recommendations are made for effective management of disciplinary problems - all members of the staff, including the Principals and vice Principals should exhibit the spirit of teamwork in order to energize morale and enhance staff motivation; the causes of disciplinary problems are addressed if teaching staff are actively involved in the teaching programmes of their school; parents should make education a priority for their children, this will make the children achieve better and behave in an acceptable manner; moderate right syndrome and formulation of behavioural expectations for teachers and learners will improve school discipline; and teacher effectiveness training leads to increase in classroom activity engagements of the students thereby monitoring efficiency through data base evaluation; moral punishment, rewards, praise and blame create room for reinforcement of positive performance which is the guideline for the impulsiveness of the students; self-government and appropriate school leaving theory defines the role of learners beyond classroom and improves sense of the commitment for the learners; all staff should cultivate model self-discipline behaviour; school management should approach the problem of discipline with empathy for the possible problems the learners may be experiencing at home or at school that cause their poor behaviour (Coetzee, 2011). This study in South Africa was on disciplinary problems' management while the current study was on predictors of delinquent behaviour modification of secondary school students.

Alternately, another study in Nigeria observed that parents, school management, and other staffers of the school should join hands in ensuring that a climate conducive to teaching and learning is prevalent in Jalingo secondary schools (Temitayo, Nayaya & Lukman, 2013).

Parents use behaviour modification to teach their children right from wrong. Therapists use it to promote healthy behaviours in their patients. Animal trainers use it to develop obedience between a pet and its owner. We even use it in our relationships with friends and significant others (Achi & Eremie, 2018). The purpose behind behaviour modification is not to understand why or how a particular behaviour started. Instead, it only focuses on changing the behaviour, and there are various methods used to accomplish it. These techniques of behaviour modification include positive and negative reinforcement. Positive reinforcement involves pairing a positive stimulus with a behaviour. Negative

reinforcement on the other hand is the opposite and involves the pairing of behaviour with the removal of a negative stimulus (Achi & Eremie, 2018).

A study in Nigeria aimed at unravelling types of disciplinary problems, their causes, and far-reaching means of managing disciplinary problems among the secondary school students in Nigeria and Taraba state in particular (Temitayo, Nayaya & Lukman, 2013). From this study, indiscipline in school is certainly seen as a matter of immediate concern to the teaching profession which needs some remedial measures to correct. This study had indiscipline and the teaching profession while the current study is on the predictor nature of social cognitive skills in modifying delinquent behaviour.

In another study carried out in Nigeria, poverty and inequitable educational opportunities were seen to also predispose school youths to violence (Ohsako, 2007). These behaviour problems manifest in the form of violent activities, promotion of sex clips in class, fighting, bullying, and destruction of property (Kinai, 2004). Other studies from Africa have also shown that physical fighting among school-going adolescents is prevalent. For example; Rudatsikira, Sisiya, Kasembe and Muulu (2007) reported that 50.6% of adolescents had engaged in physical fighting within the past 12 months before the survey in Namibia and Southern Africa.

Gyan, Baah-Korang, McCarthy and McCarthy (2015) in their study, Causes of Indiscipline and Measures of Improving Discipline in Senior Secondary Schools in Ghana, report that these can be reduced by making students be in charge of their personal abilities as they are identified by a majority of the respondents who shared the opinion that it is the students themselves who cause such acts of indiscipline. This study had a general look at the measures of improving discipline while the current study narrowed down to social cognitive skills and their predictor nature on delinquent behaviour modification among secondary school students.

The problem behaviours have been of great concern that Government of Kenya, (2001) presents the Wangai report which examined the causes and remedies to mass indiscipline and unrest among secondary school students. Aloka and Bujuwoye, (2013) also highlight behaviour problems among Kenyan secondary school students have been on the rise over

the years. For example, in the year 2001, some students used petrol to burn a Kyanguli Boys' Secondary school dormitory and some 68 students died in the inferno. Both 2002 and 2005 also witnessed cases of arson in different Kenyan secondary schools by students. In July 2012, over 300 students of two Kenyan secondary schools were reported to have boycotted classes and violently protested their school authorities' decision refusing to shift entertainment sessions from daytime to nighttime. It is argued that problem behaviours are related to parents not spending time with their children. Such parents fail in meeting the socialization needs of their children and hence they develop problem behaviours. Some observations indicate that the role confusion observed among adolescents is linked to parents absconding responsibilities in raising their children (Muindi & Koro, 2008).

Simatwa (2007) in a study in Kenya reports that in 1980, recorded cases of schools that experienced these cases of indiscipline were 22 (0.9%). This increased to 187 (7.2%) in 1990. These cases continued to increase unabated to the extent that, in 2001 the Ministry of Education introduced guidelines on safety in schools. The study further notes that in 1998, 26 girls at Bombolulu Girls Secondary School were burnt to death; in 1999, 17 girls at St. Kizito Secondary School were killed and 70 raped; at Nyeri Boys High School, four prefects were burnt to death in their dormitory; and in 2001, 67 boys at Kyanguli High School were burnt to death by their colleagues (Wabala, 2017, p.9).

Still in Kenya, according to the Republic of Kenya report in 1991 and 2001 common indiscipline cases in schools include the following; lateness, chronic absenteeism, truancy, rudeness, insubordination, disrespect, unacceptable verbal expressions of dissatisfaction, abuses, destruction of property, bullying fellow pupils, indecent behaviours like rape and arson (MOEST) (2000/2001). Such happenings have proved that there is a problem with our secondary school system. In the second term of 2016, there were a lot of unexplained school fires that affected more than 200 schools and cost millions of shillings in losses with more than 100 students facing charges in court for the same (Ombati, 2016). These were blamed on a lot of issues but the underlying reason is students' behaviour. It points to some very wrong trend in our educational institutions which needs to be stemmed before we miss out on our future leaders who are currently our secondary school students.

In Kisii County of Kenya, students' behavioural problems have led to the destruction of property, interference with learning programs, psychological, and academic achievement have been reported in several schools since 2011 (CDE's Office Kisii County, 2014). Educational programs require that students live in an environment where they are peaceful and are instructed with the right knowledge, skills values, and attitudes (Abiero, 2009). However, in the past, student behaviour problems have been observed to be on the rise leading to challenges for stakeholders in the education sector (Kangare, 2008). The student behaviour problems have resulted in death, destruction of property, deformities, truancy among students, and interference with the learning and teaching in schools (Ruto, 2009). Chemutai, Onkware, and Iteyo (2020) observe that Kenya has faced several incidents of student conflicts in Secondary schools mainly attributed to the cases of indiscipline and conflicts among students in the schools.

Another study by Chemutai, Onkware, and Iteyo (2020) on the nature of student unrest in secondary schools in Kericho County, Kenya observed that despite the establishment of the student council in secondary schools in 2013 to act as a bridge between the administration and the students, the expectation that the cases of conflicts in secondary schools would reduce never happened. In 2015 alone, incidences of student unrest in schools including Kericho Boys High, Londiani Boys High School, Keben Secondary School, and Kiptewit Secondary School have shown that student unrest is a serious issue that has to be addressed in the county (Chemutai, Onkware, & Iteyo, 2020)

In Rongo Sub-County, several students are currently undergoing counselling to address delinquent behaviour issues. The delinquent behaviour issues range from stealing, aggression, fighting, sneaking out of school, substance abuse, lateness in attending lessons, lesson missing, use of abusive language on others, disrespect to teachers, and many others. Table 1 shows a sample of data on the number of students undergoing behaviour modification by school Teacher Counsellors.

Table 1: *Data on the number of students undergoing guidance and counselling for delinquent issues in Rongo Sub-County public secondary schools*

Year	Number of cases of delinquency documented	Number of schools
2014	1,040	13
2015	1,600	16
2016	1,450	21
2017	1,704	17
2018	1,871	18
Total	7,665	85

Source: Rongo Sub-County Secondary schools, 2019

From Table 1, the numbers of students being attended to can be observed to be increasing in Rongo Sub County as the years pass by.

Table 2: *Datathe on number of students undergoing guidance and counselling for delinquent issues in Migori County public secondary schools*

Sub-County/Year	2014	2015	2016	2017	2018
Kuria East	830	941	822	1,040	1,051
Kuria West	756	832	782	972	1,043
Nyatike	947	1,035	927	1,078	1,139
Suna East	812	954	886	997	1,046
Suna West	934	1,040	998	1,089	1,308
Uriri	902	1,046	950	1,070	1,670
Awendo	867	944	879	980	1,004
Total	6,048	6,792	6,244	7,226	7,315

Source: Migori County Director of Education’s Office, Migori, 2019

Table 2 further gives the general picture of the number of students benefitting from the services of the guidance and counselling departments in Migori County. These seem to be on the increase as evident in the figures registered in the successive years. The numbers in the other sub-counties are, however, lower than those of Rongo Sub-County making it of greatest concern in Migori County.

1.2 Statement of the Problem

The government of Kenya expects secondary schools to use more guidance and counselling to instil discipline in students rather than corporal punishment to enforce the same (Wambu & Teresa, 2015). Schools play an important role in the socialization process of young people as they learn to regulate their conduct, respect others, manage their time responsibly, and thus become responsible citizens (Saldana, 2013). The different disciplining styles that can be employed by the teachers are corrective, supportive, and preventive. However, the current situation in the Kenyan education system has been hit by a wave of indiscipline among students which is escalating rapidly with notable strikes,

bullying, arson cases in schools, absenteeism, vandalism of school property, general refusal to follow school rules and regulations as well as increased alcohol use (Chonge, 2016).

This, therefore, calls for the modification of behaviour among delinquent public secondary school students in Kenya using psychological approaches rather than physical punitive methods. Discipline is expected of all students in Kenyan secondary schools. There has been a lot of research touching on other skills when it comes to improving students' behaviour for example drama skills (Pachomias, Ndwiga & Wachira, 2020). Alemayehu (2012) and Oluremi (2013) indicate that there has been an indication that there is increase in student indiscipline which interferes with teaching and learning.

Skills such as self-control, vicarious experience, rational attribution, and inhibition can be buttressed by counselling sessions. However, there is an increase in the number of delinquent behaviour in among students in secondary schools of Rongo Sub County and most of the affected students should be undergoing guidance and counselling services in their schools (Personal communications, 2018). Despite delinquent students being expected to undergo guidance and counselling services, indiscipline problem persists. Therefore, this study sought to find out the predictor nature of social cognitive skills acquired from guidance and counselling services in succeeding with behaviour modification among delinquent students in public secondary schools.

1.3 Purpose of the Study

The purpose of the study was to research social cognitive skills as predictors of delinquent behaviour modification among students in public secondary schools in Rongo Sub County, Migori County of Kenya.

1.4 Research Objectives

The objectives of this study were:-

- (i) To examine the relationship between self-control and delinquent behaviour modification among public secondary school students in Rongo Sub-County.
- (ii) To establish the relationship between vicarious experience and delinquent behaviour modification among public secondary school students in Rongo Sub-County.

(iii) To determine the relationship between rational attribution and delinquent behaviour modification among public secondary school students in Rongo Sub-County.

(iv) To establish the relationship between inhibition and delinquent behaviour modification among public secondary school students in Rongo Sub-County.

1.5 Research Hypotheses

The study made use of null hypotheses:-

H0₁: There is no statistically significant relationship between self-control and delinquent behaviour modification among public secondary school students in Rongo Sub-County.

H0₂: There is no statistically significant relationship between vicarious experience and delinquent behaviour modification among public secondary school students in Rongo Sub-County.

H0₃: There is no statistically significant relationship between rational attribution and delinquent behaviour modification among public secondary school students in Rongo Sub-County.

H0₄: There is no statistically significant relationship between inhibition and delinquent behaviour modification among public secondary school students in Rongo Sub-County.

1.6 Significance of the Study

This study would form the basis for future research in public secondary school students' delinquent behaviour modification for researchers interested in this area. The study findings would help the Ministry of Education in knowing where to lay stress when it comes to policy formulation in so far as students' behaviour is concerned. In addition, the findings may help secondary school principals to gain insights into the happenings at this level to help them with developing mitigating factors in good time instead of concentrating on the measures that may not be working when it comes to students' behaviour modification. Thirdly, the findings would help the teacher counsellors better understand students' behaviour modification from the learners' inner foci instead of the outside hence helping them redirect or develop a more positive outlook. Finally, parents can also utilize

the findings to provide their children with the right social cognitive skills leading to successful behaviour modification of public secondary school students.

1.7 Limitations of the Study

The study findings will be limited to all public secondary schools in Kenya and thus may not be generalized to cover private secondary schools, tertiary institutions, and universities in Kenya. This is because the approach to guidance and counselling in these institutions may not be the same as the one adopted in public secondary schools. The findings may also not reflect what goes on in developed countries since their educational policies and type of educational systems are significantly different from those in Kenya which is the area of study for the current research.

Finally, the research does not claim perfection as it may be faced with the inherent limitation due to the likely untruthfulness of some respondents. Cooper and Schindler (2011) observe that there are very few perfect researches which, however, have very little effect on the validity and reliability of the research.

1.8 Scope of the Study

The study confined itself to the successfully guided and counselled delinquent students in public secondary schools within Rongo Sub-County. Data collected was on social cognitive skills, social-cognitive control, vicarious experience, rational attribution and inhibition as predictors of delinquent behaviour modification among students in public secondary schools in Rongo Sub-County. The study made use of concurrent triangulation design from the mixed-method paradigm mixed-methods theoretical framework had Albert Bandura's Self-efficacy and Skinner's Reinforcement theories. It was carried out within a month to allow for the full collection of data to ensure a high return rate.

1.9 Assumptions of the Study

It was assumed that all of the respondents of the sampled schools gave a truthful response to the research questions because the researcher expected the respondents to be having the information being sought either through personal communications or documented information.

Another assumption was that the respondents would cooperate in the research. This was because the respondents may have a lot on their hands which may make them not have time off for exercise. The study was eased by allowing the respondents to choose the days they were comfortable with.

1.10 Theoretical Framework

A theoretical framework indicates the researcher's assumptions and beliefs. Radhakrishna, Yoder, and Ewing (2007) mention that a theoretical framework is a conceptual model of how one theorizes or makes logical sense of the relationships among several factors that have been identified as important to the problem. A theoretical framework determines which questions are to be answered by the research, and how empirical procedures are to be used as tools to answer these questions (De Vos, Strydom, Fouche & Delpont, 2005).

This study made use of two theories that is Bandura's self-efficacy theory and Skinner's reinforcement theory.

1.11.1 Self-Efficacy Theory

Bandura's self-efficacy theory according to which vicarious experiences are one of the main sources that influence the efficacy of the individual teacher and alter efficacy beliefs through the transmission of competencies and comparison with the attainment of others (Bandura, 1997). Multiple studies have provided evidence of the role that vicarious experiences play in influencing self-efficacy (Bandura, 1986; Bandura & Jourden, 1991; Bandura & Menlove, 1968).

Bandura (1997, p. 91) defines self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments". "Self-efficacy is a future-oriented belief about the level of competence a person expects he or she will display in a specific situation" (Tschannen-Moran, Woolfolk & Hoy, 2010, p. 46). Bandura also proposed that self-efficacy beliefs influence thought patterns and emotions that enable actions in which people expend substantial effort in pursuit of goals, persist in the face of adversity, rebound from temporary setbacks, and exercise some control over events that affect their lives (Tschannen-Moran et al., 1998).

Bandura (1997) points out that for many activities measures of adequacy can be calculated. For example, the measurements of adequacy associated with flying an aircraft are well-defined (Bandura, 1997). But for many activities “there are no absolute measures of adequacy. Therefore, people must appraise their capabilities about the attainments of others” (Bandura, 1997, p. 92). One of the ways this is done is by observing models performing tasks. Individuals seek out skilled models because these competent models transmit knowledge and teach observers effective skills and strategies for managing environmental demands (Bandura, 1986). Acquisition of effective means raises beliefs of personal efficacy (Bandura, 1997).

According to Bandura when a person observes another similar individual successfully model a given event, individual efficacy beliefs are typically raised. Conversely, when a person observes another similar individual fail at a given event, individual efficacy beliefs typically decline (Bandura, 1997). Successful events are much more effective at increasing efficacy if the individual being observed is deemed competent by the observer (Bandura, 1997). Competence at a given task, activity, or event is believed to be more effective at increasing efficacy than the age of the model, sex of the model, or other personal characteristics (Bandura, 1997). Model competence is an especially influential factor when observers have a lot to learn and models have much they can teach them by instructive demonstration of skills and strategies (Bandura, 1997).

Bandura (1977) believed that direct reinforcement could not account for all types of learning. As such, Bandura added a social element, arguing that people can learn new information and behaviours by watching other people. He noted that external environmental reinforcement was not the only factor to influence learning and behaviour but also intrinsic reinforcement such as pride, satisfaction, and a sense of accomplishment. In other words, this theory assumes learning to be a social activity that is based on one’s needs as a human being to fit in with others. In an organizational setting, this happens naturally as workers learn to fit into the perceived organizational culture. Fitting here means that one can be accepted successfully into the organization but does not necessarily mean the individual has internalized and believes in the way things are done in the organization.

According to Bandura when a person observes another similar individual successfully model a given event, individual efficacy beliefs are typically raised. Conversely, when a person observes another similar individual fail at a given event, individual efficacy beliefs typically decline (Bandura, 1997). Successful events are much more effective at increasing efficacy if the individual being observed is deemed competent by the observer (Bandura, 1997).

Students in school are social and they learn from each other and also feel the need to belong hence picking what they think makes them appear like those around them to fulfil this. These lead to most students developing a way of behaving that would be typical of a school community which can have an impact on good or bad behaviour. The administration, therefore, has to take cognizance of this in trying to impart a societally acceptable mode of behaviour to its student population and discourage bad ways.

Students arrive in a new school with values, attitudes, beliefs, and expectations that they have acquired elsewhere. They are supposed to exit this new environment with some new positive learning. They cannot do this without active input from the change elements in this new environment and their perception of the goodness or badness of the input towards this. This brings in the need to carefully understand their thought processes as well as the social situation before putting in place a workable plan of action. When students observe successful events in schools, they are more prone to model these hence registering success in their endeavours in the school. Competence is another characteristic that helps students. When this turns out to be positive in a given task then the student's skills and strategies are built.

Greenwood and Abbott (2001), further supporting Bandura's theory, opine that how teachers respond to student problem behaviour can impact the extent to which behaviours are maintained, intensified, or changed. Best practices suggest that teachers use effective, research-based behavioural interventions in their classrooms, but several key factors influence if, when, and how teachers intervene. The students in our public secondary schools have an active interaction with themselves, teachers, school administration, and parents. The skills they get from these interactions may offer some guidance towards the modification of the delinquents in school.

Leff and Posner (2009) look at Bandura's Social Learning Theory as one that can also be utilized to change students' behaviour. This is because this theory suggested that the young imitate adults' behaviour and these adults in a school environment are teachers and administrators. Bandura (1997) further notes that they can see how these are reinforced over time. Social Learning theories emphasize the importance of the social context and posit that learners can learn by observing others' actions and whether these individuals are positively or negatively reinforced when exhibiting such behaviour. These would be in terms of the deviant students who may learn either directly or vicariously.

1.11.2 Skinner's Reinforcement Theory

The reinforcement theory of motivation (also called contingency theory) is an outgrowth of the behaviourist school of psychology. Skinner (1974), who propounded the reinforcement theory, holds that by designing the environment properly, individuals can be motivated. Instead of considering internal factors like impressions, feelings, attitudes, and other cognitive behaviour, individuals are directed by what happens in the environment external to them (Epstein, 1997). Skinner argued that the internal needs and drives of individuals can be ignored because people learn to exhibit certain behaviours based on what happens to them as a result of their behaviour. Skinner states that the work environment should be made suitable for the individuals and that punishments lead to frustration and de-motivation. Hence, the only way to motivate is to keep on making positive changes in the external environment of the organization (Epstein, 1997).

Reinforcement can be divided into positive reinforcement and negative reinforcement as follows:- Positive reinforcement occurs when the consequence resulting in the behaviour you are attempting to produce increases the probability that the desired behaviour will continue. If a salesperson performs well, that salesperson may receive a bonus, which reinforces the desire to make sales because of the positive consequence of doing so (Epstein, 1997). Negative reinforcement occurs when a negative consequence is withheld if the behaviour you desire is demonstrated, which will increase the probability that the behaviour you are seeking will continue.

Skinner also showed that behaviours can be altered through punishment or extinction. Punishing behaviours after they occur discourage them from being later repeated. For example, if a rat was jolted with electricity when it pressed a pedal, it would begin to avoid touching it, avoiding performing the undesirable behaviour (Epstein, 1997). Extinction is when behaviours that were previously reinforced are later unenforced, rendering the behaviours inconsequential and causing them to decrease in frequency over time. If the rat that had been trained to push a pedal for food ceased receiving food for pressing it, eventually it would press it less and less often. In time, after it has become thoroughly discouraged by the lack of dispensed rat treats, it may stop pressing it altogether (Epstein, 1997).

The theory informed the present study in that students' behaviour may be changed for the better if they are appropriately instilled with the right societally agreed ways of behaving. The teacher-counsellor who is dealing with guidance and counselling can make use of this counselling approach to effect such a change. Explain how guidance is seen as a reinforcer of appropriate behaviour among students.

Guidance and counselling can be a good approach to reinforcing appropriate behaviour among students. Salgong, Ngumi, and Chege (2016) say that the main goal of guidance and counselling is to help people understand themselves cope with life experiences healthily and be able to recognize the factors that cause problems and look for appropriate methods of resolving or avoiding the situations that may lead to unhealthy lifestyles. Through guidance and counselling, students are given solutions on how to deal with psychological problems which might affect their studies. Guidance and counselling services, Ajowi and Simatwa (2010) further noted, are essential elements in the discipline management of people in all societies.

Bandura's Self-efficacy has been criticised as having beliefs that do not always guarantee positive outcome expectations (Pajares, 1996). The theory is also said to have the possibility of misleading if one has to base another person's self-efficacy for a new task on the results of the previous tasks (Bandura, 1986). Bandura (1986) is further quoted as saying that personal factors and distorted memories of previous performance can distort

one's self-efficacy. Skinner's reinforcement theory is accused of denying that ideas and thoughts exist (Jensen & Burgess, 1997). Jensen and Burgess (1997) criticize Skinner's theory saying that the behaviour of a person cannot be understood without including the mental activity of the individual. Weiss and Rosales-Ruiz (2014) note that the reinforcement theory focuses only on behaviour and ignores the role of physiology, neuroscience, and genetics. Reinforcement theory is criticized as having been from animal training to human education and in many cases, such applications are efficient in performing behavioural change (Hill, 2001).

The theory that had the greatest weight in the current study was Skinner's Reinforcement Theory as it had most of what has to do with behaviour change among students in secondary schools. Bandura's Self-Efficacy theory was a supporting theoretical framework.

1.12 Conceptual Framework

The conceptual framework for this study takes into consideration all possible factors from the literature and from observations to derive the dependent, independent, and mediating variables for descriptive and inferential analysis. Figure 1 illustrates relationships between delinquent students' social cognitive skills constructs of self-control, vicarious experience, rational attribution and inhibition.

Independent variable (Social cognitive skills)

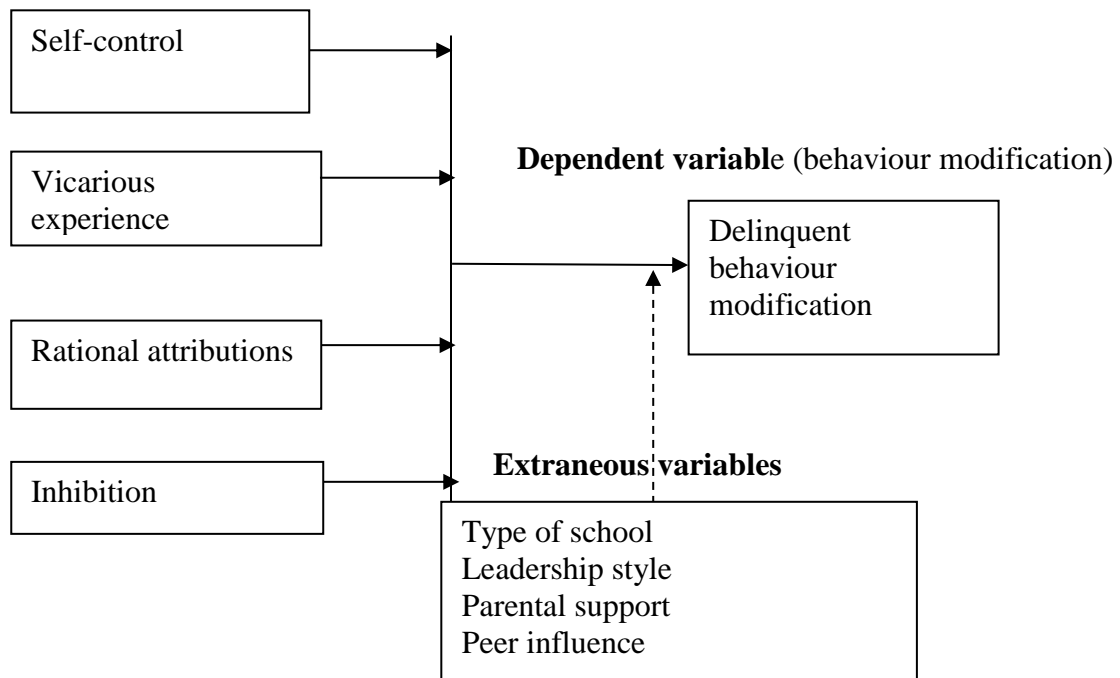


Figure 1: *Conceptual framework for examining social cognitive skills as predictors of delinquent students' behaviour modification*

The dependent variable is delinquent students' successful behaviour modification while social cognitive skills' constructs of self-control, vicarious experience, rational attribution, and inhibition constitute the independent variables. Constructs such as type of school, leadership style, parental support, and peer influence are treated as extraneous variables as they are believed to also affect the dependable variables but were not included in the study.

The conceptual framework variables interact individually and together to produce either the desired characteristics or undesired ones in students. When students have self-control, they can keep to the requirements of the institutions of learning. When this is missing then we end up with a lot of delinquent behaviour in our schools. There is a vicarious experience that students go through while in school. The positive ones help with bringing up students who are well-behaved while the negative ones, like drug and alcohol use, keeping off school during school days make students become delinquents. Rational attribution, if well-internalized, leads to students who know what they are doing, when they are to do it and where. This leads to students who follow school rules and are well-behaved in school. The opposite gives students who are prone to negative behaviour in school and who are delinquent.

Delinquent students' successful behaviour modification, in general, is influenced by students' social cognitive constructs of self-control, vicarious experience, rational attribution, and inhibition. The study hypothesizes that delinquent students' social cognitive skills affect students' successful behaviour modification significantly.

The extraneous variables in this study were the type of school, leadership style, parental support, and peer influence. These identified extraneous variables can influence students' behaviour. For instance, the type of school would enforce a particular kind of behaviour on learners who have come from a variety of backgrounds. Leadership style also does impact the way a school's learners interact and behave. The parental support gives some direction to the way learners' behaviour comes up as they interact in school. Peer influence, as indicated by the two theories in use in this study, makes learners either well behaved, badly behaved, or makes the delinquent modify their behaviours.

1.13 Operational Definition of Terms

The following terms have been defined as used in the study:-

Social-cognitive skills – These are all the abilities that enable us to understand social

agents and interact with them. For this study, these mean students' logical interaction with others in school such as fellow students, teachers, and non-teaching staff. The meeting and communicating with a teacher.

Behaviour modification – These are the techniques used to try and decrease or increase a

particular type of behaviour or reaction. In the context of this study, it meant students' change of behaviour from what is inappropriate to that which is appropriate. Involves participating in school activities as required by school rules and regulations. For example, reducing truancy in school.

Delinquent behaviour – This is defined as a criminal act committed by a human

confronting the laws of civil society. In this study, it refers to that act that goes against the expected in a school situation.

Self-control – It is an aspect of inhibitory control, the ability to control one's emotions

thoughts and behaviour in the face of temptations and impulses. In this study, it means the student's cognitive ability to control one's emotions and behaviour in the face of temptations and impulses in order to achieve his or her goals. Being attempted to skip school at the expense of missing out on the day's learning.

Vicarious Experience – This is the phenomenon of observing another and feeling what

they feel. This study used it as the knowledge or information about a skill or behaviour that students derive from seeing the performance of others in school for example keeping to the school rules and routine.

Rational Attribution – This refers to inferring that personal factors are the cause of an

event or behaviour. In this study it means the process by which students logically explain the causes of their behaviour and events. An example would be explaining truancy in terms of having felt sick.

Inhibition – This a feeling that makes one self-conscious and unable to act in a relaxed and natural way. The study had it as the act of preventing or slowing the activity or occurrence of inappropriate behaviour in school. The attempts at making it to school despite the feeling to skip the same.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature reviews on the relationship between self-control and behaviour modification, the relationship between vicarious experience and behaviour modification, the relationship between rational attribution and behaviour modification, and the relationship between inhibition and behaviour modification among secondary school students in Rongo Sub-County. The literature has been reviewed from the world, Africa and Kenyan perspectives. Moreover, the research gaps from the reviewed studies have been identified.

2.2 Self-control and Behaviour Modification

Self-control refers to the individuals' ability to overcome or change internal reactions, suppress impulses, and interrupt impulsive behaviour response trends, such as changing and adjusting behaviours, thoughts, emotions, and habituation (Li & Zhang, 2011).

Borushok (2014) in a study in the United States examined the relationship between trait self-control, weight loss and various health behaviours commonly associated with successful weight loss. This was therefore a related study as it had the variables of self-control and predictability and behaviour of people. Forty-three overweight and obese individuals participated in an 18-week behavioural weight loss program. The study involved pre-and post-treatment of the participants. Results showed a relationship between baseline trait self-control and baseline body fat percentage. In addition, results indicated that trait self-control increased throughout the intervention and this change in trait self-control was moderately associated with self-monitoring, calories expended through physical activity and per cent weight loss from baseline to post-treatment and baseline to six-month follow-up.

The Borushok (2014) research was longitudinal and had adults while the current study was carried out, cleared once and the analysis done immediately after the results were in without further research on the same respondents later and it also involved secondary school students. The Borushok study also had a modest sample size which may make it limited in

terms of generalization. The current study had a larger sample making generalizations from it more acceptable.

Cochran, Aleksa and Chamlin (2006) used a sample of 18-year-olds plus university students to study restraint: a study on the capacity and desire for self-control. The data collection tool was a questionnaire. They showed that capacity for self-control and desire for self-control has independent effects on academic dishonesty. Further, Cochran et al. (2006) showed that capacity for self-control and desire for self-control interacted, revealing that the interaction was contingent on the desire for self-control. While these studies have illuminated the issue that differences in capacity and desire for self-control exist, they have taken for granted that the individual perceives or sees control over the behaviour. This Cochran, Aleksa and Chamlin (2006) study had a limited data input because it only employed the use of questionnaires while the current study made use of both quantitative and qualitative methods of collecting data hence a richer quantity and quality of data.

However, Tittle and Botchkovar (2005) in a research carried out in Russia showed that individuals may be able to perceive some level of control in their behaviour through the consequences of their actions. Therefore, we would expect that individuals with lower levels of self-control are likely to perceive more control over their behaviour. This reviewed study was on the degree of self-control while the current study was on self-control and hence it was relevant.

Kuhn (2013) study tested dual-process decision-making models as predictors of between-person and within-person variation in risk-taking behaviour. Additionally, the study integrated trait perspectives on self-control and impulsivity with decision-making processes to explain risk-taking. Participants were 580 college students ages 18 and older (M age = 20.45, range = 18 to 52 years). This study involved three parts. First, participants completed a survey assessing decision-making processes, self-control, impulsivity and risk-taking behaviour. Second, a subset of participants completed laboratory-based measures of self-control and impulsivity. Third, participants completed a longitudinal online assessment of their risk-taking behaviour. Dual-process models explained concurrent risk-taking, but only the reasoned decision-making process explained

longitudinal risk-taking. The dual decision-making processes appear to operate through similar pathways, with components from each pathway exhibiting indirect effects through the other pathway. Impulsivity was linked to higher levels of risk-taking because of higher levels of behavioural intentions and willingness, whereas self-control was linked to lower levels of risk-taking because of lower levels of behavioural intentions. Between-person effects were as common as within-person effects, so future researchers are urged to consider decision-making processes averaged across forms of risk-taking and within each form of risk-taking. Altering decision-making pathways may be an effective way to intervene with individuals at high risk for engaging in risk-taking behaviour. While this reviewed study was done using longitudinal online assessment which can easily run into issues of lower return rate as a result of missing out on some participants at some point, the current study employed the had the participants seen at once and for all while the current study had a mixed-method design which utilized both qualitative and quantitative paradigms on a one-on-one basis hence more in-depth data.

Aart, Terrie, Christian, Steglich, Dijkstra and Wilma (2015) in South Africa, investigated the moderating role of self-control in the association between friendship and the development of externalizing behaviour: antisocial behaviour, alcohol use, tobacco use. The main findings indicate that personal low self-control and friends' externalizing behaviours both predict early adolescents' increasing externalizing behaviours, but they do so independently. Therefore, interventions should focus on all early adolescents with lower self-control, rather than focus on those adolescents with lower self-control who also have friends who engage in externalizing behaviour. Whereas this reviewed study was on the moderating effect, the current study investigated the predictor nature of behaviour modification.

Morutwa and Plattner (2014) explored the relationship between self-control and alcohol consumption among students at the University of Botswana and was entrenched within the social cognitive theory of self-regulation. Data were collected from 135 undergraduate students (42.2% female, 57.8% male) with a mean age of 21.22 years ($SD = 2.16$). Self-control was measured by the Brief Self-control Scale. Self-reported alcohol consumption on weekdays and in specific situations was converted into alcohol units. Participants who

reported not drinking alcohol at all (55.6%) scored significantly higher in self-control. For those participants who reported drinking alcohol (44.4%), total self-control scores correlated moderately and inversely with alcohol consumption per week, in situations of stress, happiness, and when with friends. Standard multiple regression analysis revealed that self-control was a stronger predictor of the amount of alcohol consumed than were age and gender. The results are discussed with regard to the role of self-regulatory behaviour in the consumption of alcohol. While this reviewed study looked at participants from the university, the current study focused on secondary school participants.

Allom, Panetta, Mullan, and Hagger (2016) in a study in America, examined the relationship between self-report and behavioural measures of self-control to determine whether these differentially relate to health behaviour. Participants (N = 146) completed a questionnaire and behavioural measures of self-control and reported their physical activity. A direct effect of self-reported self-control on physical activity was observed, qualified by an interaction between self-reported self-control and behavioural measures, whereby greater self-reported self-control was associated with greater engagement in physical activity among those who performed poorly on the stop-signal task and those who performed well on the Stroop task. These results appear to indicate that the combination of trait self-control and behavioural factors leads to facilitative or debilitating effects on behaviour. Self-report and behavioural measures of self-control do not appear to assess the same elements of self-control and should not be used interchangeably. The foregoing study made use of questionnaires alone and did not have any qualitative findings in it while the current study also made use of Focus Group Discussions which therefore led to a more in-depth analysis of the relationships under study.

Laryea, Abdul-Jaleel and Dawson-Brew (2014) investigated the influence of students' self-concept on their academic performance. A total of 297 randomly selected junior high school students in the Elmina Township, Ghana completed the questionnaire, comprising 40 close-ended items related to students' self-concept constructs derived from the literature. The average scores of the second term test scores of students in Mathematics, Integrated Science, English Language and Social Studies were used to measure pupils' academic performance. The questionnaire used for the study was a five-point scale

questionnaire. Both descriptive and inferential statistics were used to analyse the data. It emerged that students' self-concept is perceived positively by students; however, this self-concept does not directly predict students' academic performance. It does so only when students can exert some level of effort in learning what they have been taught during their private studies. It is therefore recommended that teachers, parents, and indeed all stakeholders should see it as a duty to consider this self-concept of students since they influence the development of positive self-concept among students when dealing or interacting with them. Also, they must help, monitor and supervise students to have a private timetable for learning and to guide them in their day-to-day learning since such effort boost students' academic performance significantly. If students' effort in learning goes with their physical, social, esteem, religious, economic and educational orientation self-concepts, then students perform better academically which in turn increases their general academic performance significantly. This reviewed study used the scores of students and questionnaires while the current study applied the data collection method involving getting raw data from the respondents through the use of group discussions.

King, et al (2011) in an American study, examined growth in two aspects of impulse control, self-control problems and attention problems, across middle adolescence, and tested the prospective effects of level and change in these variables on levels and change over time in substance use. Data are from a community sample of 955 adolescents interviewed (along with their parents and teachers) annually from 6th to 11th grade. Results indicated that greater self-control problems and attentional problems in the 6th grade and increases in these problems over time were associated with higher levels of substance use in the 11th grade. Our results suggest that modelling change over time enhances the understanding of how impulse control influences the development of substance use. This foregoing research had young participants whose behaviours can not compare with the behaviour of adolescents who is in secondary school. There is also the data collection tool which in this study was only an interview as a data collection method but lacked a quantitative aspect in it while the current study made use of both questionnaires to have as much raw information as possible.

According to Kelley, et al (2019), self-control is crucial for goal-directed behaviour and contributes to many consequential outcomes in life. Exercising self-control seems to temporarily amplify the reward system. Chronic exertion of self-control may lead to a dysregulated reward system and thereby contribute to outcomes that carry grave costs for individuals and societies, including alcohol and drug addiction, personal debt, obesity, and other undesirable outcomes. The Kelley study was on the contribution of self-control in terms of goal-directed behaviour and outcomes to life while the present research was on the predictive nature of self-control.

Participants in one study exerted self-control before they played the dictator game as the proposer (Achtziger, Alos-Ferrer & Wagner, 2015). Those who had exerted self-control in the first phase of the experiment kept more money for themselves throughout the task, thereby acting in a more self-serving manner. This pattern is consistent with the view that the hedonic value of money was more salient or appealing to those who had previously exerted self-control. A pair of studies found evidence that exercising self-control increases risk-taking on measures of hypothetical decision making and behavioural risk-taking, respectively (Freeman & Muraven, 2010). In Study 1, after exerting self-control or not, participants completed a modified version of the choice dilemmas questionnaire wherein participants read 12 vignettes pitting a desirable option with a low likelihood of attainment (that is, the risky choice) against a less desirable alternative with a high likelihood of attainment. After exerting self-control, participants selected more risky choices on the choice dilemmas questionnaire. While this study had external self-control as a variable, the current study looked at self-control as the locus of behaviour prediction. The foregoing study had the use of questionnaires as the only tool for data collection but lacked in-depth findings from qualitative data while the current study also made use of both questionnaires and interview schedules to get more reliable data.

A study by Schmeichel et al. (2010) found increases in self-reported approach motivation (often related to positive affect) after participants had exerted self-control. The dependent measure in this study was unrelated to self-control and not easily interpreted through the lens of decreased control capacity. In two studies, Crowell, Kelley and Schmeichel (2014) found that individual differences in reward responsivity moderated the after-effects of self-

control exertion. Specifically, following self-control exertion, those higher in trait approach motivation demonstrated increased optimism (Study 1) and a broadened attentional scope (Study 2) – two outcomes associated with approach motivation – compared to participants who did not exert self-control. These results lend support to our central thesis, namely that shifts in motivational orientation toward increased reward sensitivity represent one process by which exercising self-control influences subsequent responses. The research here was on the moderation of self-control while the current study was on the self-control variable's predictor ability of one's behaviour.

Finley and Schmeichel (2018) examined the extent to which prior self-control shifts emotional evaluation of affective stimuli. Participants first exerted self-control (or not) and then viewed positive, negative, and neutral images and reported their emotional reactions to the pictures. After self-control exertion, participants reported feeling more positive affect in response to positive images, and this increase was particularly prevalent among participants with a proneness toward positive affectivity (that is, those higher in extraversion). Leuthi and colleagues (2016) examined changes in neural responses after self-control exertion (or not) on a subsequent Stroop task incentivized with money. Participants were randomly assigned to one of four conditions: depletion/high motivation, depletion/regular motivation, no depletion/high motivation, and no depletion/regular motivation. The results indicated that, in the absence of a financial incentive, prior self-control exertion impaired Stroop performance. But a financial incentive for performance (that is, high motivation) eliminated the depletion effect on Stroop performance, consistent with evidence that financial incentives can counteract the effects of prior self-control exertion. This reviewed study looked at the prior self-control and its effect on behaviour while the current research was on later self-control and its effect on the predictability of behaviour.

Of the imaging studies reviewed here, only Wagner et al. (2013) examined functional connectivity. They found that participants who had previously exerted self-control showed reduced functional connectivity between the OFC and the IFG. To date, no studies have examined fronto-striatal functional connectivity after self-control exertion. One study found that when participants made choices favouring long-term goals over immediate

desires, these choices were associated with a negative functional coupling between the PFC and striatal regions (Diekhof & Gruber, 2010). This result points to the importance of fronto-striatal connectivity to self-controlled decisions. The emerging rather than previous self-control was the focus of the current research.

Lee and Kimmelmeier (2017) examined whether beliefs about the malleability of self-control qualify any training effects. Participants in the training condition were assigned to increase the use of their non-dominant hand for two weeks, and did comply mainly if they held high-malleability beliefs; yet, compared to a control condition, the physical measure of self-control did not improve. This was also evident in a secondary objective measure of self-control, a Stroop task, as well as in self-reported self-control.

Staubitz, Lloyd and Reed (2019) study evaluated the effects of self-control training with a rule-following requirement on the impulsive choices of 6 elementary students with emotional and behavioural disorders using a modified changing criterion design. Results indicated that self-control training alone did not improve self-control, but a modified version of self-control training with a rationale and rule for selecting the delayed reward promoted self-control for 3 participants. The remaining 3 participants continued to make impulsive choices despite further modifications to the self-control training protocol. This reviewed study was on inherent self-control while the current study was on induced self-control and its predictability of behaviour modification.

Hagger, Gucciardi and Hamilton (2019) tested whether relations between trait self-control and health-related behaviour and between implicit self-control and health-related behaviours were moderated by self-control beliefs. Students (N=176) completed self-report measures of trait self-control, lay beliefs that self-control is limited or non-limited, non-planning, participation in health-related behaviours demographic variables. Participants also completed a measure of implicit self-control using an implicit association test. Analyses indicated significant negative relations between implicit self-control and impulsive drinking and alcohol consumption. It was found that there was a positive relationship between implicit self-control and exercise behaviour, and a negative relationship between implicit self-control and impulsive eating, both of which fell marginally short of statistical significance. Trait self-control significantly predicted all

behavioural measures and attenuated relations between implicit self-control and health-related behaviour. This reviewed research made use of questionnaires alone hence not much data was collected while the current study is bound to produce more information as a result of having an additional interview schedule to gather confirmatory data.

Ahmad et al (2012) study examined the effect of a self-control training program on enhancing social skills in students with ADHD. The study selected a pre-test-posttest control group design for a sample of twenty male students in an elementary school in Tehran, Iran. The sample was divided into experimental and control groups with the implementation of the treatment for the random assignment of the experimental group for the period of one month. A repeated measure method was performed to analyze the data. The results indicated that the self-control training procedure was significantly effective in improving the social skills of students with ADHD. The follow-up data indicated the effectiveness of the treatment after the lapse of one month. The results suggested that teaching self-control techniques to students with ADHD would enhance their social skills. This reviewed research examined the effect of a self-control training program on enhancing social skills in students with ADHD while the current research looked at the predictability of self-control of behaviour modification. This reviewed research made use of a pre-test-posttest control group design but it lacked any qualitative findings while the current study had a mixed-method research design.

Powers, Moshontz and Hoyle (2020) analyzed data from a multi-site research project that assessed trait self-control, affect regulation, and anxiety in a longitudinal cohort design (N = 1314) using structural equation modelling. The study found that greater self-control did predict lower third-year anxiety, even after accounting for anxiety levels upon entering school. Furthermore, this relationship was partially mediated by maladaptive affect regulation, where students with greater self-control endorsed less use of maladaptive coping strategies, which in turn predicted less subsequent anxiety. In contrast, adaptive coping strategies did not mediate the relationship between trait self-control and anxiety. These findings highlight the trait of self-control as an important predictor of anxiety, and they identify maladaptive affect regulation as a target for interventions to promote student

well-being and success. This foregoing research used a mediator while the current research concentrated on only two variables, self-control and delinquent behaviour modification.

Oliva et al (2019) explored the relationships between self-control with age and psychological maladjustment in adolescents and young adults. The sample consisted of 1,600 randomly selected Spanish adolescents and young adults, aged 12-34 years ($M = 22.28$, $SD = 6.94$). Measures of self-control, Internet addiction, and anxiety-depressive symptoms were administered. Results indicated that adolescents between 15 and 19 years old showed the lowest self-control scores, while older participants showed greater scores. Low scores in self-control were significantly associated with greater substance consumption, more anxiety-depression symptoms, and higher scores on the Internet addiction scale. Also, participants with high scores on the addiction scale scored lower on self-control. These results evidence associations between self-control and some emotional-behavioural problems and suggest the importance of promoting self-control to prevent Internet addiction, substance consumption, and anxiety-depression in adolescents and young adults. This reviewed study looked at self-control and its impact on age and maladjustment while the current study investigated self-control against behaviour modification.

2.3 Vicarious Experience and Behaviour Modification

Wagler (2011) in an American study investigated the impact of vicarious experiences and field experience classroom characteristics on pre-service science teaching efficacy. The participants were forty-six pre-service elementary teachers enrolled in a field experience based elementary science education course and twenty in-service teachers. A pretest was administered to the pre-service elementary teachers early in the semester and consisted of demographic questions and the Science Teaching Efficacy Belief Instrument B (STEBI-B). A posttest was administered to the pre-service elementary teachers at the end of the semester and consisted of field experience questions and the STEBI-B. The field experience in-service teachers provided personal, professional, and classroom characteristics data in the middle of the semester.

Unique to this study is the finding that enactive mastery experiences did not change the preservice elementary teacher's science teaching efficacy during their field experiences as Bandura's self-efficacy theory proposes (Wagler, 2011). Also unique to this study are the findings that variables of student ethnicity, student socioeconomic status and preservice teacher program placement were significant predictors of the preservice elementary teacher science teaching efficacy during their vicarious experiences. Wagler (2011) notes that even though variables of student ethnicity, student socioeconomic status and preservice teacher program placement negatively impacted preservice science teaching efficacy levels, preservice teachers should be placed in these environments when effective support exists. This support has the potential to reverse the negative declines observed in the preservice elementary teacher's science teaching efficacy scores and better equip the preservice elementary teacher with the techniques needed to meet the diverse needs of their students (Wagler, 2011). This Wagler (2011) study focused on the use of a pre-and post-test instrument, the current study made use of a personality-type based questionnaire for the students as well as a Focus Group Discussion to confirm or otherwise the results from the questionnaire.

Tangney, Baumeister, and Angie (2008) incorporated a new measure of individual differences in self-control into two large investigations of a broad spectrum of behaviours. Higher scores on self-control correlated with a higher grade point average, better adjustment, less binge eating and alcohol abuse, better relationships and interpersonal skills, secure attachment, and more optimal emotional responses. Tests for curvilinearity failed to indicate any drawbacks of so-called over control, and the positive effects remained after controlling for social desirability. Low self-control is thus a significant risk factor for a broad range of personal and interpersonal problems. In a series of regression analyses, no significant change in R² was associated with squared terms entered following each SCL-90 subscale. These would detect any signs of curvilinearity in the data, beyond the basic linear effect we already reported. The failure of these analyses to yield significant improvements in prediction suggests that self-control is beneficial and adaptive in a linear fashion. There was no evidence that any psychological problems are linked to high self-control. This study relied on regression analyses only for data analysis but it lacked a qualitative aspect in it while the current study used descriptive statistics and Pearson

Correlation which combined both quantitative and qualitative data hence more comprehensive findings.

Nwagu, Enebechi and Odo, (2018) determined the students' level of self-control in learning for healthy living. A questionnaire adapted from the self-control subscale of the Self-Directed Learning Readiness (SDLR) Scale developed by Fisher, King, and Tague was used in determining the levels of self-control in learning for healthy living among students in Enugu State College of Education (Technical), Enugu, Nigeria. The study revealed that the student's level of self-control was a little less than the recommended level. A significant difference was found in the male and female students' level of self-control in learning for healthy living with the male students possessing a higher level of self-control. Significant differences also occurred in the students' level of self-control in learning for healthy living when the students were classified based on their courses of study. This reviewed study was on health consequences while the current study was on educational behaviour modification results which would be more helpful to one in an educational environment.

Judistira and Wijaya (2018) investigated the role of self-control and self-adjustment on the academic achievement of junior high school students. There were 96 first-year students of Islamic boarding schools in Tasikmalaya enrolled on this study, 48.96% of them were males and 51.04% females. Data were collected by using The Brief Self-Control Scale, Self-Adjustment Scale, and also the final grade of the school report. Data analysis showed that both self-control and self-adjustment correlate with student academic achievement. For further analysis, multiple regression showed that only self-control could predict academic achievement. Also reported from data analysis that boys and girls are different significantly in academic achievement, self-control, and self-adjustment. The data analysis showed that when both the self-control and self-adjustment were analyzed together, only self-control could predict academic achievement ($\beta = 0.182$; $F = 6.620$; $df = 1$; $p < 0.05$). This reviewed study was on a population of junior high school students while the current one was on senior high school students with results being more relevant to teachers in this level of education rather than from students from a lower level.

A study by Mohammad Sadegh Shirinkam et al (2016) was conducted on 395 female and male university students of Sardar Jangal University, Rasht, Iran. Instruments comprised

the Internet Addiction Test and Self-Control Scale (Tangney, 2004), which were administered by all participants. Findings of regression analysis showed that self-control has significant negative relation with internet addiction ($p < .05$) and male students gained higher scores in internet addiction than females. Moreover, no significant difference was found among students of different university majors in internet addiction scores. It appears that self-control abilities can reduce the rate of internet addiction in university students. According to the findings, the multiple regression equation of the study is linear, so that variations of the dependent variable (internet addiction) could be predicted by the predictor variable (self-control) significantly ($p < .007$). In addition, coefficient β is negative which indicates an inverse relationship between self-control and internet addiction; an increase in self-control would decrease internet addiction ($p < .002$). Finally, the multiple correlation coefficient (R) is about 32% and the determinant coefficient (R square) is about 10%; which means that self-control can predict 10% of variations of internet addiction in the sample group ($p < .002$). This study focused on university students only while the current study was on a secondary school study population of students as well as service providers and administrators thus making it better in terms of the population under study and the expected bigger group it will apply to.

Williams and French (2011) estimated the association between specific intervention techniques used in physical activity interventions and change obtained in both self-efficacy and physical activity behaviour. A systematic search yielded 27 physical activity intervention studies for 'healthy' adults that reported self-efficacy and physical activity data. A small, yet significant ($P < 0.01$) effect of the interventions was found on change in self-efficacy and physical activity ($d = 0.16$ and 0.21 , respectively). When a technique was associated with a change in effect sizes for self-efficacy, it also tended to be associated with a change ($r_s = 0.690$, $P < 0.001$) in effect size for physical activity. Moderator analyses found that 'action planning', 'provide instruction' and 'reinforcing effort towards behaviour' was associated with significantly higher levels of both self-efficacy and physical activity. 'Relapse prevention' and 'setting graded tasks' were associated with significantly lower self-efficacy and physical activity levels. This study was on physical activity while the current study was on a psychological area which is more relevant to aspects of behaviour that secondary schools deal with.

Ashford, Edmunds, and French, (2010) study was conducted for papers reporting lifestyle or recreational physical activity interventions. Published intervention studies explicitly targeting self-efficacy to change physical activity behaviour in 'healthy' adults were eligible for inclusion. Meta-analysis was used to quantify the impact of the interventions on physical activity self-efficacy. The search strategy identified 27 unique physical activity intervention studies. Vicarious experience. There was a significant difference between interventions that included this strategy and those that did not ($Z= 4.07$, $p<0.001$) with vicarious experience producing larger effect size estimates ($d=0.32$) compared to those not including vicarious experience as a strategy ($d= 0.11$). This reviewed study relied on documentary sources while the current study made use of primary data collected from the respondents hence more useful in helping with controlling the behaviour of a secondary school student.

Naomi, Bartle and Kate (2017) examined the relationships between the personal and vicarious experience of infant feeding, self-efficacy, the theory of planned behaviour variables of attitudes and subjective norms, and the likelihood of breastfeeding at 6–8 weeks post-natally. A prospective questionnaire study of both first-time mothers ($n=77$) and experienced breast feeders ($n=72$) recruited at an antenatal clinic in South East England. Participants completed a questionnaire at 32 weeks pregnant assessing personal and vicarious experience of infant feeding (breastfeeding, formula-feeding, and maternal grandmother's experience of breastfeeding), perceived control, self-efficacy, intentions, attitudes (to breastfeeding and formula-feeding), and subjective norms. Infant feeding behaviour was recorded at 6–8 weeks post-natally. Multiple linear regression modelled the influence of vicarious experience on attitudes, subjective norm, and self-efficacy (but not perceived control) and modelled the influence of attitude, subjective norm, self-efficacy, and past experience on intentions to breastfeed. Logistic regression modelled the likelihood of breastfeeding at 6–8 weeks. Previous experience (particularly personal experience of breastfeeding) explained a significant amount of variance in attitudes, subjective norms, and self-efficacy. Intentions to breastfeed were predicted by subjective norms and attitudes toward formula-feeding and, inexperienced mothers, self-efficacy. Breastfeeding at 6 weeks was predicted by intentions and vicarious experience of formula-feeding. Vicarious experience, particularly in formula-feeding, has been shown to influence the behaviour of

first-time and experienced mothers both directly and indirectly via attitudes and subjective norms. This reviewed study was on respondents who were infants and the study at hand was on secondary school students.

Qu, Ling, Heynderickx, and Brinkman's (2015) study examined whether this effect can be recreated in a virtual environment, by exposing people to virtual bystanders in a classroom setting. Participants ($n = 26$) first witnessed virtual students answering questions from an English teacher, after which they were also asked to answer questions from the teacher as part of simulated training for spoken English. During the experiment the attitudes of the other virtual students in the classroom were manipulated; they could whisper either positive or negative remarks to each other when a virtual student or participant was talking. The results show that the expressed attitude of virtual bystanders towards the participants affected their self-efficacy and their avoidance behaviour. Furthermore, the experience of witnessing bystanders commenting negatively on the performance of other students raised the participants' heart rate when it was their turn to speak. After witnessing bystanders' positive attitude towards peer students, participants' self-efficacy when answering questions received a boost when bystanders were also positive towards them, and a blow when bystanders reversed their attitude by being negative towards them. Still, inconsistency, instead of consistency, between the bystanders' attitudes towards virtual peers and the participants was not found to result in a larger change in the participants' beliefs. This reviewed study was on the effect in a classroom setup while the current study was on happenings within and out of the classroom but with an out-of-classroom predictor.

Masashi (2016) conducted a questionnaire survey of elementary school children and investigated the effects of the frequency of direct and vicarious experiences of nature on their affective attitudes toward and willingness to conserve biodiversity. A total of 397 children participated in the surveys in Tokyo. Children's affective attitudes and willingness to conserve biodiversity were positively associated with the frequency of both direct and vicarious experiences of nature. Path analysis showed that the effects of direct and vicarious experiences on children's willingness to conserve biodiversity were mediated by their affective attitudes. This study demonstrates that children who frequently experience nature are likely to develop greater emotional affinity to and support for

protecting biodiversity. This study made use of Path Analysis while the current study is going to use Multivariate analysis to analyze its raw data.

Adefolalu (2018), examined the application and relevance of some cognitive-behavioural theories in antiretroviral therapy adherence. After doing a thorough literature review, contemporary theories of health behaviour at the individual and interpersonal levels referred to as cognitive-behavioural theories were explored. This review highlights some aspects of the cognitive perspective of health behaviour theories as a good theoretical framework that could be used for organizing thoughts about adherence and other health behaviours among patients on lifelong treatment such as ART. Key concepts of these theories stipulate that behaviour is mediated by cognition like knowledge and attitude affect the person's action. In addition, cognitive-behavioural theories recognize knowledge alone as being insufficient to produce behavioural change; a person's perception, motivation, skills and social environment are all influential in the process of behavioural change. This reviewed study was on a health area while the current study was on an educational setup.

Otengei, Kasekende, and Ntayi (2017) investigated measures of vicarious experience and examines the relationship between vicarious experience and the career identity of Ugandan hospitality graduates. Questionnaires were administered to indigenous hospitality graduates (n = 248). Phenomenological findings on the concept of vicarious experience were obtained from 10 respondents. The results showed that among indigenous hospitality graduates, vicarious experience comprises two factors: professional functional excellence and social welfare construction experiences. Both factors are significant predictors of career identity among Ugandan hospitality graduates. When hospitality graduates engage in observational learning, then their career identity is enhanced. The findings thus suggest observational learning (vicarious experience) as an alternative route to stimulating a particular form of career motivation (career identity). Therefore, hotel managers who wish to build career identity may foster an atmosphere in which vicarious experiences are appreciated and valued by all. This reviewed study was carried out in Uganda, but the location of the current study was in Kenya.

A study was carried out by Kariuki, Kathuku, Owiti, Auka, and Kasiri (2016) at the Kenya Medical Training College, Nairobi Campus to determine the prevalence rate of vicarious traumatization among students of students here. It made use of a cross-sectional descriptive study with the study variables including vicarious trauma as the dependent variable while the independent variables were age, gender, year of study, religion, duration of clinical experience, type of the training and vicarious trauma among others. A structured socio-demographic questionnaire and Trauma Attachment Belief Scale instruments were used to assess for vicarious trauma. The sample population was 250 participants arrived at using systematic random sampling. There was a correlation between VT and intrusive recollections of the trauma with a p- value of 0.017, and reliving the trauma (flashbacks) with a p-value of 0.035. This reviewed study used SPSS version 20 while the current one made use of SPSS version 22 which is more modern and hence better in terms of the reliability and validity of its results.

Pereira-Delgado (2005) found that young children with disability diagnoses who could not learn new operants from observation learned to do so following an intervention that taught them to monitor the accuracy of their peers when the peers were taught new operants. That is, we taught them to monitor (that is, count the occurrences of correct and incorrect responses) their peers' correct and incorrect responses until they were able to do so involves a three-stage process. Stolfi (2005) found that an intervention we termed a "yoked peer contingency" also resulted in preschoolers acquiring repertoires of learning new operants from observation, as did Davies-Lackey (2004) for elementary age children with developmental disabilities. In this procedure, pairs of children played a game in which joint reinforcement for the dyad accrued when the target child emitted correct responses learned from observing corrections and reinforcement of responses emitted by her peer. Children who could not learn from observation before in pre-intervention probes learned the correct response from observing their peers in post-intervention probes. The foregoing research made use of the observation method only to collect data while the current research made use of both questionnaires and Focus Group Discussions which did make the data come directly from the participants rather than the researcher's observation.

Gautreaux (2005) found that teaching middle school students, who had poor or nonexistent repertoires for acquiring new operants by observation, resulted in significantly improved observational repertoires as well as collateral behaviour changes in listening skills. For all participants, the data showed a substantial increase in their observational learning repertoire after the treatment phase of the study. At the same time, a similar increase in the collateral behaviour of following one-step directions was also found and maintained throughout this investigation.

Greer and Singer (2004) recently reported that translucent plastic discs, which did not act to reinforce children's performance or learning, acquired reinforcement effects after children observed peers receive the discs and the target children were denied access to the discs. The report showed that neutral stimuli, plastic discs about the size of quarters, were conditioned as generalized reinforcers for performance tasks and reinforcers for acquiring new operants as a result of an observation process. Tsiouri and Greer (2003) showed that rapid imitation of observable motor response under conditions in which nonvocal children were under the deprivation of specific and generalized reinforcers led to the emission of first instances of vocal verbal behaviour.

In studies cited in Greer and Keohane (2005), several types of language function (for example, novel tense formation, novel suffix formation, use of a form learned in a single function in a novel and untaught function, emission of untaught spelling responses after learning only one type of response) that have been attributed to non-environmental sources by linguists and cognitive psychologists were induced by providing multiple exemplar histories involving direct contact with the contingencies. In addition, other studies reviewed in this paper showed the acquisition of novel and untaught uses that were induced by observation or indirect contact with the contingencies. Some, or most, incidences of novel and generative language that were previously attributed to innate capacities alone may be a result of both direct and indirect contact with contingencies. This research made use of observations and the current research made use of tools for data collection like questionnaires and interview schedules which may give more data for a more in-depth result.

Singer-Dudek, Greer, and Schmelzkopf's (2008) study sought to further investigate the effects of an observational intervention for two participants on the reinforcing property of pieces of string. Pre-observational intervention data showed that the neutral stimuli (strings) did not function to reinforce two participants' responding to a performance task or learning three new skills that were not previously in their repertoires. The observational intervention involved the participants observing a peer confederate receive strings following responses that the participants could not see while they were deprived of strings, regardless of whether their responses were correct or incorrect. Once the participants met the criterion for terminating the intervention the same performance and learning tasks were again presented. The data showed that the strings now functioned to reinforce both performance and learning tasks. The reviewed research only made use of observation all through. The current research was carried out using some data collection tools as well as mixed methods to get a variety of data for analysis hence a richer content.

Greer and Singer-Dudek (2008) showed that discs and strings did not reinforce correct responses in the performance tasks, but the food items did; nor did the discs and strings reinforce correct responses in learning new repertoires. Then peer observation condition was introduced in which participants engaged in a different performance task in the presence of a peer who also performed the task. A partition blocked the participants from seeing their peers' performance. However, participants could observe peers receiving discs or strings. Participants did not receive discs or strings regardless of their performance. Peer observation continued until the participants either requested discs or strings repeatedly or attempted to take discs or strings from their peers. Following the peer observation condition, the same performance and acquisition tasks in which participants had engaged before observation were repeated. The results showed that the discs and strings now reinforced correct responses for both performance and acquisition for all participants. The reviewed study above was quantitative in nature only but did not include a qualitative aspect in it which could have given in-depth findings but the present study adopted mixed methods which had both quantitative and qualitative methods combined.

In the second type of intervention, 6-year-old children (Pereira Delgado, 2005) and middle-school students who originally did not learn from observation, did so following an

intervention that required them to record the correct and incorrect responses of other students who received instruction. Participants received reinforcement for recording the accurate and inaccurate responses of others. Several steps were involved in this sequence, beginning with the participants recording the observed students' responses following reinforcement or correction, to eventually receiving reinforcement only when they accurately recorded the responses of the observed student prior to reinforcement or correction. Eventually, the participants learned new material solely by observing other students receiving instruction. This was confirmed by the use of non-consequated probes.

Farzad et al (2010) study aimed at assessing the influence of three types of observational training on motor learning of gymnastic handstands. Fifty healthy male subjects from the faculty of Physical Education, University of Shahid Chamran served as the participants in the study. Each group underwent training for 3 weeks, 3 sessions per week. The whole sample practised the handstand skill equally ten times per session. The acquisition test was performed after the last session while the retention test was done 48 hours later. The results of repeated measures analysis showed that all three types of training improved the handstand skill performance for retention. As well as the acquisition phase. Furthermore, the results of ANOVA showed that there was a significant difference between the three groups regarding the acquisition test. However, there was no significant difference among the three groups regarding the retention test. Our findings revealed that observation of the model with verbal teaching improves learning of the handstand skill, while observation without verbal description has no effect on learning the skills. This reviewed research had the objective of influencing its variable while the current research was about the predictive nature of the independent variable.

Bhatt and Pai (2007) in one variable and are dis-agreement with one variable which they survived the effect of observational training on reducing the back balance risks and showed the subjects showed improvement in constant jumping but they had not any significant improvement in velocity of jumping. Shea et al (2000) assessed and observed the efficacy of practical training and showed observation of the video game had no significant effect on the game improvement, but practical training lead to significant improvement in game performance. Weeks (1992) states, that the observation of the model leads to improvement

in cognitive display and assists the learner to control and regulate motor performance; so the cognitive conception is an important factor for the learner to acquire the complexities of motor performance. Sidaway and Hand (1993) investigated the effect frequency of modelling on the acquisition and retention of golf and showed that observation of the model has no significant effect on the acquisition of golf skills.

Ashuri et al (2018) explored the significant role observational learning (OL) plays in determining users' willingness to self-disclose information on Facebook. It demonstrates how the ability to view other users' actions—and the rewards and setbacks they encounter—impinge on their risk assessment and resulting disclosure behaviour. Using an online survey of 742 Facebook users and an experiment conducted with 264 such participants, we demonstrated that users learn from others regarding self-disclosure behaviour and resulting gains/losses. We showed that the observation mechanism contributes to reward envy that leads to a high level of self-disclosure behaviour. By contrast, observation of risks has only a marginal effect on such undertakings. The role of the independent variable here was in focus while the current study explored the possibility of predicting delinquent behaviour modification.

Groenendijk et al (2011) study investigated whether observational learning can also be beneficial when learning to perform creative tasks in visual and verbal arts. A total of 131 Dutch students (10th grade, 15 years old) participated. Two experiments were carried out. Participants were randomly assigned to one of three conditions; two observational learning conditions and a control condition (learning by practising). The observational learning conditions differed in instructional focus. There was a positive effect of observation on creative products, creative processes, and motivation in the visual domain. In the verbal domain, observation seemed to affect the creative process, but not the other variables. The reviewed research was experimental in nature and it lacked a qualitative aspect in it while the current research was of mixed methodology hence the findings are more comprehensive.

Raedts et al. (2007) found that observation is effective for writing argumentative or synthesis texts. In these studies, a multimedia learning environment was used; students watched videos of peer models performing a writing task while thinking aloud. Students

who observed peer models performing a learning-to-write task wrote better texts afterwards than students who practised this learning-to-write task. Zimmerman and Kitsantas (2002) found that college students who observed a coping model who gradually improved their writing technique on a sentence-combining task surpassed students who had observed a mastery model. In Braaksma et al.'s study (2002), the models in the videos performed short tasks about argumentation structures in writing. All students watched the same videos, but Braaksma asked students either to focus on the weaker model or the more competent model of the pair. Evidence in support of the similarity hypothesis was found: when confronted with a new task, weaker writers learned more from focusing on the weaker model of a pair, while better writers learned more from focusing on the more competent model.

However, observation of cognitive models is directed at developing a clear idea of how a task can be performed as demonstrated by Braaksma, Rijlaarsdam, Van den Bergh, and Van Hout-Wolters (2004). In their study in South Africa, the observation of peer models affected students' writing processes; students who had learned to write by observing more often engaged in metacognitive activities during writing, such as planning, analyzing, and goal orientation, than students who had learned by practising writing. Therefore, we expect that observation of someone who is thinking aloud while engaged in creative work affects the observer's future activities. This was a qualitative research and thus lacked quantitative aspects while the current one was both quantitative and qualitative in nature.

Rourke and Sweller (2009) found that students who studied worked examples of a task about recognizing designers' styles perform better than students who practised this task themselves. They conclude that process examples are as effective in ill-defined domains as they are in well-structured domains. Anderson and Yates (1999) examined the effect of modelling on young children's clay works. They found that modelling by the teacher resulted in higher quality clay works than making clay works without modelling. In both studies, observation was examined as a part of an experimental curriculum. These studies reviewed above made use of observation only while the current study made use of questionnaires and interview schedules to collect data.

Rafiee et al. (2019) examined the effect of the observational expert and beginner model on learning basketball free-throw skills in those with different levels of imagination capability. For this purpose, 30 students with high imagination capability and 30 students with low imagination capability were selected among volunteered students and divided into 6 groups. The free throw accuracy and model were measured with 10 throws at the pre and post-test stages. At the exercise stage, the participants also performed 240 throws based on the specific protocol of the group. The experimental groups watched the video of the Expert or beginner model at the beginning of each exercise block while the control group did not watch any kind of video. The results of multivariate covariance analysis showed that the accuracy and the model of throws in different groups were significantly different. Those with high imagination capability benefit more from observational learning and learned better than those with low imagination capability. Also, those with high imagination capability significantly benefit from Expert model observation. The results of this research show that in addition to the characteristics of the observed model, which can have a great impact on observational learning, the observers' characteristics are also very influential in this. This reviewed research examined the impact of its independent variable while the current research looked at the predictive nature of the independent variable on the dependent variable.

Lawrence, Callow, and Roberts (2013) examined the mediating role of imagination in the effectiveness of observational learning, with the formation of four groups of high imagination capability - observational learning, high imagination capability -control, low imagination capability - observational learning, and low imagination capability -control; it was found that the performance of the experimental groups was significantly better, and among them, the high imagination capability group was better. The foregoing research employed experimental methodology while the current research used a mixed-methods approach.

2.4 Rational Attribution and Behaviour Modification

A research study by Simms (2014) examined the causal attributions that teachers of various disciplines and grade levels hold for student problem behaviour. The relationship between teachers' beliefs about the causes of student problem behaviours and teachers' willingness

to implement supportive, research-based behavioural interventions was explored. The participants in this study were 84 public school teachers in Ohio, USA. Teachers completed the Teacher's Attributions for Student's Behaviour measure. Multiple regression analysis was conducted to determine the relative contribution of three causal attributional dimensions on teacher intervention preferences. This study revealed that teachers' causal attributions of student problem behaviour are predictive of teachers' intervention preferences. In particular, special education teachers' causal attributions of student problem behaviour are predictive of special education teachers' preference for use of unsupportive interventions. The potential benefits of teacher attribution training were discussed in light of these results. The reviewed study focused on the teacher's influence while the current study was on the possible predictability of behaviour modification of students.

According to Rubenstein, Freed, Shapero, Fauber, and Alloy (2016), individuals seeking treatment for depression often are struggling with maladaptive cognitions that impact how they view themselves and the world. Research on cognitive attributions that underlie depressed mood focuses on the phenomenon of negative cognitive style, in which depressed people tend to view undesirable occurrences in life as having internal, stable, and global causes. Based on research, clinicians have developed various techniques that seek to modify depressive attributions in order to alleviate symptoms of depression. In this article, the authors review the literature on attributions in depression, present clinically relevant interventions based on empirical support, provide case examples, and summarize future directions and recommendations for researchers and practitioners. This reviewed research was on depression while the current one was on social cognitive factors on behaviour modification.

Wu, Baker, Tenenbaum and Schulz, (2017) investigated people's ability to infer others' mental states from their emotional reactions, manipulating whether agents wanted, expected, and caused an outcome. Participants recovered agents' desires throughout. When the agent observed but did not cause the outcome, participants' ability to recover the agent's beliefs depended on the evidence they got. When the agent caused the event, participants' judgments also depended on the probability of the action (Experiments 3 and 4); when

actions were improbable given their mental states, people failed to recover the agent's beliefs even when they saw her react to both the anticipated and actual outcomes. A Bayesian model captured human performance throughout ($r_s \geq .95$), consistent with the proposal that people rationally integrate information about others' actions and emotional reactions to infer their unobservable mental states. This reviewed study was carried out through observation of the respondents' behaviours while the current one made use of questionnaires and discussions.

Rahimi, Hall, and Pychyl (2016) examined the relationship between procrastination, delay, blameworthiness, and moral responsibility. Undergraduate students ($N = 240$) were provided two scenarios in which the reason for inaction (procrastination, delay), the target (self, other), and the outcome (positive, negative) were manipulated, and students were asked to rate the moral responsibility and blameworthiness of the agent. Results indicated that individuals who procrastinated were seen as more morally responsible and blameworthy than those who experienced delay. More specifically, after a negative outcome, procrastination was associated with more moral responsibility, whereas delay was associated with less moral responsibility. After a positive outcome, individuals perceived procrastination as deserving less moral responsibility, and delays as associated with more moral responsibility. Finally, a three-way interaction showed that participants rated procrastination that failed as deserving of responsibility when engaged in by others as opposed to oneself. The respondents in the foregoing study were undergraduates while the current study was on secondary school students.

In Brown and Trafimow, (2017), volitional theory was applied to Reeder and Brewer's schematic theory and Trafimow's affect theory to extend this area of research with five new predictions involving affect and ability attributions, comparing morality and ability attributions, gender differences, and reaction times for affect and attribution ratings. The design included a 2 (Trait Dimension Type: HR, PR) \times 2 (Behaviour Type: morality, ability) \times 2 (Valence: positive, negative) \times 2 (Replication: original, replication) \times 2 (Sex: female or male actor) \times 2 (Gender: female or male participant) \times 2 (Order: attribution portion first, affect portion first) mixed design. All factors were within participants except the order and participant gender. Participants were presented with 32 different scenarios in

which an actor engaged in a concrete behaviour after which they made attributions and rated their affect in response to the behaviour. Reaction times were measured during attribution and affect ratings. In general, the findings from the experiment supported the new predictions. Affect was related to attributions for both morality and ability related behaviours. Morality related behaviours received more extreme attribution and affect ratings than ability related behaviours. Female actors received stronger attribution and affect ratings for diagnostic morality behaviours compared to male actors. Male and female actors received similar attribution and affect ratings for diagnostic ability behaviours. Diagnostic behaviours were associated with lower reaction times than non-diagnostic behaviours. This reviewed study had its basis mixed design as the current one but had the experimental tool for data manipulation while the current study is on as the behaviour is after the student respondents had undergone guidance and counselling.

Essack, Desta, Abotsi and Agoba (2017) noted that the high burden of communicable diseases in African countries engenders extensive anti-microbial use and subsequent resistance with substantial health, financial and societal implications. A desktop analysis to ascertain whether countries in the WHO African region have implemented the WHO Policy Package to combat anti-microbial resistance (AMR) revealed that just two countries (4.3%) have national AMR plans in place, 14% (7) have overarching national infection prevention and control (IPC) policies, 93.6% (43) have national medicines policies and treatment guidelines intimating rational use. None currently have representative national surveillance systems nor do any incentivize research and development into new medicines and diagnostics. A regional situational analysis to identify scalable good practices within African, resource-constrained country contexts under the auspices of WHO-AFRO is a necessary initial step towards the development of national and regional action plans in concert with incremental progress towards achieving the objectives of the policy package and global action plan. The work reviewed was a purely medical study while the current study was educational in nature and therefore more important to one who is in an educational institution.

Matemba, Awinja and Otieno (2014) say the problem of poor performance of students in public secondary schools in the national examination continues unabated despite numerous

efforts and resources put into education development. A correlation research design was adopted for the study. Using stratified sampling, six schools consisting of one boy's school, one girl's school, three public co-educational schools and one private co-educational school were sampled. Proportionate and simple random sampling was used to select a total of 200 students comprising 113 boys and 87 girls. Questionnaires, observation checklists and Focus Group Discussions were used to collect data. Quantitative data collected in the field was analyzed using descriptive and inferential statistics, while qualitative data from Focus Group Discussion was analyzed qualitatively. There was no significant relationship between problem-solving approaches and academic performance while gender did not affect problem-solving. This reviewed study was purely academic while the current study was behavioural in the social cognitive way.

Adinoff et al (2016) study assessed whether two measures of decision-making predicted relapse and subsequent use in stimulant-dependent patients. 160 methamphetamine- or cocaine-dependent patients participating in a multi-site clinical trial evaluating a modified 12-step facilitation intervention for stimulant-dependent patients (STAGE-12) were assessed. Decision-making processes of risk and delay [Iowa Gambling Task (IGT)] and response reversal [Wisconsin Card Sorting Task (WCST)] were obtained shortly after treatment admission followed by an assessment of stimulant use over the next six months. The relationships of the IGT and WCST (Perseverative Errors) with relapse (yes/no) and days of stimulant use during the 6 months following post-randomization were evaluated. A decrease in the salience attribution of nondrug reinforcers may explain the positive relationship between IGT performance and post-relapse use. This reviewed research involved an ongoing data collection hence it could suffer attrition of participants while the current one had a one-off collection of data.

Korn et al (2016) study aimed at establishing the relevance of attributions for decision-making by showing an attribution-related positivity bias in a decision-making task. A novel task was developed which allowed us to test how participants changed their evaluations in response to positive and negative feedback about performance. Participants were first asked to evaluate the actors' credibility in expressing a particular emotion. After this initial rating, participants performed an emotion recognition task and did - or did not - receive

feedback on their veridical performance. Finally, participants re-rated the actors' credibility, which provided a measure of how they changed their evaluations after feedback. Attribution theory predicts that participants change their evaluations of the actors' credibility toward the positive after receiving positive performance feedback and toward the negative after negative performance feedback. Our results were in line with this prediction. A control condition without feedback showed that correct or incorrect performance alone could not explain the observed positivity bias. Furthermore, participants' behaviour in our task was linked to the most widely used measure of attribution style. In sum, our findings suggest that positive and negative performance feedback influences the evaluation of task-related stimuli, as predicted by attribution theory. This reviewed research was quantitative in nature and it lacked qualitative aspects, but the present study adopted both quantitative and qualitative methods hence more comprehensive findings.

According to Weiner's (2006) attribution theory, individuals' perceptions of personal controllability over an outcome should predict judgments of responsibility that lead to specific emotions and behaviours. More specifically, if an event that happens to oneself is seen as personally controllable, one would typically believe they were responsible for the event, experience hope and guilt, and be more likely to persist in the future. In contrast, if one views an event experienced by another individual as controllable by that individual, one would likely perceive that individual as responsible, feel anger toward the person, and behave negatively toward them. In Weiner's (2006) attribution theory, one's cognitions surrounding the intentionality of an event are presented as conceptually distinct from the emotions that follow.

According to Malle (2011), the theory is grounded in the framework of folk concepts children and adults use to make sense of human behaviour, a framework that was already anticipated by Fritz Heider. To introduce the theory, I first map out this folk-conceptual framework, provide evidence for its core elements, and develop the cognitive and social features of behaviour explanations, with a focus on the unique properties of intentional action explanation. I then apply the theory to a core attributional phenomenon—actor-observer asymmetries in explanation and chart two additional applications. This reviewed

study made use of documentary literature hence it was not empirical in nature while the current study had its data collected with the use of questionnaires and interview schedules.

Nikbin and Hyun (2017) examined the relationship between airline travellers' causal attribution, pre-recovery emotions, and negative behavioural intentions after a service failure and proposes a model for analyzing the direct effects of airline travellers' causal attribution of stability and controllability on negative behavioural intentions as well as its indirect effects through pre-recovery emotions. Data were gathered through a survey of airline travellers who experienced a failure in the past six months. The results indicate that both dimensions of causal attribution influenced pre-recovery emotions and negative behavioural intentions and that pre-recovery emotions were significantly related to negative behavioural intentions. In addition, the results verify the mediating effect of pre-recovery emotions on the relationship between causal attribution and behavioural intentions. The aforementioned study had more than one independent variable to be examined as the current one only had one independent variable to be examined making the focus not to be on a variety of variables hence more in-depth results.

Gilbert and Warburton (2013) investigated the experiences and associated cognitions in normal cessation by asking quitting smokers to rate their experiences on a questionnaire and to indicate the most likely reason for each experience. Statistical analyses confirmed that attributions to abstinence were significantly higher for increased negative experiences, and there were significantly more reattributions than would be found by chance for items associated with smoking abstinence. Significantly more attributions to abstinence were made by clinic attendees and significantly more attributions of negative experiences to abstinence were made by unaided quitters using self-help materials. These results can be interpreted in the context of attribution theory; quitters may use the cognitions available to them to attribute their negative experiences to quitting. This reviewed research only had questionnaires for collecting data and it lacked qualitative aspects while the current study has both questionnaires and Focus Group Discussions to provide data for the study.

2.5 Inhibition and Behaviour Modification

Tobin and Sugai (2005) carried out a research titled Preventing Problem Behaviours: Primary, Secondary, and Tertiary Level Prevention Interventions for Young Children. The purpose of this report was to compare changes in social skills, problem behaviours, and academic competence for kindergarten or first-grade students identified as being at risk for serious behaviour problems who received primary, secondary, or tertiary level preventive interventions. Of the 93 participants in this study, there were more males than females; more Caucasian, and a big group were characterized as having externalizing behaviour problems. A repeated-measures analysis of variance indicated statistically significant differences ($p < .01$) between the groups based on the type of intervention received in the Self-Control subscale of the *Social Skills Rating System* (Gresham & Elliott, 1990). School-wide Positive Behaviour Support is an effective primary prevention intervention, even for young children with serious internalizing or externalizing behaviour problems.

This research was based on preventive interventions for young children, compared social skills, problem behaviours, and academic competence for kindergarten or first-grade students identified as being at risk for serious behaviour problems and received primary, secondary or tertiary interventions. The current study focused on secondary school students' social cognitive influence on behaviour modification with the view to helping with their behaviour change.

Todd and Mullan, (2013) study investigated whether manipulating two aspects of self-regulation: self-monitoring and response inhibition could improve sleep behaviours. University students (N = 190) were randomly allocated to complete (1) a self-monitoring sleep diary and response inhibition training, (2) a sleep diary only, or (3) a control questionnaire daily for a period of 7 days. Outcome measures were three sleep hygiene behaviours previously found to be particularly important in this population: avoiding going to bed hungry and thirsty, avoiding anxiety and stress-provoking activity before bed, and making the bedroom and sleep environment restful. Those who completed diary-based self-monitoring successfully avoided anxiety and stress-provoking activity before bed more frequently than control participants, corresponding to a medium effect size, and further development may provide a simple intervention to improve aspects of sleep and other

health behaviours. This reviewed study was on health behaviour while the current one was on the use of social cognitive skills in modifying behaviour.

Vanessa, Barbara, and Martin's (2016) meta-analysis of 19 studies of inhibitory control training and health behaviours was conducted to determine the effect of inhibitory control training on reducing harmful behaviours. Theoretically driven moderation analyses were also conducted to determine whether extraneous variables account for heterogeneity in the effect; to facilitate the development of effective intervention strategies. Moderators included type of training task, behaviour targeted, measurement of behaviour and training duration. Results: A small but homogeneous effect of training on behaviour was found, $d+ = 0.378$, $CI_{95} = [0.258, 0.498]$. Moderation analyses revealed that the training paradigm adopted, and measurement type influenced the size of the effect such that larger effects were found for studies that employed go/no-go (GNG) training paradigms rather than stop-signal task paradigms, and objective outcome measures that were administered immediately yielded the largest and most consistent effects on behaviour. Conclusions: Results suggest that GNG inhibitory control training paradigms can influence health behaviour, but perhaps only in the short term. This study was on inhibitory control training effects while the current study is on the effects of social cognitive skills on behaviour modification for secondary school students without training but guidance and counselling intervention which makes it more relevant to the school administration in terms of instilling discipline to these students.

Bartsch, Kothe, Allom, Mullanand and Houben (2016) investigated if non-specific response inhibition training could improve response inhibition, and reduce alcohol consumption. One hundred and sixty-eight undergraduates were randomly assigned to either an inhibition or active control condition and completed a stop-signal task once a day for four consecutive days. The inhibition condition comprised a stop-signal task with a high target density (50% stop signals), while the active control comprised a stop-signal task with a lower target density (25% stop signals) and the instruction to ignore the signal. Before and after the intervention, participants completed measures of response inhibition and alcohol consumption. Alcohol consumption was measured again at one-month post-training. All parts of the study were completed online. Contrary to the hypotheses,

participants in the inhibition condition did not have lower levels of alcohol consumption, nor improved response inhibition after the intervention, compared to participants in the active control condition. It is suggested that response inhibition training needs to be specific to the target behaviour in order to be effective; however, that training did not. This reviewed study was on experimental method only and it lacked a qualitative aspect in it while the current one was mixed methods in nature.

Henderson, Pine and Fox (2015) focused on the relation of BI to two types of information processing: automatic and controlled (attention shifting and inhibitory control). The study proposed three hypothetical models linking these processes to variability in developmental outcomes for BI children. It is argued that early BI is associated with an early bias to quickly and preferentially process information associated with motivationally salient cues. When this bias is strong and stable across development, the risk for SAD is increased. Later in development, children with a history of BI tend to display normative levels of performance on controlled attention tasks, but they demonstrate exaggerated neural responses to do so, which may further potentiate the risk for anxiety-related problems. The foregoing study had respondents observed as a way of collecting data while the current one had two methods of collecting data which were questionnaires and interview schedules.

Qian, Xinyi, Ziegler and Jiannong (2015) determined the training and transfer effects on response inhibition in young children. Children in the training group played “Fruit Ninja” on a tablet computer for 15 min/day, 4 days/week, for 3 weeks. Children in the active control group played a colouring game on a tablet computer for 10 min/day, 1–2 days/week, for 3 weeks. Several cognitive tasks were used to evaluate the transfer effects, and electroencephalography (EEG) was performed during a go/no-go task. Progress on the trained game was significant, while performance on a reasoning task revealed a trend-level improvement from pre- to post-test. EEG indicated that the N2 effect of the go/no-go task was enhanced after training for girls. The reviewed study made use of an experimental method and it lacked in-depth qualitative findings while the current study used both quantitative and qualitative methods.

Jones, Di Lemma, Robinson, Christiansen, Nolan, Tudur-Smith and Field, (2016) investigated a meta-analytic investigation of laboratory studies of ICT for appetitive behaviour change in which we investigate candidate mechanisms of action, individual differences that may moderate its effectiveness, and compare it to other psychological interventions. It conducted a random-effects generic inverse variance meta-analysis on data from 14 articles (18 effect sizes in total). Participants who received ICT chose or consumed significantly less food or alcohol compared to the control groups. Effect sizes were larger for motor compared to oculomotor (Antisaccade) ICT. The effects of ICT on behaviour were comparable to those produced by other psychological interventions, and the effects of ICT on food intake were greater in participants who were attempting to restrict their food intake. The magnitude of the effect of ICT on behaviour was predicted by the proportion of successful inhibitions but was unrelated to the absolute number of trials in which appetitive cues were paired with the requirement to inhibit, or the contingency between appetitive cues and the requirement to inhibit. The effect of ICT on cue devaluation (primarily assessed with implicit association tests) was not statistically significant. Our analysis confirms the efficacy of ICT for short-term behaviour change in the laboratory, and we have demonstrated that its effectiveness may depend on pairings between appetitive cues and successful inhibition. This reviewed study was on the effects of a computer while the current study focused on the effects of behavioural characteristics on modification of behaviour.

Walker, Henderson, Degnan, Penela and Fox, (2014) study examined the associations between the early childhood temperament of behavioural inhibition and children's displays of social problem-solving (SPS) behaviour during social exclusion. During toddlerhood (ages 2-3), maternal reports and behavioural observations of behavioural inhibition were collected. At age 7, children's SPS behaviours were observed during a laboratory social exclusion task based on the commonly used Cyberball game. Results showed that behavioural inhibition was positively associated with displayed social withdrawal and negatively associated with assertive behaviour during the observed social exclusion task at 7 years of age. These results add to our understanding of inhibited children's SPS behaviours during the social exclusion and provide evidence for the associations between toddler temperament and children's social behaviour during middle childhood. The

respondents in this reviewed study were children while the current study were respondents in secondary school making the results to be more relevant to the secondary school students for which the results are expected to help with making better.

Wardell, Read and Colder, (2013) study provided the first examination of BIS and BAS as moderators of longitudinal within-person associations between mood and alcohol-related consequences in college student drinkers. Participants (N=637) at two public U.S. universities completed up to 14 online surveys over the first three years of college assessing past-month general positive and negative mood, as well as past-month alcohol use and consequences. BIS and BAS were assessed at baseline. Using multilevel regression, we found that BIS and BAS moderated the within-person associations between negative mood and alcohol consequences. For students high on BIS only, high on BAS only or high on both BIS and BAS, within-person increases in negative mood were associated with greater alcohol consequences in the first year of college. However, these negative mood-alcohol consequence associations diminished over time for students high on BIS and low on BAS, but remained strong for students high on both BIS and BAS. Within-person associations between positive mood and alcohol consequences changed from slightly positive to slightly negative over time but were not moderated by BIS or BAS.

Jones and Field (2013) demonstrated that participants who completed a Stop Signal task in which alcohol images were paired with inhibition subsequently consumed less alcohol than a group of participants in whom inhibition was paired with neutral cues. Similarly, participants who learnt to associate food images with inhibition on a Go/No-Go task subsequently consumed less of those foods when given access to them. The study here was looking at reinforcement of the independent variable to bring out a behaviour while the current study was taking in the independent variable the way it was with the students' reaction.

A published meta-analysis demonstrated small but significant effects of Inhibitory control training on both food ($d = 0.37$) and alcohol consumption ($d = 0.43$) in the laboratory (Allom, Mullan, & Hagger, 2015). This analysis demonstrated larger effects for Go/No-Go rather than Stop Signal training tasks, with no difference in effect sizes between objective and subjective outcomes. Allom and colleagues also examined the relationship between

the total number of trials during Inhibitory control training and subsequent behavioural effects of Inhibitory control training and found that this relationship was not statistically significant. This reviewed study was on the significance of the effects of inhibition while the current one was on its predictability on delinquent behaviour modification.

Jones, et al (2016) conducted random-effects generic inverse variance meta-analysis on data from 14 articles (18 effect sizes in total). Participants who received ICT chose or consumed significantly less food or alcohol compared to control groups (SMD = 0.36, 95% CIs [0.24, 0.47]; $Z = 6.18$, $p < .001$; $I^2 = 71\%$). Effect sizes were larger for motor (Go/No-Go and Stop Signal) compared to oculomotor (Antisaccade) ICT. The effects of ICT on behaviour were comparable to those produced by other psychological interventions, and the effects of ICT on food intake were greater in participants who were attempting to restrict their food intake. The magnitude of the effect of ICT on behaviour was predicted by the proportion of successful inhibitions but was unrelated to the absolute number of trials in which appetitive cues were paired with the requirement to inhibit, or the contingency between appetitive cues and the requirement to inhibit. The effect of ICT on cue devaluation (primarily assessed with implicit association tests) was not statistically significant.

Veling et al., (2014) study has assessed change in ecologically valid health outcomes as a result of inhibitory control training. This study demonstrated that four sessions of GNG training resulted in decreased BMI. However, underlying mechanisms responsible for change in health outcomes were not directly tested. As described above, the two training paradigms differ in that in the GNG, the go response is consistently inhibited for all members of a certain category, while in the SST the 'go' response does not need to be inhibited for all members of a certain category, only for a certain proportion.

Di Lemma and Field (2017) compared the effects of both types of training on alcohol consumption and investigated if they led to theoretically predicted changes in alcohol avoidance (CAT) or alcohol inhibition (ICT) associations and changes in the evaluation of alcohol cues. Heavy drinking young adults ($N = 120$) were randomly assigned to one of four groups: (1) CAT (repeatedly pushing alcohol cues away with a joystick), (2) sham (control) CAT; (3) ICT (repeatedly inhibiting behaviour in response to alcohol cues); or

(4) sham (control) ICT. Changes in reaction times and automatic evaluations of alcohol cues were assessed before and after training using assessment versions of tasks used in training and the implicit association test (IAT), respectively. Finally, participants completed a bogus taste test as a measure of ad libitum alcohol consumption. Compared to sham conditions, CAT and ICT both led to reduced alcohol consumption although there was no difference between the two. Neither intervention affected performance on the IAT and changes in reaction time did not suggest the formation of robust alcohol avoidance (CAT) or alcohol inhibition (ICT) associations after training. CAT and ICT yielded equivalent reductions in alcohol consumption in the laboratory. This reviewed research used experimental design and it lacked in-depth qualitative findings while the current study made use of a mixed-methods approach.

Todd and Mullan (2013) investigated whether manipulating two aspects of self-regulation: self-monitoring and response inhibition could improve sleep behaviours. University students (N = 190) were randomly allocated to complete (1) a self-monitoring sleep diary and response inhibition training, (2) a sleep diary only, or (3) a control questionnaire daily for a period of 7 days. Outcome measures were three sleep hygiene behaviours previously found to be particularly important in this population: avoiding going to bed hungry and thirsty, avoiding anxiety and stress-provoking activity before bed, and making the bedroom and sleep environment restful. Those who completed diary-based self-monitoring successfully avoided anxiety and stress-provoking activity before bed more frequently than control participants, corresponding to a medium effect size, and further development may provide a simple intervention to improve aspects of sleep and other health behaviours. There was no incremental effect of response inhibition training. The foregoing research manipulated the variables while the current research did examine the variables as they were.

Bowley et al (2013) study aimed to replicate findings that alcohol consumption and positive implicit beer-related cognitions can be reduced using inhibitory control (IC) training, with the addition of an active training control. Frontal EEG asymmetry, an objective psychophysiological index of approach motivation, was used as a dependent measure to examine training outcomes. Participants were randomly assigned to one of two IC training

conditions (Beer NoGo or Beer Go) or a Brief Alcohol Intervention (BAI) (i.e. the active training control). The IC training tasks consistently paired a stimulus that required a response with images of water (Beer NoGo) or images of beer (Beer Go). Alcohol consumption and implicit beer-related cognitions were measured at pre-training, post-training and at one-week follow-up. Frontal EEG asymmetry was recorded during a passive image viewing task that presented neutral, healthy, and beer stimuli - at pre-training, post-training and follow-up. Participants in the Beer NoGo and BAI conditions consumed less beer in a taste test immediately after training than Beer Go participants, suggesting that IC training may be as effective as the already established BAI. The taste test findings were in line with the frontal EEG asymmetry data, which indicated that approach motivation for beer stimuli was altered in the expected directions. However, the positive correlation between post-training frontal EEG asymmetry data and taste test consumption was not significant. While there were no significant changes in implicit beer-related cognitions following training, a trending positive relationship between implicit beer-related cognitions at post-training and taste test consumption was reported. The reviewed research was experimentally carried out and it lacked a qualitative aspect in it while the current research was carried out through a mixed-methods approach.

Guerrieri, Nederkoorn, Schrooten, Martijn, and Jansen (2009) demonstrated decreased food intake following a manipulation that primed inhibitory control compared to a manipulation that primed impulsive behaviour. However, in this study, there was no control condition, which makes it impossible to determine whether both the impulsivity and the inhibition manipulation effectively influenced food intake relative to baseline. Moreover, Guerrieri et al. (2009) used priming manipulation to induce a temporary state of impulsivity or inhibition. While such a priming paradigm is interesting to show causal relationships, it is highly unlikely that priming inhibition will induce long-term effects on both inhibitory abilities and eating behaviour. The research manipulated variables while the current research did not manipulate any variable in the course of research.

Houben (2011) examined whether increasing or decreasing inhibitory control influences food intake in opposite directions. In this study, baseline inhibitory control ability was measured with the Stop Signal Task. Next, participants performed a modified Stop Signal

Task with three within-subjects conditions: One type of high-calorie food was always paired with a stop signal (inhibition manipulation), while another type of high-calorie food was never presented with a stop signal. In the control condition, high-calorie food was presented with a stop signal in half of the trials. Following the manipulation, the intake of the three food products that were used in the manipulation was measured during a taste test. Participants with low inhibitory control abilities consumed more of the control food compared to participants with high inhibitory control abilities. However, the inhibition manipulation decreased food consumption in participants with low levels of inhibitory control to the same level of food intake as that of participants with high levels of inhibitory control. Conversely, the impulsivity manipulation increased food intake in participants with high levels of inhibitory control to the level of consumption of participants with low levels of inhibitory control. This study had a manipulation of one of the variables while the current study did not manipulate any variable in the research.

2.6 Summary of Literature Review and Gaps

From the research reviewed in this thesis, there are a variety of gaps that the current research was supposed to fill in. On the literature reviewed for self-control and behaviour modification, Borushok (2014) carried out research in America on the relationship between trait self-control, weight loss and various health behaviours commonly associated with successful weight loss. This is a related research in the field of health while the current research is educational. Laryea, Abdul-Jaleel and Dawson-Brew (2014) carried out research in Ghana that investigated the influence of students' self-concept on their academic performance. This research in Ghana used scores and questionnaires for raw data hence being purely quantitative which does not have as much as the current research which made use of both quantitative and qualitative methods of data collection hence deeper insights into the area of study leading to best results.

On vicarious experience and behaviour modification, an American study investigated the impact of vicarious experiences and field experience classroom characteristics on pre-service science teaching efficacy (Wagler, 2011). This Wagler (2011) study made use of pre-and post-test instruments which gave limited data for analyses hence less information while the current study used a variety of data collection methods which gave it a broader

range of data hence richer results than the foregoing research. Masashi (2016) in a study investigating the effects of the frequency of direct and vicarious experiences of nature on their affective attitudes toward and willingness to conserve biodiversity in Tokyo had children as participants. This study, therefore, gave the results on the behaviour of children which cannot be used to predict adolescents' behaviour. The current study was therefore necessary to give the predictability of secondary school students who are within the age bracket of adolescents.

A research in America by Simms (2014) examined the causal attributions that teachers of various disciplines and grade levels hold for student problem behaviour. The study had the causal attributions held by teachers on student problem behaviour which was giving the side of teachers rather than students. The current study, apart from teacher counsellors' and deputy principals' input, also had a lot of data from the student respondents. This made it richer than the Simms (2014) study. There was also a study carried out in Brazil on the relationship between procrastination, delay, blameworthiness and moral responsibility (Rahimi, Hall, & Pychyl, 2016). These three researchers had undergraduate respondents whose developmental stage cannot give the same response to behavioural issues as secondary school students. The current study made use of secondary school students who gave what has to do with their age-appropriate behaviour hence more relevant for adolescents' behaviour expectations.

The inhibition and behaviour modification literature review had a study in America which was titled preventing problem behaviours: primary, secondary and tertiary level prevention interventions for young children (Todd & Mullan). This study was on children making the results be for a lower age group. This makes it necessary to have a study that gives results that are relevant to secondary school students. The current study was meant to fill in the gap of this important developmental stage difference. Guerrieri, Nederkoorn, Schrooten, Martijn, and Jansen (2009) carried out research in America that demonstrated decreased intake following a manipulation that primed inhibitory control compared to a manipulation that primed impulsive behaviour. This American study had the two non-related independent variables which were manipulated while the current study has social cognitive skills which were not manipulated. The manipulation gave direction to the results while

the current study is open and can take any direction which makes it richer in terms of the appropriate information.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This Chapter has the research design, study location, target and sample population, sampling size and sampling procedure, instrumentation, instrument validity and reliability, data collection procedures, data analysis and ethical considerations.

3.2 Research Design

The research design refers to the overall strategy that you choose to integrate the different components of the study coherently and logically, thereby, ensuring you will effectively address the research problem; it constitutes the blueprint for the collection, measurement, and analysis of data. Kothari (2013) indicates that this is the arrangement of conditions for the collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. McMillan and Schumacher (2006) indicate that the research design describes how the study is conducted; it indicates the general plan, namely how the research is set up, what happens to the subjects, and which methods of data collection are used. They continue by stating that the purpose of a research design is to specify a plan for generating empirical evidence that will be used to answer the research questions (McMillan & Schumacher, 2006).

Kothari (2013) describes research methods as all those methods or techniques that are used for the conduction of research. Research methodology, on the other hand, is a way to systematically solve the research problem. This study made use of the mixed-method design. This was because it wanted to look at both quantitative and qualitative aspects of the study. Walliman (2011) says when the subject combines more than one aspect of human behaviour then it can be advisable to combine two types of research methods. The study aimed to measure and determine the relationships between the variables. The study used a mixed-method design which utilized both qualitative and quantitative paradigms. Tashakkori and Creswell (2007) and other proponents of mixed methods argue that the design encompasses more than simply combining qualitative and quantitative methods but, rather, reflects a new 'third way' epistemological paradigm that occupies the conceptual space between positivism and interpretivism. Bless and Higson-Smith (in De Vos et al.

2005) explain that correlational research is often conducted to detect the existence of a relationship between two variables, and allows for an estimation of the type and strength of the non-causal relationship.

Thus, the best way to determine relationships in research is using statistical correlations. It is possible to obtain the data needed for statistical correlations by means of a quantitative approach to research. This method enabled the researcher to make follow-ups on the student's behaviour and hence compare this with the data from their filled in questionnaires and the interview schedules. Quantitative and qualitative approaches was used in the study. The former enhances the understanding of the meaning of numbers, while the latter later gives precise and testable expression to qualitative ideas. Creswell (2014) notes that quantitative research is an enquiry into a social or human problem based on testing a theory composed of variables, measured with numbers, and analyzed with statistical procedures, to determine whether the practical generalizations of the theory hold.

Quantitative research designs maximize objectivity by using numbers, statistics, structure, and control (McMillan & Schumacher, 2006). These designs make use of methods that are distinct from those used in qualitative designs. Qualitative designs emphasize gathering data on naturally occurring phenomena, and most of this data is in the form of words rather than numbers (McMillan & Schumacher, 2006). In this study, a non-experimental research design was used. This implies that there was no direct manipulation of the variables by the researcher.

Within the mixed methods approach, Concurrent Triangulation design was used. Triangulation refers to a combination of methodologies in a study of the same phenomenon (Rothbauer, 2008). In this design, therefore, both quantitative and qualitative data were collected and analyzed at the same time as the research study. The researcher thus gave equal priority to both components (Murdin, 2009). This involves qualitative and quantitative data collection phases where priority should be equal but can be given to either approach as shown in Figure 2.

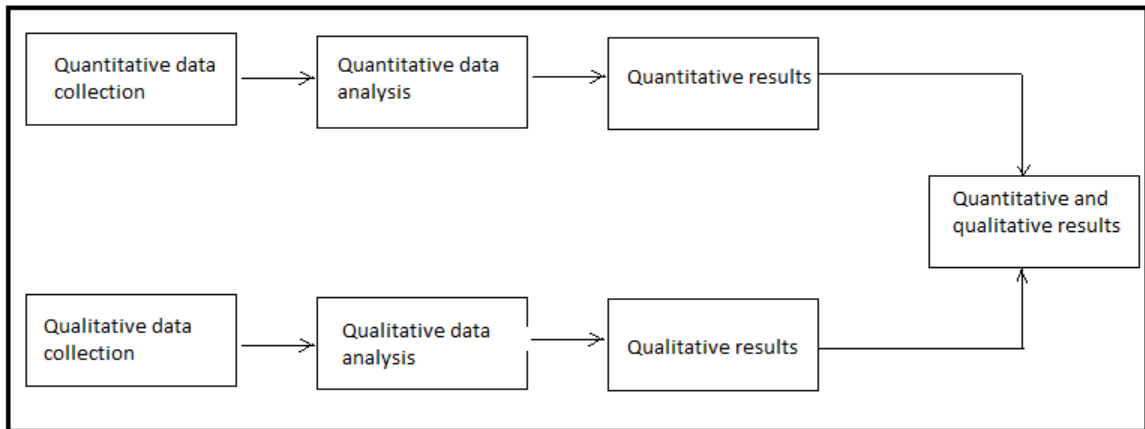


Figure 2: *Concurrent Triangulation Design* (Source: Creswell, 2014 p. 63)

3.3 Study Location

The research was carried out in Rongo Sub-County of Migori County in Kenya. It is one of the seven administrative regions within this County. It has Awendo Sub-County bordering it to the South, Homa Bay County to the North, Kisii in the Eastern part and Narok County to the West. These regions double up as the Educational Divisions which oversee the teacher management as a devolved function of the Ministry of Education with the overall manager being the Sub-County Education Director.

Rongo Sub-County was chosen for the study because of the high number of students that are undergoing guidance and counselling programmes in their various secondary schools as compared to the case in other Sub-Counties within Migori County. This Sub-County comparison was given in Table 2.

Moreover, the sub-county has varied categories of schools, such as national schools, and other categories of public secondary schools as well. It has both town, sub-rural, and rural characteristics in terms of the students. It is also an area with a mixed variety of economic activities and therefore varied outlooks towards life by its populace.

3.4 Target Population

The target population is the population to which the researcher, ideally, would like to generalize results (Amia, 2005). The target population was made up of 3,740 Rongo Sub-County students, their school teacher counsellors twenty-six (26) and twenty-six (26)

Deputy principals from the twenty-six (26) secondary schools, while the sampling unit comprises the students who have been counselled because of delinquency behaviour in school. The design enabled the researcher to measure changes or differences that have already taken place and hence cannot be manipulated.

Table 3: Target population

School Category	Number of schools	Number of students in guidance and counselling programme
National	1	180
Extra County	4	720
County	4	540
Sub-County	17	2,300
Total	26	3,740

Source: Rongo Sub-County Education Office (2018)

3.5 Sampling Technique and Sample Size

Table 3, there can be seen the number of students attending guidance and counselling within the different public secondary schools in Rongo Sub-County. This is what forms the target population from which a sample was picked cutting across the public schools in Rongo Sub-County. The Sub-County Moore and McCabe (2006) define a sample as the group from which information is obtained. Both qualitative and quantitative research paradigms use samples to make knowledge claims about large population. They are used to generalize the results in quantitative research while it is used in qualitative studies to address questions such as “What is the range of views being expressed by a group of people?” (Laurie, & Jensen, 2016). These students and, therefore, all respondents for the study were both randomly and purposely or judgmentally sampled. The random sampling was done at two levels which were for the schools and the students who had undergone counselling. Random sampling is carried out to pick out a sample from a target population.

There was knowledge of a national school which had to be included in the study. This may have not been possible if the sampling was purely random. Babbie (2016) says that sometimes it is appropriate to select a sample on the basis of the researcher's knowledge of a population, its elements and the purpose of the study. The purposive sampling technique used in the study was on students who had gone through counselling services, the one national high school in this study area and the Deputy Principals and Teacher Counsellors in these sampled schools. This made the study to narrow down to the relevant target population while the random sampling was on the big number of students who had been counselled and could therefore allow for the generalization of their responses.

The study employed simple random or probability sampling for the schools from which to get the respondents' sample. Kothari (2013) notes that every item of the universe in this sampling design has an equal chance of being picked up from the whole group or the other is selected: the same possibility of being selected. This design was employed because it was easier to carry out and the sample was homogenous. Sampling, amongst other reasons, saves time and money and may enable more accurate measurements for a sample study (Kothari, 2013). Trochim (2006) notes that this is simple to accomplish and is easy to explain to others. Because simple random sampling is a fair way to select a sample, it is reasonable to generalize the results from the sample back to the population. Simple random sampling is not the most statistically efficient method of sampling and you may, just because of the luck of the draw, not get good representation of subgroups in a population (Trochim, 2006). This weakness will not apply in the current study as this area is homogeneous. The sample population for the schools will be 26.9% of the secondary schools here, hence 7 schools. Gay (2007) notes that in a study, the sample size can range from 10% to 30% allowing the results to be representative of the target population.

Table 4: *Sampling technique and sample size of respondents*

Target Group	Population	Sampling Technique	Sample Size	%
Schools	27	Purposive and Random	7	26.9
Teacher Counsellors	27	Purposive	7	26.9
Deputy Principals	27	Purposive	7	29.6
Counselled Students	3740	Random	374	10
FGD Participants	374	Random	42	11.2

Source: Researcher (2019)

Table 4 shows the schools sampled at 26.9%, giving the 7 Deputy Principals and 7 Teacher Counsellors for the study. Sampling for the student respondents was 10% of the target population of students who had gone through the Teacher Counsellors' office, at 374. The Focus Group Discussion participants were randomly sampled at 6 per school giving a total of 42 participants.

3.6 Instrumentation

The present study used questionnaires for the Teacher Counsellors and students, while structured interviews were used for the Deputy Principals and Teacher Counsellors. Questionnaires were preferred for this study because it is a means of supplying the researcher with quantifiable data that are readily available for statistical analyses (Dambudzo 2009).

Students' questionnaires consisted of a 5-point likert-scale question items that allows for the generation of data for both the independent and dependent variables of the study (Appendix G – P. 227). This tool was given to the sampled students and then they were grouped into between 6 and 7 members for the Focused Group Discussion (Appendix H -

P. 232). Berg (2004) notes that a focus group session consists of a small number of participants, no more than 7, under the guidance of a facilitator, usually called the moderator. He further opines that it is an excellent means for collecting information from young children and teens, as well as from elderly adults. It collects qualitative data. For this study, each school had 6 randomly sampled FGD participants leading to a total of 42 FGD participants from the 7 sampled schools.

The researcher was the moderator in the Focus Group Discussions and asked open-ended questions during the sessions. He did ask questions, in turn, to stimulate discussion and conversation during the sessions. He was guided by the following:

1. Introduction and introductory remarks.
2. Statement of the basic rules or guidelines for the interview.
3. Short question-and-answer discussions.
4. Special activities or exercises.
5. Guidance for dealing with sensitive issues.

Teacher Counsellors Department and Deputy Principals provided information using structured Interview Schedules (Appendix I – P. 232).

3.6.1: Social Cognitive Skills Questionnaire for Students

This tool has elements that bring out the abilities of the students on issues of self-control, vicarious experiences, rational attribution and inhibitions in their behaviours (Appendix G - P. 226). It was developed by the researcher. It had Sections A to D where Section A looked at the student's self-control through a Brief Self-control Scale; Section B had the Vicarious Experience Scale; Section C gave student's rational attribution through the Complete Attribution Scale and the last Section, D had the Inhibition Scale. All these scales had rating Scales like Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D) and Strongly Disagree (SD).

The deputy principals were interviewed in their offices. They were asked the standard question items and their responses were indicated in the spaces on the questionnaire guide. Just like in the case of the students' questionnaires, the deputies were assured of their informed and consented participation in the study, anonymity, and confidentiality as indicated in the tools of collecting raw data.

3.6.2: Behaviour Modification Questionnaire for Students

This tool has characteristics of behaviour that could be seen to need successful modification (Section VI – P. 230). This helped with measuring how much these are in the students who have undergone guidance and counselling. It had both positive and negative reinforcement items. There were behavioural tendencies that students responded to. These were rated using the scale of Strongly Disagree (SD), Disagree (D), Unsure (U), Agree (A) and Strongly Agree (SA).

3.6.3: Interview Schedule for Teacher Counsellors

An interview refers to a joint product of what interviewees and interviewers talk about together and how they talk with each other (Czarniawska, Barbara (2014). This tool was used to help determine the input of the head of the Department of Guidance and Counselling in the institutions in so far as guidance and counselling issues are handled (Appendix I – P. 232). This focused on the process, the expected and the actual outcomes. The interview schedule answered questions on relationships between social cognitive skills and delinquent behaviour modification noticed among students.

The teacher guide and teacher counsellors were interviewed in their offices. They were asked the standard question items and they indicated their responses in the spaces on the questionnaire guide. Just like in the case of the students' questionnaires, informed consent was observed for the deputy principals with anonymity and confidentiality catered for in the data collection tools.

3.6.4: Interview Schedule for Deputy Principals

The deputy principals are the ones who deal with cases of discipline in our schools. This tool aimed at finding out the impact of guidance and counselling on cases of indiscipline among students (Appendix I - P. 232). The tool focused on the expected and the actual outcomes of the students who had undergone this process from the Deputy Principal's office. The interview schedule answered questions on the relationship between social cognitive skills and delinquent behaviour modification noticed among students.

The deputy principals were interviewed in their offices. They were asked the standard question items and their responses indicated on the spaces on the questionnaire guide.

Informed consent was observed in the course of involving the deputy principles in the research.

3.6.5: Focus Group Discussion Guide for Students

The study proposed to involve participants in FGD sessions organized where they explicitly expressed themselves on their experiences before, during and after the counselling intervention (Warren, 1955). Berg (2004) notes that it is a method of research in which three or more participants take part in an extended group discussion about a given issue. This method was used to get in-depth perception of the students on the issues taken for guidance and counselling sessions as well as their satisfaction with the outcomes (Appendix H – P.216). Jensen and Laurie (2016) add that this method provides a social setting and opportunity for participants to discuss specific topics, in an informal and supportive setting using their own concepts, frames of reference and vocabulary.

The ideal size of a focus group is usually between five and eight participants. If the topic is of minor concern to participants, and if they have little experience with the topic, then a group size of 10 could be productive. But, as the topic becomes more important, or as people have more expertise on the topic, or when they are likely to have strong feelings about the topic, then the group size should be restricted to five or six people (https://www.sagepub.com/sites/default/files/upm-binaries/24056_Chapter4.pdf - Participants in a focus group). The current study had seven Focus Group Discussion groups, each with 6 participants across the sampled secondary schools in Rongo Sub County facilitated by the researcher. This was a number that was meant to give the best data as these were students who had been counselled and had delinquent behaviour modification. This means there was a total of 42 students, sampled from the same group that had filled in the questionnaires, engaged in the FGDs for this study.

Focus Group Discussions were used to enable the researcher prompt and probe deeper into the given situation as one adheres to the FGD guide (Halloway & Wheeler, 2010; Bryman, 2012). Through FGD, the researcher was able to collect non-verbal responses. The FDG further provided the students with an interactive environment where they were able to give and hear each other's comments from where there could either be support or disagreement

on these hence creating rich data for analyses (Morgan, 1988). The FGD also allowed the researcher to collect qualitative data from a larger sample within a short time making the process economical (Sandbag & Heden, 2011).

Each took between forty-five minutes to one hour for effective interaction hence responses. The FGDs answered questions on relationships between social cognitive skills and delinquent behaviour modification noticed among students.

3.7 Validity and Reliability of Research Instruments

This study ensured the validity and reliability of the instruments for data collection. De Vos et al. (2005) mention that a definition of validity includes two aspects, namely that the instrument actually measures the concept in question, and that the concept is measured accurately. They refer to four types of validity, namely content validity, face validity, criterion-related validity and construct validity.

3.7.1 Validity of Questionnaires

Dambudzo (2009) suggests that the idea of validity hinges on the extent to which research data and the methods of obtaining the data are deemed accurate, honest and on target. Validity is a situation-specific concept: it is dependent on the purpose, the population and the situation where the measurement takes place (McMillan & Schumacher, 2006). Practically speaking, however, the validity of an instrument is assessed concerning the extent to which evidence can be generated in support of the claim that the instrument measures the attributes targeted in the proposed research (Dambudzo, 2009).

In this study, the focus was specifically on content validity. The questionnaires were subjected to the scrutiny of the supervisors to ensure expert content validity and their recommendations were used to finally formulate instruments with the ability to obtain the expected relevant data. The validity of the instruments of the study was therefore based on the expert opinion and judgment on the clarity of the questionnaire and interview schedules (Mugenda, 2011). Gray (2009) talks of the more consistent the results obtained by the measurement instrument, the more reliable the instrument.

Even though the questionnaires were subjected to the scrutiny of the supervisors to ensure expert content validity and their recommendations were used to finally formulate instruments, the internal validity of the constructs was tested by subjecting the survey data to suitability tests using the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO Index) and Bartlett's Test of Sphericity, as explained by Gravetter and Wallnau (2000). Therefore, the internal validity of the questionnaire's data set for analysis was assessed for each sub-scale and the results were summarized in Table 5.

Table 5: KMO and Bartlett's Test

Subscale	Kaiser-Meyer-Olkin (KMO index)	Bartlett's Test for Sphericity	Approx. Chi-Square	df	Sig.
Self-control	.715	515.978	78	.000	
Vicarious experience	.727	162.807	15	.000	
Rational attribution	.509	238.752	66	.000	
Inhibition	.643	1490.887	378	.000	
Behaviour modification	.727	694.953	66	.000	

Source: Survey data (2019), SPSS Analysis

Table 5 shows the results of the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO Index) and Bartlett's Test for Sphericity for each subscale of the questionnaire, indicating that the questionnaires had acceptable internal validity. Kaiser (1974), as reported by Creswell (2014) states that the Kaiser-Meyer-Olkin measure of sampling adequacy index > 0.6 is of adequate internal validity. Similarly, Creswell (2014) commends that Bartlett's Sphericity test statistic should be less than 0.05 for an adequate internal validity. From the results, Bartlett's test for Sphericity is significant (p=0.000) and Kaiser-Meyer-Olkin indexes are all > .6 for all the subscales of the questionnaire. As a result,

based on the results, it was concluded that the questionnaires were of adequate internal validity.

3.7.2 Reliability of Questionnaires

Strydom, Fouche, Poggenpel and Schurink (in Dambudzo 2009) highlight that an instrument such as a questionnaire is said to be reliable to the extent that independent administrations of it, or a comparable instrument, consistently yields the same or similar results.

In this study, the focus was on the Cronbach alpha method. The Cronbach alpha method of determining internal consistency assumes the equivalence of all the items in the questionnaire. It is a much more general form of internal consistency and is used for items that are not scored right or wrong (McMillan & Schumacher 2006). In the present study, the items in both questionnaires were not scored right or wrong. The Cronbach alpha is, generally speaking, the most appropriate kind of reliability in the case of survey research, as well as for other questionnaires where there is a range of possible answers for each item (McMillan & Schumacher 2006).

The internal consistency was determined by calculating the Cronbach alpha's α -coefficients with the help of the SPSS computer software program Version 27 (<https://www.ibm.com/support/pages/downloading-ibm-spss-statistics-27> SPSS Incorporated 2019). According to McMillan and Schumacher (2006), an acceptable range of reliability coefficients for most instruments is between .70 and .90. Amia, (2005) says that if the reliability aimed at the questionnaires for students is greater than 0.7, which is the recommended reliability then the instrument will be reliable for the research. The coefficient of internal consistency of 0.7 and above was accepted.

To investigate the reliability of the student questionnaire, a measure of internal consistency of the items in each subscale was established. Creswell (2014) affirms that internal consistency is the degree to which an instrument is error-free, reliable and consistent across time and the various items in the scale. Cronbach's alpha coefficient analysis was used to investigate the internal consistency of the questionnaires since it is the most reliable test of

inter-item consistency reliability for Likert scaled or rating scaled questionnaires. The reliability for multi-item opinion items was computed separately for all the subscales in the questionnaires and the coefficient alpha of these variables are reported in Table 6.

Table 6: *Internal Consistency: Cronbach's Alpha Results for the Questionnaire*

Scale	No. Items	Cronbach's alpha	Item (s) deleted	Conclusion (Reliable/Unreliable)
Self-control	13	.701	1 and 6	Reliable
Vicarious experience	6	.759	2	Reliable
Rational attribution	12	.697	11	Reliable
Inhibition Behaviour	28	.709	5 and 13	Reliable
modification	12	.721	3	Reliable

Source: Author (2019), SPSS Analysis.

Table 6 reveals that all the sub-scales reached the required level of internal consistency of reliability, with the Cronbach's alpha values ranging from a low of 0.701 (self-control questionnaire) to a high of 0.759 (vicarious experience questionnaire). These findings were in line with the recommendation by Oso and Onen (2013) that a coefficient of 0.60 and above is of adequate reliability, indicating that the instrument has an adequate inter-item consistency reliability standard. The Cronbach's alpha for all the subscales reveals that the instruments had adequate reliability for the study. This indicates that all the items fitted in well with others in the sub-scales. However, some items were deleted first in each of the sub-scales, all items were now correlated with the total scale to a good degree in all the sub-scales. The deleted item was excluded in the computation of final variables used in the inferential analysis. Consequently, the questionnaires were considered suitable for data collection because they adequately measured the constructs for which they were intended to measure.

3.7.3 Trustworthiness of Qualitative Data

Connelly (2016) posits that the trustworthiness of a research study is important in evaluating its worth. Trustworthiness involves establishing credibility: confidence in the truth of the findings. Transferability: showing that the findings have applicability in other contexts. Dependability: showing that the finding is consistent and could be repeated. Conformability: a degree of neutrality or the extent to which the finding of a study are shaped by the respondent and not research bias, motivation or interest. These are well-presented on Table 7.

Table 7: *Trustworthiness of qualitative data*

Criterion	Strategies Employed
Credibility	<ul style="list-style-type: none">• Prolonged engagement• Peer briefing• Triangulation• Member check
Transferability	<ul style="list-style-type: none">• Providing thick description• Purposive sampling
Dependability	<ul style="list-style-type: none">• Creating an audit trail• Triangulation
Confirmability	<ul style="list-style-type: none">• Triangulation• Practice reflexivity.

3.8 Data Collection Procedures

The permission to conduct the study was first obtained from the Director of the Board of Postgraduate studies at the University (See Appendix B – p. 188). Thereafter, ethical clearance was then obtained from National Commission for Science Technology and Innovation (NACOSTI) (See Appendix C – p. 189). There was also a County Administrative Research Authorization (See Appendix D – p. 190). The letter of introduction was presented to the County Education Office (See Appendix E – p. 191) and then to the Sub-County Education office. The Principals of the sampled schools were also requested permission to carry out the research in their schools (See Appendix A – p. 187).

On the day of data collection, the questionnaires were administered in school at a time the students were not attending lessons or assessments. All of the students received the same stimulus and were exposed to the same instructions and input. The questionnaires were issued to the students on prearranged days as the best way to ensure optimum cooperation, participation and high students response.

The interview schedules were administered when the teacher counsellors were not engaged in class or counselling duties and to the deputy principals when not engaged in their administrative duties. This ensured utmost cooperation in the process of collecting the requisite data from them.

The questionnaires took under twenty minutes each to complete. All questionnaires were collected after completion, and the respondents appreciated their cooperation and participation.

The respondents were assured that their identities and the results would be treated confidentially (See Appendix F – p. 192).

3.9 Data Analysis

Data were analyzed both quantitatively and qualitatively.

3.9.1: Quantitative Data Analysis

Statistical methods are mainly used for analyzing data to discuss the relationship between variables (Babbie, 2007). The students' behaviour modification outcomes were obtained

by collecting the counselling reports from the teacher counsellors' records for each respondent. These were entered into a database separately as well as combined to create an average response for each student. In this study, all results were used for analysis. The data was analyzed by entering the data into SPSS and performing a Pearson Correlation with self-control, vicarious experience, rational attribution, and inhibition variables against success in behaviour modification among students as the other variables. Qualitative data analysis was carried out through a thematic framework.

The data from questionnaires was analyzed using descriptive statistics and Bivariate analyses using simple cross-tabulations. Quantitative data was analyzed using frequency tables, and descriptive statistics (frequency distribution and descriptive statistics such as percentages, means, and standard deviations). The Pearson correlation test was used to establish the level of significance ($P \leq 0.05$) as the standard for rejecting or accepting the null hypothesis (Creswell, 2012). The findings were presented in tables, graphs, and narrative form. Table 8 gives the detailed matrix of the quantitative analysis.

Table 8: Quantitative Data Analysis Matrix

Research Hypotheses	Independent Variable	Dependent Variable	Statistical Test
There is no statistically significant relationship between self-control and delinquent behaviour modification among secondary school students in Rongo Sub-County.	Self-control	Behaviour	Descriptive statistics
		Modification	Pearson correlation
There is no statistically significant relationship between vicarious experience and delinquent behaviour modification among secondary school students in Rongo Sub-County	Vicarious experience	Behaviour	Descriptive statistics
		Modification	Pearson correlation
There is no statistically significant relationship between rational attribution and delinquent behaviour modification among secondary school students in Rongo Sub-County	Rational attribution	Behaviour	Descriptive statistics
		Modification	Pearson correlation
There is no statistically significant relationship between inhibition and delinquent behaviour modification among secondary school students in Rongo Sub-County	Inhibition	Behaviour	Descriptive statistics
		modification	Pearson correlation

3.9.2: Diagnostic Tests

The study made a diagnosis of the data collected to find out its suitability for correlation and multiple regression analysis. This was done by testing the assumptions of normality, multi-collinearity, independency, heteroscedasticity and homoscedasticity.

3.9.2.1 Normality Test Results

In line with the recommendation by Oso and Onen (2013), the study used Shapiro-Wilk's test (S-W) to investigate the normality of the variables. Shapiro-Wilk's test is comparable to the correlation between a given data and its corresponding normal scores, with S-W = 1 when their correlation is perfectly normal. This means that a significantly ($p < .05$) smaller S-W than 1 implies that the normality is not met. Hence, the data is normal when Shapiro-Wilk (S-W) is $\geq .05$. Tabachnick and Fidell (2001) approve the use of Shapiro-Wilk's test for small and medium samples up to $n = 2000$. Table 8 is the SPSS output showing Shapiro-Wilk tests results.

Table 9: *Tests of Normality of the Data Set*

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Self-Control	.068	344	.051	.988	344	.076
Vicarious Experience	.096	344	.060	.947	344	.063
Rational Attribution	.070	344	.056	.988	344	.057
Inhibition	.056	344	.072	.992	344	.059
Delinquent Behaviour Modification	.071	344	.066	.987	344	.074

a. Lilliefors Significance Correction

Source: Survey data (2019), SPSS Analysis

From Table 9 it is evident that there was no violation of normality by any of the variables. It is evident that all the variables met the assumptions of normal distribution given that there were no statistically significant differences ($\text{sig.} < 0.05$) noted in any of the variables with their corresponding normal scores that is their sig. values were greater than the prior set value of .05.

3.9.2.2 Assumptions of Multi-Collinearity

Multi-collinearity is a situation where there is a predictor variable in the multiple regression model that could be linearly predicted from the other variables with a significant degree of

accuracy (Tabachnick & Fidell, 2001). Similarly, Creswell (2014) observes that multi-collinearity is an excessively high level of inter-correlation among the independent variables in a study, such that the effects of the independent variables on the dependent variable cannot be separated from each other. Tabachnick and Fidell (2001) assert that even though correlation matrix is sometimes used to investigate the pattern of inter-correlation among the variables, its use is not adequate. In that regard, this study investigated the multi-collinearity assumption by examining tolerance and the Variance Inflation Factor (VIF), as clarified by Gravetter and Wallnau (2000).

Table 10: *Tolerance and Variance Inflation Factor (VIF) Statistics*

Model	Collinearity Statistics	
	Tolerance	VIF
Self-Control	.975	1.025
Vicarious Experience	.908	1.101
Rational Attribution	.956	1.046
Inhibition	.791	1.264

a. Dependent Variable: Behaviour Modification

Source: Survey data (2019), SPSS Analysis

Table 10 shows SPSS output indicating tolerance and Variance Inflation Factors. Tolerance is the proportion of variance in the predictor that cannot be accounted for by the other predictors. Oso and Onen (2013) affirm that a small tolerance value suggests that the variable under consideration is nearly a perfect linear combination of other independent variables already in the model and that it should not be added to the regression equation because it is insignificant. The variable's tolerance is $1-R^2$, while VIF is its reciprocal. According to Tabachnick and Fidell (2001), a variable whose tolerance values are less than 0.10 and VIF value greater than 10 may need to be investigated. From Table 4.6, it is evident that collinearity conditions were met, given that each of the variables had adequate tolerance (tolerance value $> .10$) and Variance Inflation Factor (VIF < 10), indicating that there was no violation of multi-collinearity assumptions which is a requirement for multiple regression analysis.

3.9.2.3 Test for Independence of Observations

Assumption of independence of observations indicates that the observations in the sample are independent of each other, signifying that the measurements for each sample subject are in no way influenced by or related to the measurements of other subjects. Consistent with the recommendation by Oso and Onen (2013), the Durbin Watson test was used to check if the assumptions that the observations are independent were met, as indicated in Table 11.

Table 11: *Test of Independence: Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.408 ^a	.166	.157	.28032	1.704

a. Predictors: (Constant), Inhibition , Self-Control, Rational Attribution Vicarious Experience

b. Dependent Variable: Delinquent Behaviour Modification

Gravetter and Wallnau (2000) point out that if subsequent observations are not related, the Durbin-Watson statistic should be between 1.5 and 2.5. Table 3.9 shows that the Durbin-Watson statistic is 1.704 which is between 1.5 and 2.5, suggesting that the data was not auto-correlated, signifying that the assumption of independence was not violated.

3.9.2.4 Heteroscedasticity

The study sought to investigate the assumption of heteroscedasticity, which describes a situation in which the error term is the same across all values of the independent variables. Gravetter and Wallnau (2000) argue that if a model is well-fitted, then there should be no pattern to the residuals plotted against the fitted values. If the variance of the residuals is non-constant then the residual variance is said to be heteroscedastic. This is shown using the graphical method by fitting residuals versus fitted (predicted) values, as shown in Figure 3.

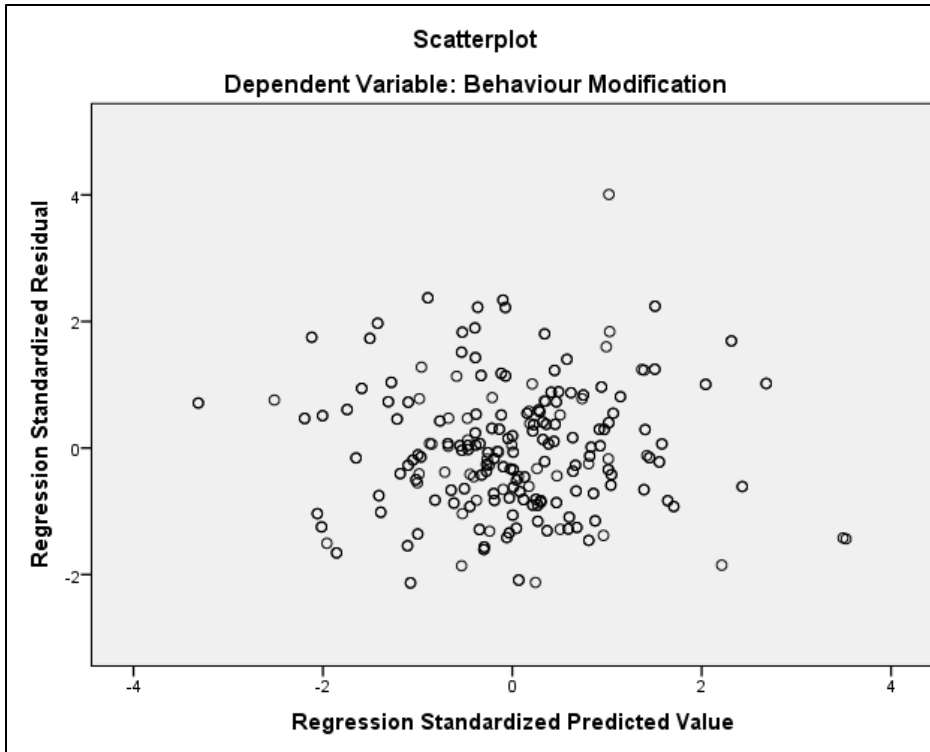


Figure 3: Scatterplot of standardized residuals against standardized predicted values

In Figure 3, it is evident that the data points almost formed a patternless cloud of dots suggestive of heteroscedasticity. Gravetter and Wallnau (2000) point out that heteroscedasticity is implied when the scatter is not even and has no definite patterns. Therefore, the assumption of heteroscedasticity, which refers to the equal variance of errors across all levels of the independent variables, was not significantly violated. This reveals that the assumption that errors were spread out consistently between the variables, was upheld. This demonstrates that there was no clear or systematic pattern to the residuals.

3.9.3: Qualitative Data Analysis

The qualitative data obtained was analyzed using the Thematic Framework, involving six phases thus: familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming the themes and producing the results (Braun & Clark, 2006). To ensure rigorous analysis of data thematic analysis involves six phases, these are; familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming the themes and producing the results (Braun &

Clark, 2006). In this study, the same procedure was followed and all the phrases were employed. The researcher began by transcribing the data, then recording the experiences of the participants in the form of transcript quotations verbatim, allocating codes for the initials. The next step was to sort the codes into themes/sub-themes. The qualitative data analysis is detailed in Table 12.

Table 12: *Qualitative Data Analysis Matrix*

No.	Phase	Process
1	Data Familiarity	Actively read and re-read data to familiarize myself with the depth and breadth of its content to identify meanings and patterns. Include transcription of verbal data into written form.
2	Creating Initial Codes	Create codes for identified patterns and meanings (themes) for instance most basic segment of the raw data that can be assessed in the most meaningful way regarding the phenomenon.
3	Sorting Themes	Sorted and combined themes to form overarching themes from the entire set of data. A miscellaneous theme is created to house patterns that may not seem fit but could be incorporated later.
4	Reviewing Themes	The researcher recombined major themes taking into account the validity and accuracy in reflecting meaning evident in the data set. Missed data may be coded at this level.
5	Defining/Naming Themes	Identified the essence of each theme and the aspect of data it captures in relation of the research questions for each theme.
6	Reporting	Wrote a report with clear extracts of examples to tell the story of the data convincingly, coherently, logically and without repetition.

Adapted from Braun and Clarke (2006, p. 74)

As shown in Table 12, the qualitative data analyses involved Phase 1: Data familiarity, Phase 2: Creating initial codes, Phase 3: Sorting themes, Phase 4: Reviewing themes, Phase 5: Defining/Naming Themes and finally, Phase 6: Reporting.

An important feature of Phase 2 involves organizing data into distinct categories and tagging those categories with a phrase or language of the participant (Rossman & Rallis, 2012). This ensured that the original context was adequately maintained and captured.

Table 13: *Sample of Themes, Interview Excerpts and Codes*

Sample of themes	Codes	Interview excerpts
Help Seeking	HS	<i>“There was this student who was always found in problems and always seeing the deputy on issues indiscipline. This boy was referred to the guidance and counselling department and after the counselling sessions, this student was seen to be with students who are positively perceived in school. This was possibly as a result of the psychoeducation on positive and negative peer influence on one’s behaviour.” (TC 5).</i>
Role modelling	RM	<i>“In the process of counselling, our students are exposed to the expected behaviours and those who have what could be good in terms of behaviour are pointed out to these students. After their sessions, it is realized that some of them choose to ape the role models in school.” (DP 6).</i>
Suppression of bad behaviour	SBB	<i>“I felt that because I was having a habit that was not seen by the people around as good, I had to keep off it and try to do what others say is good. This helps me not to get a lot of negative attention for teachers and fellow students.” (FGD 5C).</i>

3.10 Ethical Considerations

Generally speaking, ethics is considered to deal with beliefs about what is right or wrong, proper or improper, good or bad (Mcmillan & Schumacher, 2014). It is important that a researcher who conducts a study is aware and fully informed of what is considered to be ethical in research. A researcher has to act ethically at all times. Different researchers focus

on different aspects of ethics. In this study the researcher focused on informed consent, the violation of confidentiality and the release or the publication of the findings.

On informed consent, Mcmillan and Schumacher (2014) state that in the case of research conducted at an institution, such as a university, a school or a school system, approval for conducting the research should be obtained from the institution before any data may be collected. This researcher sought the permission of the Principal, to conduct the research after getting the same from the NACOSTI (See Appendix C – p. 189).

Mcmillan and Schumacher (2014) explain that informed consent is achieved by providing the subjects with an explanation of the research, the opportunity to terminate their participation at any time with no penalty, and the full disclosure of any risks associated with the study. The researcher, personally distributed and collected the questionnaires, and stressed the fact that the respondents were free to refuse participation in the research. On the questionnaire, the aim of the research was stated so that the respondents were aware of it.

The respondents were informed that they could refuse to participate in the research if they so wished (See Appendix F – p. 192). Informed consent implied that the subjects have a choice about whether or not to participate (Mcmillan and Schumacher, 2014). Anybody willing to participate after this explanation was presumed to have given his or her informed consent to be involved in the investigation (Dambudzo, 2009).

On confidentiality, the study ensured this by handling the data provided and reporting it in such a way that no individual identities are disclosed, and that no one, except the researcher, would have access to the data or the names of the participants (Dambudzo, 2009). Anonymity implied the guarantee that no one was able to identify any respondent after the study has been conducted.

To protect the students' identities, the researcher reported on the individual input via the anonymity of the participants. McMillan and Schumacher (2006) state that one of the means of ensuring confidentiality is to report only group results.

CHAPTER FOUR

FINDINGS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter presents the findings, interpretation and discussion of the results. The chapter has been sub-divided into sections and subsections. The demographic information of the respondents (students) as well as the participants (deputy principals, teacher counsellors and students' focus group) such as age, gender, designation and school category have been presented first. After the demographic information, and findings of the study have been discussed, the researcher presented the research findings based on the study objectives and hypotheses tested. The quantitative data was analyzed using both descriptive and inferential statistics. Descriptive statistics were used to describe and summarize the data in form of graphs, frequency tables and percentages. The inferential statistics such as Pearson Product Moment Correlation Coefficient were used to help make inferences and draw conclusions from the study findings.

The inferential statistics were mainly focused on the correlation analysis which was used to establish the relationship between social cognitive skills and the prediction of delinquent behaviour modification and the independent variables.

This chapter also presents qualitative results and discussion as collected from in-depth interviews from seven (7) purposively (the national school in the sub-county) and randomly sampled secondary school deputy principals, teacher counsellors and students. The chapter highlights verbatim excerpts from the participants while analyzing and interpreting their reactions to the interview question items. The qualitative data obtained was analyzed using the thematic framework, involving six phases thus: familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming the themes and producing the results. Braun and Clark (2006) note that Thematic Analysis is not grounded on any particular theoretical or epistemological framework and can therefore be applied across a wide range of qualitative research approaches hence making it flexible.

4.2 Return Rate of Research Instruments and Demographic Information

The study targeted a total of 374 sampled students to whom the Focus Group Discussions were to be administered. Out of this number, a total of 344 of them were involved, translating to a response rate of 92.0%. Creswell (2014), and Oso and Onen (2013) all agree that a response rate of at least 50% is adequate, 60% is good and 70% and above is excellent for analysis and reporting on a survey study. Founded on this assertion, the current study's response rate of 92.0% was therefore considered to be significant.

The recorded high response rate was attributed to the fact that the discussions were personally carried out by the researcher with the participants, who were pre-notified of the purpose of the study. It was also due to extra efforts that were made in form of visits to the participants to be involved in the discussions. For the Deputy Principals and students Teacher Counsellors who were busy or not found, the researcher had to go back on more appropriate days after consultations. Similar arrangements were made for students who could not be available the first time their schools were visited.

4.2.1 Return Rate of Research Instruments

The return rates of research instruments, including questionnaires, are indicated in Table 14. This summary for all respondents revealed that they were adequate for the study.

Table 14: *Return rate of research instruments*

Respondents	Questionnaires administered	Interviewed	Focus Group Discussion	Collection tools returned	Return rate (%)
Students	374	-	-	344	92.0
Teacher Counsellors	-	7	-	7	100
Deputy Principals	-	7	-	7	100
FGD Participants	-	-	42	42	100
Total	374	14	42	358	92.3

Source: Survey data (2018)

From Table 14 it is observable that all the 7 groups of the student participants (a group per school), 7 deputy principals and 7 teacher counsellor participants had their data analyzed, making their contribution 100%. The summary of the return rate of questionnaires from the student respondents revealed that the questionnaires were adequate for the study.

4.2.2 Demographic Information of the Student Respondents

The study sought to investigate the background information of the students who took part in the study. The background information was well-thought-out for the determination of whether the respondents were representative enough in terms of their demographic characteristics for the generalization of the results of the study. The demographic information investigated includes age, gender, class and the school category of the students, as shown in Table 15.

Table 15: *Demographic Information of Student respondents (n = 344)*

Characteristics	Frequency	Percentage
Gender		
Male	209	60.8
Female	135	39.2
Total	344	100.0
Age		
Below 15 Years	5	1.5
15-17 Years	254	73.8
18-19 Years	75	21.8
Above 19 Years	10	2.9
Total	344	100.0
Class		
Form 1	42	12.2
Form 2	157	45.6
Form 3	89	25.9
Form 4	56	16.3
Total	344	100.0
Category of School		
Sub-County	112	32.6
County	21	6.0
Extra-County	196	57.0
National	15	4.4
Total	344	100.0

Source: Survey data (2018)

Table 15 shows that the majority 209 (60.8%) of the student respondents were males. The results of the study indicate that there was a glaring disparity in terms of the number of female students and their male counterparts. However, this sample seemed to depict the actual position of student composition by gender in Migori County, where the majority of

secondary school students are females. Nonetheless, both gender took part in the study making the generalization of results across gender possible.

On their ages, a significant majority 254 (73.8%) of the students who took part in the study were in the age group of 15-17 years. The students who were under 15 years of age had the least 5 (1.5%) representation, followed by those above 19 years at 10 (2.9%) and the rest 75 (21.8%) were aged 18-19 years. Likewise, it emerged that although all classes were represented in the study, form two students took the highest proportion at 157 (45.6%) and the least being form one students at 42 (12.2%). Form three and form four students were at 89 (25.9%) and 56 (16.3%), respectively.

On the category of schools, where the students respondents came from, it emerged that the majority 196 (57.0%) of the students were from extra-county secondary schools and the least were from National schools. However, the other students came from the Sub-County 112 (32.6%) and county schools 21 (6.0%). This implies that all categories of schools were represented in the study, indicating that the results of this study can be generalized across all categories of schools.

4.3 Relationship between Self-Control and Behaviour Modification among Secondary School Students in Rongo Sub-County

The first research objective was to examine the relationship between self-control and behaviour modification among secondary school students in Rongo Sub-County. To address this objective, first, descriptive statistics were used to explore the views of the sampled students on their self-control, followed by the use of inferential statistics to test the hypothesis on the relationship between self-control and behaviour modification.

4.3.1 Level of Self-Control among Secondary School Students

From qualitative data, the main themes emerged through thematic narratives by participants who were involved in the interviews and Focus Group Discussions. Data was collected from deputy principals, teacher counsellors and students who had undergone guidance and counselling. The participants shared varied views related to the current study in the interviews and the Focus Group Discussions held with the teacher counsellors and

deputy principals as well as the students consecutively. These yielded data that formed the qualitative results presented in this chapter.

By using excerpts from interviews, the descriptions of the meanings and interpretations given to their experiences with the phenomenon were able to be made in a way that was almost a reflection of the participants' views (Leberman, 2015). The themes on the relationship between self-control and behaviour modification of secondary school students included thinking before acting, moderating reactions (check overreactions, element of restraint) and making own decisions.

Theme 1: *Thinking before acting*

Thinking before acting is said to be the way for one who has mastery of self-control (DeWall, 2014). This acting after thinking, also referred to as premeditation, was said to be a hallmark of those students who had positively gone through guidance and counselling sessions. Results from interviews with teacher counsellors revealed that some students who had undergone counselling acted after giving thought to the possible consequences of their actions. A representative statement is hereby quoted: *“These students who have gone through guidance and counselling in classes I teach can control themselves and are not badly behaved anymore.”* (T.C. 1).

The deputy principals' responses reveal that self-control positively relates to the behaviour modification of secondary school students leading to not being influenced by peers. These students think about their actions, moves and reactions. These students may even end up being role models in their new-found positive behaviour standing by what they are acting upon despite opposition from around them. One Deputy Principal, reacting to this questionnaire item, is quoted thus:

The students who have gone through our guidance and counseling services are no longer influenced by their former bad groupings. Instead they positively influence some of their former bad colleagues to be better students. We find them to be of great help when it comes to discipline in our school. (D.P. 6).

Similar views were expressed by students in a Focus Group Discussion where they mentioned that students who have been guided and counselled did not do what most other students were doing but made their own decisions. A representative statement is hereby quoted: “*Students who have been guided and counselled change in the way they relate with their former friends who have not been to the service in our school.*” (Student 2, FGD 2A).

This implied that thinking before acting as an element of self-control helped students to make decisions on behaviour. These results are confirmative of what Cochran et al. (2006) found as far as the interaction between the capacity for self-control and desire for self-control are concerned. This earlier research revealed that the interaction was contingent on the desire for self-control. Tittle and Botchkovar (2005) showed that individuals may be able to perceive some level of control in their behaviour through the consequences of their actions. Therefore, we would expect that individuals with lower levels of self-control are likely to perceive more control over their behaviour. The current research does give the same result as these studies.

Equally, although 178 (51.8%) of the students insinuated that they do not have a hard time breaking bad habits, a respectable proportion of 101 (29.3%) of them accepted that they always have a hard time breaking bad habits. The mean of 2.55 and a standard deviation of 1.49 further confirms that only about a half of the students in public secondary schools in Rongo Sub-County do not have a hard time breaking bad habits while another half of them have a hard time breaking a bad habit. This reflects poor cognitive ability, in a sizeable proportion of the students, in controlling their behaviour. On being lazy, the results of the study established that although a significant proportion of 262 (76.2%) of the surveyed students believed that they are not lazy, some 32 (9.3%) of them accepted that they are indeed lazy. This was further corroborated by a mean rating of 1.81 and a standard deviation of 1.126. This finding agreed with Schmeichel and Vohs (2009) who reported that participants who had exerted self-control in the first phase of the study earned fewer points compared to those who had not exerted self-control. On the contrary, Crowell, Kelley, and Schmeichel (2014) found that individual differences in reward responsivity moderated the after-effects of self-control exertion.

Theme 2: Moderating reactions

From the qualitative results, another theme was moderating reactions.

Teacher Counsellors postulated that delinquent students who were initially getting into issues because of overreacting behaved more positively after going through guidance and counselling sessions. These students were now slow to react and when they did, it would not put them in problems with their fellow students and even other members of the school community. A teacher counsellor put it this way: *“They can think before reacting negatively. They can moderate their reactions. It checks overreaction. Leads them to seek for advice to help them solve their issues”* (Teacher Counsellor, 2).

These students are said to have developed the behaviour of not rushing into harmful reactions whenever they are aggrieved making them not make bad conditions worse. They are further said to have an element of restraint. This is the case with students who used to get into issues because of their high tempers. They are now better behaved as they keep off rush reactions. They can hold themselves as a result of the guidance and counselling techniques of keeping themselves in check.

The results from the interview of the Deputies gave control of impulses to steal, and fight back against those who fight them. These students end up relating better with their colleagues, a behaviour they were not having before the guidance and counselling sessions. The quoted response is thus:

It improves their behaviour because they are able to control their impulses like the need to steal for those who were being accused of such, fighting tendencies for those who could not resist this temptation and drug abuse for those who were already in this. (D.P. 6).

There was the response that these initially delinquent students who have undergone guidance and counselling do make their own decisions. In most cases, these were students who were initially making decisions based on group psychology which were negative. With this change, they are now making their own decisions which are reported to be positive. The teacher counsellor noted that: *“These students do not do what other students are doing rather they make decisions on what they want to do by themselves.”* (Teacher Counsellor, 2).

These students are not influenced by their delinquent colleagues' behaviours but are more inward in their reactions. The focused group discussions' related input to moderation had a member of one group saying that these students are changed in terms of better control of their tempers. This ties well with what is already noted about those who were getting into problems because of their uncontrolled temper flare-ups. This input was quoted as: "*It assists one in controlling his/her temper towards a certain condition which might involve outbreak of quarrel or a kind of conflict.*" (Student 4, FGD 1C)

This implied that moderating reactions assisted students to make decisions about behaviours in school which promote peace rather than conflicts. Aart, Terrie, Christian, Steglich, Dijkstra and Wilma (2015) agreed that personal low self-control and friends' externalizing behaviours both predict early adolescents' increasing externalizing behaviours. The current research findings do give a strong relationship between self-control and delinquent behaviour modification along with the moderating behaviour as the brought out by the participants in their perceptions.

The results of the survey indicate that, at a mean rating of 2.08 (SD=1.31), although a majority of the students in public secondary schools in Rongo Sub-County deny that they say inappropriate things, a sizeable proportion accepted that they sometimes say inappropriate things. In fact, 168 (48.8%) and 67 (19.5%) of the students who participated in the study strongly disagreed and disagreed, respectively, that they say inappropriate things. However, another respectable proportion of 61 (17.8%) of students agreed that they occasionally say inappropriate things, but 35 (10.2%) of them did not disclose whether or not they say unsuitable things. This finding agreed with Finley and Schmeichel (2018) who reported that after self-control exertion, participants reported feeling more positive effects in response to positive images, and this increase was particularly prevalent among participants with proneness toward positive affectivity. On the contrary, Leuthi and colleagues' (2016) results indicated that, in the absence of a financial incentive, prior self-control exertion impaired Stroop performance.

It also emerged from the survey results that many of the students do certain things that are bad for them provided they get gratification out of those things they do. This came out from the response of the sampled students, where although 171 (49.7%) of the students

disagreed, 114 (33.1%) of them agreed that they always do certain things that are bad for them provided they are fun. However, 59 (17.2%) of the respondents were undecided on the matter. Similarly, well more than a third of 133 (38.7%) of the students who took part in the survey agreed that sometimes they can't stop doing certain things, even if they know they are wrong. Likewise, it emerged that about one out of every five 71 (20.1%) of students who took part in the survey often act without thinking through all the alternatives, reflecting a low rating of 2.22 (SD=1.39) on the self-control scale.

These findings indicate that many secondary school students have low cognitive ability to control their behaviour when confronted with temptations and impulses, which indicates low levels of self-control. On the other hand, the majority 251 (73.0%) of the students insisted that they sometimes refuse things that are bad for them even if they are fun. A mean rating of 3.93 (SD=1.38) reveals that a sizeable proportion of the students have fairly strong restraint on doing certain things that they perceive to be harmful to them. Equally, 154 (44.8%) of students insisted that they would stop doing certain things if they know it is wrong. In agreement, Wagner et al. (2013) found that participants who had previously exerted self-control showed reduced functional connectivity. On the contrary, Lee and Kimmelmeier (2017) reported that compared to a control condition, the physical measure of self-control did not improve. This was also evident in a secondary objective measure of self-control, a Stroop task, as well as in self-reported self-control.

Theme 3: *Own decision making*

From qualitative results, another theme that was identified was own decision making.

The students who had problems related to group thinking as well as group decision-making have been observed to make use of their own thought processes and end up with their own decision-making after guidance and counselling. These students take greater responsibility for their actions and reactions. These more often than not help them with better behaviour in school and even in class. A teacher counsellor had this to say: "*The student may not do what the others are doing but have an own decision: self-decision on issues involving him*" (Teacher Counsellor, 2).

The deputy principals also had a similar response noting that the guided and counselled students were not influenced by peers. The influence from peers in school is always negative making it a loathed behaviour by the school administration. It does lead to delinquent behaviour and any modification that can make a student keep off it would be appreciated. The Deputy Principal who brought in this noted that: *“Boys with problems are sometimes those who lack self-control. These are influenced by others to engage in bad behaviour. They are often helped, through guidance to be able to rely on themselves for decision making rather than the bad boys.”* (Deputy Principal, 6).

In the Focus Group Discussion a participant said that out of counselling, he can make his own decisions. This may have been a student who initially had problems in making own decisions and hence relied heavily on others for direction. This student associated this with the development of good character in him. This means that the student is perceiving a behaviour modification in him out of the guidance and counselling session. He put it thus: *“It brings a good character out of me hence guides me with my assertiveness and decision-making.”* (Student, 5, FGD 7B).

This implied that own decision making as an element of self-control helped students in behaviour change. The results here are in agreement with what Borushok (2014) found out, a relationship between self-control and delinquent behaviour modification. The issue of own decision making also mirrors another research as documented in the literature review here. Tittle and Botchkovar (2005) showed that individuals may be able to perceive some level of control in their behaviour through the consequences of their actions. Similarly, Kuhn (2013) agreed that self-control was linked to lower levels of risk-taking because of lower levels of behavioural intentions. Altering decision-making pathways may be an effective way to intervene with individuals at high risk for engaging in risk-taking behaviour.

Borushok (2014) also agreed that trait self-control increased throughout the intervention and this change in trait self-control was moderately associated with self-monitoring, calories expended through physical activity and per cent weight loss from baseline to post-treatment and baseline to six-month follow-up.

The results here are further corroborative of Cochran, Aleksa and Chamlin (2016) who showed that capacity for self-control and desire for self-control has independent effects on academic dishonesty. Morutwa and Plattner (2014) also concurred that total self-control scores correlated moderately and inversely with alcohol consumption per week, in situations of stress, happiness, and when with friends. Standard multiple regression analysis revealed that self-control was a stronger predictor of the amount of alcohol consumed than were age and gender.

Equally, it emerged from the survey results that most of the students in public secondary schools in Rongo Sub-County are not very satisfied with their level of discipline, as mirrored by a mean rating of 4.23 with a standard deviation of 1.19. For instance, more than three-quarters of 270 (78.4%) of the students who participated in the study said they wished they had more self-discipline, an indication that there is regret the students on their poor discipline. Only 32 (9.3%) of the sampled students expressed high satisfaction with their level of discipline. Hence, the study results imply that most of the students wished they had more self-discipline than their current level of discipline. Similarly, when the students were asked whether people would say that they have iron self-discipline, a mean of 2.99 (SD= 1.30) emerged implying that among the students in public secondary schools in Rongo Sub-County there is no significant quantitative difference between those who believe that people would say they have iron self-discipline and those who do not have iron self-discipline.

This was further corroborated by 106 (30.8%) of those who agreed and 107 (31.1%) who did not agree that people would say they have iron self-discipline. However, a sizeable proportion of 131 (38.1%) of them was undecided, indicating that they were not sure what people would say about their level of self-discipline. In agreement, Ahmad et al (2012) results indicated that the self-control training procedure was significantly effective in improving the social skills of students. On the contrary, Staubitz, Lloyd and Reed (2019) indicated that self-control training alone did not improve self-control, but a modified version of self-control training with a rationale and rule for selecting the delayed reward promoted self-control for 3 participants.

The results of the study also show that pleasure and fun sometimes keep students from getting work done. Although 142 (41.3%) of sampled students alluded that pleasure and fun never keep them from getting work done, an almost similar proportion of 140 (40.7%) of them agreed that pleasure and fun sometimes keep them from getting work done. In fact, a mean rating of 2.98 (SD=1.58) points out that among the secondary school students in Rongo Sub-County, there is no significant difference in terms of numbers between the students whose pleasure and fun keep them from getting work done and those whose work is not affected by pleasure and fun. In addition, whereas 189 (54.9%) of the students alluded that they do not have trouble concentrating, 93 (27.0%) of them agreed their concentration on anything including work is occasionally affected by other things.

This is reflected by a mean rating of 2.48 (SD=1.49) on a scale of 1 to 5 in the level of self-control, indicating that on average only a small number of students do not have trouble concentrating. Although 253 (73.5%) of the students alluded that they can work effectively toward long-term goals, 53 (15.4%) of them confirmed that they are not able to work effectively toward long-term goals, which reflects a low cognitive ability to control emotions and behaviour in the face of temptations and impulses affecting their both short and long-term goal achievement among the secondary school students in Rongo Sub-County. In agreement, Hagger, Gucciardi and Hamilton (2019) found a positive relationship between implicit self-control and exercise behaviour, and a negative relationship between implicit self-control and impulsive eating, both of which fell marginally short of statistical significance. Trait self-control significantly predicted all behavioural measures and attenuated relations between implicit self-control and health-related behaviour.

On the contrary, Powers, Moshontz and Hoyle (2020) study found that greater self-control did predict lower third-year anxiety, even after accounting for anxiety levels upon entering school. These findings highlight trait self-control as an important predictor of anxiety, and they identify maladaptive affect regulation as a target for interventions to promote student well-being and success.

In exploring the views of the students on their self-control, a Likert scaled itemized questionnaire was used. The items of the questionnaire were indicators of self-control

among secondary school students. The responses were scored using a five-point scale ranging from strongly disagree (1) to strongly agree (5). The scores were averaged to measure the respondents' attitudes on their level of self-control. Their views were summarized in percentage frequencies as shown in Table 16.

Table 16: Ratings on Indicators of Self-Control among the Guided and Counsellled Secondary School Students

TYPE OF ACTIVITY	1	2	3	4	5	MEAN	STD. DEV
I am good at resisting temptation	51 (14.8%)	23 (6.7%)	92 (26.7%)	66 (19.2%)	112 (32.6%)	3.48	1.39
I have a hard time breaking bad habits	131 (38.1%)	47 (13.7%)	65 (18.9%)	49 (14.2%)	52 (15.1%)	2.55	1.49
I am lazy	194 (56.4%)	68 (19.8%)	50 (14.5%)	17 (4.9%)	15 (4.4%)	1.81	1.13
I say inappropriate things	168 (48.8%)	67 (19.5%)	48 (14.0%)	35 (10.2%)	26 (7.6%)	2.08	1.31
I do certain things that are bad for me, if they are fun	124 (36.0%)	47 (13.7%)	59 (17.2%)	51 (14.8%)	63 (18.3%)	2.66	1.53
I refuse things that are bad for me	43 (12.5%)	16 (4.7%)	34 (9.9%)	80 (23.3%)	171 (49.7%)	3.93	1.38
I wish I had more self-discipline	24 (7.0%)	8 (2.3%)	42 (12.2%)	60 (17.4%)	210 (61.0%)	4.23	1.19
People would say that I have iron self-discipline	61 (17.7%)	46 (13.4%)	131 (38.1%)	46 (13.4%)	60 (17.4%)	2.99	1.30
Pleasure and fun sometimes keep me from getting work done	100 (29.1%)	42 (12.2%)	62 (18.0%)	46 (13.4%)	94 (27.3%)	2.98	1.59
I have trouble concentrating	137 (39.8%)	52 (15.1%)	62 (18.0%)	39 (11.3%)	54 (15.7%)	2.48	1.49
I am able to work effectively toward long-term goals	29 (8.4%)	24 (7.0%)	38 (11.0%)	93 (27.0%)	160 (46.5%)	3.96	1.27
Sometimes I can't stop myself from doing something, even if I know it is wrong	95 (27.6%)	59 (17.2%)	57 (16.6%)	48 (14.0%)	85 (24.7%)	2.91	1.55
I often act without thinking through all the alternatives	161 (46.8%)	52 (15.1%)	62 (18.0%)	34 (9.9%)	35 (10.2%)	2.22	1.39
Mean average measure of self-control						2.94	1.38

Key: 5- Strongly agree, 4- Agree, 3-Undecided, 2- Disagree, 1- Strongly disagree and Std. Dev-Standard deviation.

Source: Survey data (2019)

The results of the survey established that there is generally a low level of self-control among the secondary school students in Rongo Sub-County. This was reflected by a low mean rating of 2.94 with a standard deviation of 1.38 on a scale of 1 to 5. This implies that many of the students lack the adequate cognitive ability to manage their emotions and behaviour in the countenance of temptations and impulses to achieve their goals. For instance, although 178 (51.8%) of the sampled students alluded that they are good at resisting temptation, mirrored by a mean rating of 3.48 (SD=1.39), more than one out of every five, 74 (21.5%), of them accepted that they are not good at resisting temptation and 92 (26.7%) of them choose to remain non-committal on the matter. In agreement, King, et al (2011) results indicated that greater self-control problems and attentional problems in the 6th grade and increases in these problems over time were associated with higher levels of substance use in 11th grade. On the contrary, Bruyneel, Dewitte, Franses, and Dekimpe's (2009) study provided more direct evidence that exercising self-control increased reward-seeking behaviour. In addition, Kelley, et al (2019), reported that chronic exertion of self-control may lead to a dysregulated reward system and thereby contribute to outcomes that carry grave costs for individuals and societies, including alcohol and drug addiction, personal debt, obesity, and other undesirable outcomes.

4.5 Hypothesis Testing: Objective 1

H₀1: *There is no statistically significant relationship between self-control and delinquent behaviour modification among secondary school students in Rongo Sub-County.*

In order to test the null hypothesis, a Pearson Product Moment Correlation Coefficient was computed with scores on students' self-control as an independent variable and delinquent behaviour modification as a dependent variable. The scores of the independent variable (students' self-control) were computed from frequencies of responses by computing mean responses per respondent. Mean response across a set of questions of Likert scale responses in each item was computed to create an approximately continuous variable, within an open interval of 1 to 5, that is suitable for the use of parametric methods, as explained by Johnson and Creech (1983) and Sullivan and Artino (2013). This was done after reversing the negatively worded statements, where high scale ratings implied high perceived students'

self-control. Equally, behaviour modification was computed similarly from the student responses on its indicators.

The significant level (p-value) was set at .05, where, if the p-value is less than 0.05, the null hypothesis would be rejected and the conclusion reached that a significant difference exists. However, if the p-value is greater than 0.05, it would be concluded that a significant difference does not exist. Table 17 shows the SPSS output correlation analysis results.

Table 17: *Relationship between Self-Control and Delinquent Behaviour Modification*

		Self-control	Delinquent Behaviour Modification
Self-Control	Pearson Correlation	1	.276**
	Sig. (2-tailed)		.000
	N	344	344
Delinquent Behaviour Modification	Pearson Correlation	.276**	1
	Sig. (2-tailed)	.000	
	N	344	344

** . Correlation is significant at the 0.01 level (2-tailed).

From Table 17, it is evident that there is a statistically significant positive correlation between self-control and delinquent behaviour modification among secondary school students (n=344; r = .276; p<.05). Since the p-value = 0.000 which is far less than 0.05 was established, the null hypothesis was rejected. Therefore, it was concluded that there is a statistically significant positive relationship between self-control and delinquent behaviour modification among secondary school students in Rongo Sub-County, with a high level of self-control and associated with better behaviour modification among secondary school students and vice-versa.

However, to estimate the level of influence of student self-control on behaviour modification among secondary school students, a coefficient of determination was computed using regression analysis. Regression analysis mathematically describes the relationship between independent variables and the dependent variable (Frost, 2020). It

also allows you to predict the mean value of the Dependent Variable. When you specify values for the Independent Values. The result was as shown in Table 18.

Table 18: *Model Summary on Regression Analysis of Self-Control on Delinquent Behaviour Modification among Guided and Counsellled Secondary School Students*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.276 ^a	.076	.074	.29379

a. Predictors: (Constant), Self-Control

The model summary reveals that students' level of self-control accounted for 7.4% (Adjusted $R^2 = .74$) of the variation in their delinquent behaviour modification. This finding indicates that variation in the students' self-control explains about 7% of the variability in delinquent behaviour modification among secondary school students. Although, it is a small influence its impact is significant. Table 19 shows the coefficients values of the regression model of the influence of self-control on delinquent behaviour modification.

Table 19: *Coefficient's Influence of Self-Control on Delinquent Behaviour Modification among Guided and Counsellled Secondary School Students*

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.	95.0% Confidence Interval for B	
	B	Std. Error				Lower Bound	Upper Bound
Constant	2.653	.100		26.557	.000	2.457	2.850
Self-control	.178	.034	.276	5.317	.000	.112	.244

a. Dependent Variable: delinquent Behaviour Modification

$$Y = \alpha + \beta x + \varepsilon$$

$$\text{Behaviour Modification} = 2.653 + .178x + \text{error term.}$$

From the model it is evident that the slope coefficient for student self-control was 0.178 (B=.178), implying that student delinquent behaviour modification improves by this unit for each unit improvement in the level of self-control among the secondary school students.

Similarly, an improvement in self-control by one standard deviation results in an improvement of behaviour modification by .276 standard deviations, as indicated by a standardized beta coefficient of 2.76. Similarly, Oliva, et al (2019) show evidence of associations between self-control and some emotional-behavioural problems and suggest the need for promoting self-control to prevent Internet addiction, substance consumption, and anxiety-depression in adolescents and young adults. Frost (2020) notes that the coefficient reports the relationship between each independent variable and the Dependent Variable.

4.5.1: Findings on the Relationship between Vicarious Experience and Delinquent Behaviour Modification among Secondary School Students

The second research objective was to examine the relationship between the level of vicarious experience and delinquent behaviour modification among secondary school students in Rongo Sub-County. To investigate this objective, first, descriptive statistics were used to investigate the views of the sampled students on their vicarious experience, followed by the use of inferential statistics to test the hypothesis on the relationship between vicarious experience and delinquent behaviour modification.

4.5.2 Level of Vicarious Experience among Secondary School Students

From the qualitative results, there were themes such as help-seeking, role modelling, and copying others' styles.

Theme 1: *Help-Seeking*

Teacher Counsellors' reported that these students, after undergoing counselling, are found to be close to the well-behaved students making them have positive behaviour changes. These are students who have virtues that have been extolled in the course of the counselling and, because of psycho-education, these students take to the behaviour of the well-behaved.

There was this student who was always found in problems and always seeing the deputy principal on issues indiscipline. This boy was referred to the guidance and counselling department and after the counselling sessions, this student was seen to be with students who are positively

perceived in school. This was probably as a result of the psychoeducation on positive and negative peer influence on one's behaviour.” (T. C. 5).

The teacher counsellor further noted that this kind of relationship leads to these delinquent students' modification of their behaviour by unlearning their initial behaviour and learning better behaviours.

Alumni of schools have been useful in this area of vicarious experience. It was reported that there were former delinquent students who come back and help with counselling issues. Mertens, Dekovic, Van Londen and Reitz (2020) in a study in the Netherlands confirm the advantage of using peers to affect adolescents' academic, emotional and social development. A study in India further gives the importance of former students as positive influencers of students' behaviour by reporting that the more students see themselves similar to the successful model you provide, the more confident they will be about doing well on the new task (Behlol, Akbar & Hukamdad, 2019). Mitchel (2021) in a sub-Sahara Africa research, gives a report that supports the positive influence of peer modelling by saying that it is a key and neglected aspect of education quality in the region.

These students give their tales of delinquency in school to the delinquent who then learns from their negative life experiences and decides to modify their behaviour.

A student who was always combative and ready to fight even teachers was eventually able to get good grades. We later brought him to talk to our students about his personal experience when he was a student at our school. He told the students that he is sure that what he did in school, which was negative, may have denied him better grades. This talk to students who were undergoing counselling had a positive impact as some students changed their ways.” (T. C. 3).

A deputy principal reported that there was a negative influence of the town dwellers on the delinquent students who are mostly rural in terms of social background as follows: *“Girls who have been referred for counselling do try to be like their counterparts from urban set-ups. This is more so for those students coming from purely rural set-ups.” (D. P. 2).*

From the interview results, it can be concluded that there is a great deal of learning from others that the delinquent students do engage in as they interact with those from

environments that are different from theirs. Students therefore can be used to effect positive changes in their fellows who are not behaving as expected by society.

Equally, 142 (41.3%) and 99 (28.8%) of the students who participated in the study strongly agreed and agreed, respectively, that when they see their class teachers successfully solve a problem, they always picture themselves solving the problem in the same way. This reflected above moderate vicarious experience, among many of the students, rated at 3.91 (SD=1.28) on a scale of 1 to 5. Only 67 (19.5%) of student respondents disagreed that seeing the class teacher successfully solve a problem, makes them picture themselves as able to solve the problem in the same way. In agreement, Gautreaux (2005) found that teaching middle school students, who had poor or nonexistent repertoires for acquiring new operants by observation, resulted in significantly improved observational repertoires as well as collateral behaviour changes in listening skills. Similarly, Tsiouri and Greer (2003) showed that rapid imitation of observable motor response under conditions in which nonvocal children were under the deprivation of specific and generalized reinforcers led to the emission of first instances of vocal verbal behaviour. On the contrary, Greer and Singer (2004) recently reported that translucent plastic discs, which did not act to reinforce children's performance or learning, acquired reinforcement effects after children observed peers receive the discs and the target children were denied access to the discs. The report showed that neutral stimuli, plastic discs about the size of quarters, were conditioned as generalized reinforcers for performance tasks and reinforcers for acquiring new operants as a result of an observation process.

Theme 2: *Role modelling*

Role modelling is a powerful teaching tool for passing on the knowledge, skills and values of the medical profession, but its net effect on the behaviour of students is often negative rather than positive (Crues & Crues, 2008). A teacher counsellor noted that these delinquent students imitate the behaviours of their role models in school. One had it that the delinquent students imitate the good behaviour of their role models and become better behaved.

A deputy principal said that these delinquent students would find themselves modelling after students that are looked upon in school. They model their lives after these in the belief that they will be like them. These could be students' with either bad or good behaviours depending on these delinquent students' orientation after counselling sessions.

In the process of counselling, our students are exposed to the expected behaviours and those who have what could be good in terms of behaviour are pointed out to these students. After their sessions, it is realized that some of them choose to ape role models in school. (D. P. 6).

From this response, it is evident that role models in school can help with instilling discipline in our learners as the delinquents who have undergone guidance and counselling services report their influence on their behaviour once exposed to them. Several focus group participants talked of having to behave as their role models. She says that having had counselling sessions where she saw herself in a different light, it was necessary to align herself with a girl who is said to be well-behaved to help her change and maintain this.

I discovered that I could be a better-behaved student if I chose to be close to one who is leading an exemplary life in school. This was after going to the guidance and counselling office where I was talked with for some time. (Student, 3, FGD 1C).

This response shows a student who has decided to be around another who is better in terms of behaviour and this could have the impact of leading this student to a modified behaviour. From the qualitative results above interviews, it can be concluded that the delinquent students can be able to discover what their behaviour does to them and have informed change in behaviour. The students may also look up to their role models and even surpass them in terms of being good people in society.

By the same token, the results of the survey established that students learn a lot from their peers. This was revealed by the fact that close to three-quarters of 251 (73.0%) of the students who participated in the study generally agreed that when they see other children

do well in behaviour they get motivated to behave better. In fact, the mean rating of 3.91 with a standard deviation of 1.28 further confirms that there is a fairly strong positive peer influence on student behaviour. Only 59 (17.1%) of them said their behaviour is not influenced by other children's behaviour. Also, 102 (29.7%) and 106 (30.8%) of the students who took part in the study strongly agreed and agreed, respectively, that when they see another student solve a behaviour problem, they always see themselves solving the problem the same way. This was a sign of positive vicarious experience from peers, as further indicated by a mean rating of 3.59 (SD=1.29). Only 71 (20.7%) of respondents denied being influenced by their peers' behaviour insinuating that seeing other students solve a behaviour problem, does not in any way make them able to solve the same problem.

In agreement, Greer and Keohane (2005), showed the acquisition of novel and untaught uses that were induced by observation or indirect contact with the contingencies. Some, or most, incidences of novel and generative language that were previously attributed to innate capacities alone may be a result of both direct and indirect contact with contingencies. On the contrary, Singer-Dudek, Greer and Schmelzkopf's (2008) study showed that the neutral stimuli (strings) did not function to reinforce two participants' responding to a performance task or learning three new skills that were not previously in their repertoires.

Theme 3: *Copying others' styles*

This has mainly to do with the students with low self-esteem and therefore rely on those they see around them. The most copied style of behaviour is that of the town dwellers who are deemed better in behaviour and style.

There have been students who are guided and counselled after which they turn to the well-behaved in order to be able to be helped to be good in school. These are girls who fear that they may not be able to turn into good students without the support of the well-behaved being close to them.
(T. C. 5).

This teacher counselling is saying that the well-behaved students are an asset to the delinquent students in terms of behaviour modification as they support their actions and

reactions after guidance and counselling. There is also the copying of the high performing students who are rewarded. There are those delinquent students who attend and clear their counselling sessions but still go ahead to copy bad behaviour from other students such as stealing and even perfecting them making teachers get to know about the badly behaved fourth formers wrongly guiding them.

A deputy principal said that the delinquent students copy the behaviour of the disciplined and hence be disciplined. Another deputy principal noted that there are both positive and negative influences as they have both peers within and without the school. This deputy principal further mentioned that the out of school peers did influence the delinquent students negatively while those in school were mostly the positive influencers.

I had a girl go for counselling. After this, the student was always seen in the company of some of our well-behaved students. We did not mind as we believed that the student was under the 'care' of these other students and so was on the path to better behaviour. (D. P. 1).

The deputy principal here is giving an example of a student who was guided and counselled after which she now preferred the presence of the well-behaved students and keeping the badly behaved away from them.

From the qualitative results above, it can be concluded that a delinquent student who gets into the company of well-behaved students can have a modification of behaviour. This would be a result of trying to fit in with the group. They also get into this to keep off a repeat of the negative consequences that those who are in the delinquent group could be experiencing.

On vicarious experience from self, the results of the survey show that 158 (45.9%) and 87 (25.3%) of the students who participated in the study strongly agreed and agreed respectively, that they imagine themselves working through challenging behaviour problems successfully which consequently contributes to their behaviour modification. This was mirrored by a mean rating of 3.90 (SD=1.33) on the vicarious experience from self on a scale of 1 to 5. However, 55 (15.9%) of the sampled students deny imagining

themselves working through challenging behaviour problems successfully and 44 (12.8%) of them remained neutral on the matter. In agreement, Farzad et al (2010) revealed that observation of a model with verbal teaching improves learning of the handstand skill, while observation without verbal description does not affect the learning of the skills. On the contrary, Greer and Singer-Dudek, (2008) study showed that discs and strings did not reinforce correct responses in the performance tasks, but the food items did; nor did the discs and strings reinforce correct responses in learning new repertoires.

The results here mirror the earlier research by Zimmermann and Kitsantas (2002) who noted that college students observe a mastery or a coping model displaying writing revision skills and engage in emulation: the control group did not observe a model. Students who observed and emulated the coping model obtained higher self-regulatory writing skills than the other two groups. It, therefore, brings in the importance of modelling. In the case of delinquent students, guidance and counselling enabled them to identify role models who made them modify their behaviour. Cruess and Cruess (2008) indicate that the net effect of role modelling is negative. The results of this study have a positive effect on the students' delinquent behaviour modification after going through guidance and counselling.

Wagler (2011) in his American study reports that enactive mastery experiences did not change the preservice elementary teacher's science teaching efficacy during their field experiences as Bandura's self-efficacy theory proposes. The current study has brought out the predictability of social cognitive factors of delinquent behaviour modification in secondary school students. The variable, in this case, was the vicarious experience of students who had undergone counselling sessions.

Also unique to this study are the findings that variables of student ethnicity, student socioeconomic status and preservice teacher program placement were significant predictors of the preservice elementary teacher's science teaching efficacy during their vicarious experiences (Wagler, 2011). This finding is similar to the current study's finding on the effectiveness of guidance and counselling services in helping delinquent students in modifying their behaviour. Another study, carried out by Kariuki, Kathuku, Owiti, Auka and Kasiri (2016) found a strong relationship between vicarious experience and delinquent

behaviour modification, the Kariuki et al (2016) study found a correlation between vicarious trauma and intrusive recollections of the trauma. This lends credence to the finding from the current study and confirms the strong relationship between vicarious experience and delinquent behaviour modification among students who have been guided and counselled hence a strong case for this service in our public secondary schools.

It also emerged from the results of the survey that some students compete with themselves in behaving well, which is an indication of a positive vicarious experience from self. For instance, 221 (64.2%) of the students who took part in the survey generally agreed that they compete with themselves in behaving well. However, 59 (17.2%) of the students were not sure whether they compete themselves and only 64 (18.6%) of them disagreed. This was further indicated by a mean rating of 3.81 (SD=1.36), showing that there is a moderate positive vicarious experience from self among most of the secondary school students in Rongo Sub-County. In agreement, Weeks (1992) states, the observation of the model leads to improvement in cognitive display and assists the learner to control and regulate motor performance; so the cognitive conception is an important factor for the learner to acquire the complexities of motor performance. On the contrary, Shea *et al* (2000) showed observation of the video game had no significant effect on the game improvement, but practical training lead to significant improvement in game performance.

In investigating the views of the students on their vicarious experience, a Likert scaled itemized questionnaire was used. The items of the questionnaire were indicators of vicarious experience among secondary school students. The vicarious experience was investigated using three areas; adult, peers and self-vicarious experience. The responses were scored using a five-point scale ranging from strongly disagree (1) to strongly agree (5). The scores were averaged to measure the respondents' attitudes on their level of vicarious experience. Their views were summarized in percentage frequencies as shown in Table 20.

Table 20: Views on Vicarious Experience

Items	SD	D	N	A	SA	Mean	STD
Experience from Adults							
Seeing adults behave well pushes me to behave better	17 (4.9%)	14 (4.1%)	31 (9.0%)	64 (18.6%)	218 (63.4%)	4.31	1.11
When I see my class teacher successfully solve a problem, I can picture myself solving the problem in the same way	42 (12.2%)	25 (7.3%)	36 (10.5%)	99 (28.8%)	142 (41.3%)	3.80	1.37
Experience from Peers							
Seeing children do better in behaviour pushes me to do better	29 (8.4%)	30 (8.7%)	34 (9.9%)	101 (29.4%)	150 (43.6%)	3.91	1.28
When I see another student solve a behaviour problem, I can see myself solving the problem the same way	37 (10.8%)	34 (9.9%)	65 (18.9%)	106 (30.8%)	102 (29.7%)	3.59	1.30
Experience from Self							
I imagine myself working through challenging behaviour problems successfully	38 (11.0%)	17 (4.9%)	44 (12.8%)	87 (25.3%)	158 (45.9%)	3.90	1.33
I compete with myself in behaving well	36 (10.5%)	28 (8.1%)	59 (17.2%)	65 (18.9%)	156 (45.3%)	3.81	1.36
Mean average level of vicarious experience						3.88	1.29

Key: 5- Strongly agree, 4- Agree, 3-Undecided, 2- Disagree, 1- Strongly disagree and STD-Standard deviation.

Source: Survey data (2019)

On vicarious experience, the results of the survey reveal that many of the secondary school students in Rongo Sub-County exhibit a fairly strong level of vicarious experience (mean=3.88; SD=1.29). This implies that many of the students derive their knowledge, skill or behaviour from seeing the performance of others in their schools. For instance, at

a mean rating of 4.31 (SD=1.11), most of the students who were sampled for the survey insinuated that they behave well because they see the same in adults. More than four out of every five 282 (82.0%) of the students surveyed agreed that seeing adults behave well pushes them to behave better, only 31 (9.0%) of them remained undecided and some 31 (9.0%) of them disagreed. This finding agreed with Stolfi (2005) who found that an intervention we termed a “yoked peer contingency” also resulted in preschoolers acquiring repertoires of learning new operants from observation. On the contrary, Pereira-Delgado (2005) found that young children with disability diagnoses who could not learn new operants from observation, learned to do so following an intervention that taught them to monitor the accuracy of their peers when the peers were taught new operants. Similarly, Davies-Lackey's (2004) study reported that children who could not learn from observation before in pre-intervention probes learned the correct response from observing their peers in post-intervention probes.

4.6 Hypothesis Testing: Objective 2

H₀2: *There is no statistically significant relationship between vicarious experience and delinquent behaviour modification among secondary school students in Rongo Sub-County.*

To test the null hypothesis, a Pearson Product Moment Correlation Coefficient was computed with scores on students' vicarious experience as an independent variable and behaviour modification as the dependent variable. The scores of the independent variable (vicarious experience) were computed from frequencies of responses by computing mean responses per respondent. Mean response across a set of questions of Likert scale responses in each item was computed to create a continuous variable, within an open interval of 1 to 5, which is suitable for the use of Pearson correlation and regression analysis, as explained by Johnson and Creech (1983) as well as Sullivan and Artino (2013). This was done after reversing the negatively worded statements, where high scale ratings implied high perceived students' vicarious experience. Correspondingly, behaviour modification was computed similarly from the student responses on its indicators.

A significant level (p-value) was set at .05, where, if the p-value is less than 0.05, the null hypothesis would be rejected and the conclusion reached that a significant difference exists. However, if the p-value is greater than 0.05, it would be concluded that a significant difference does not exist. Table 21 shows the SPSS output correlation analysis results.

Table 21: *Relationship between Vicarious Experience and Delinquent Behaviour Modification*

		Vicarious Experience	Behaviour Modification
Vicarious Experience	Pearson Correlation	1	.207**
	Sig. (2-tailed)		.000
	N	344	344
Behaviour Modification	Pearson Correlation	.207**	1
	Sig. (2-tailed)	.000	
	N	344	344

** . Correlation is significant at the 0.01 level (2-tailed).

From Table 21, it is evident that there is a statistically significant positive correlation between vicarious experience and delinquent behaviour modification among secondary school students ($n=344$; $r = .207$; $p < .05$). Since the p-value = 0.000 which is far less than 0.05 was established, the null hypothesis was rejected. Consequently, it was concluded that there is a statistically significant positive relationship between vicarious experience and delinquent behaviour modification among secondary school students in Rongo Sub-County, with a high-level vicarious experience and linked to better delinquent behaviour modification among secondary school students. On the contrary, Sidaway and Hand (1993) showed that observation of the model has no significant effect on the acquisition of this skill.

However, to estimate the level of influence of student vicarious experience on delinquent behaviour modification among secondary school students, a coefficient of determination was computed using regression analysis and the result is shown in Table 22.

Table 22: *Model Summary on Regression Analysis of Vicarious Experience on Delinquent Behaviour among Secondary School Students*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.207 ^a	.043	.040	.29906

a. Predictors: (Constant), Vicarious Experience

Table 22 has a model summary indicating that students' level of vicarious experience accounted for 4.0% (Adjusted R² =.040) of the variation in their delinquent behaviour modification. This finding indicates that 4% of the variability in behaviour modification among secondary school students is due to differences in their level of vicarious experience. It is fairly a small influence, however, it is significant. Table 23 shows the coefficients values of the regression model of the influence of vicarious experience on delinquent behaviour modification.

Table 23: *Coefficient's Influence of Vicarious Experience on Delinquent Behaviour Modification among Guided and Counsellor Secondary School Students*

Model	Unstandardized Coefficients	Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B		
	B	Std. Error	Beta		Lower Bound	Upper Bound	
(Constant)	2.848	.086		33.260	.000	2.680	3.017
1 Vicarious Experience	.085	.022	.207	3.918	.000	.042	.127

a. Dependent Variable: delinquent Behaviour Modification

$$Y = \alpha + \beta x + \varepsilon$$

$$\text{Delinquent Behaviour Modification} = 2.8483 + .085x + \text{error term.}$$

From Table 23's model, the slope coefficient for student vicarious experience is 0.085 (B=.085), suggesting that student behaviour is modified by .085 units for each one unit improvement in the level of vicarious experience among the secondary school students.

Likewise, an improvement in vicarious experience by one standard deviation results in an improvement of delinquent behaviour modification by .207 standard deviations, as indicated by a standardized beta coefficient of .207.

4.6.1 Findings on the Relationship between Rational Attribution and Delinquent Behaviour Modification among Secondary School Students

The third research objective was to examine the relationship between the level of rational attribution and delinquent behaviour modification among secondary school students in Rongo Sub-County. It was investigated by getting views of the sampled students on their rational attribution, followed by the use of inferential statistics to test the hypothesis on the relationship between rational attribution and delinquent behaviour modification.

4.6.2 Level of Rational Attribution among Secondary School Students

The interview and Focus Group Discussion input on the relationship between rational attribution and delinquent behaviour modification among secondary school students had themes such as Opening up and expressing self, positive peer influence, and self-monitoring.

Theme 1: *Opening up and expressing self*

Mather and Goldstein (2013) note that effective communication models where there are values clarification activities, active listening, communication and interpersonal skills training for students and teachers. The students who have gone through guidance and counselling were reported to have been able to open up and express themselves which ends up helping them positively change their behaviour. A teacher counsellor had this to say: *“The students, who were initially withdrawn yet delinquent, have opened up and become expressive and are easy to be helped to better behave as they bring out what ails them instead of misbehaving to be recognized.”* (T. C. 6).

The Deputy Principals also did report that there was a better student in explaining himself and hence keeping off delinquent behaviour that they were having before. One had this:

There is this student who was not able to explain himself before whenever found in problems and would be taken to be a delinquent. After going through guidance and counselling he started talking about his issues and was now a well-behaved student. (D. P. 5)

The focus group discussants also contributed to this theme. They indicated that they found themselves keeping off delinquent behaviour as a result of being open with whatever they have that could end up denting their behaviour in school. A member of one of the groups had this to say: *“Talking about what is happening is important. I learnt this from guidance and counselling to speak out on issues affecting me instead of taking things into my own hands which used to end in mistakes.”* (Student 4, FGD 3 C)

This has made the students modify their delinquent behaviour to be better students. This makes them disciplined. This makes the social cognitive skill a predictor of delinquent behaviour modification. The guidance and counselling service then becomes a good way of helping students be able to modify their delinquent behaviour to be students who can pursue their academics without issues of indiscipline. The current research findings agreed with Rahimi, Hall and Pychyl's (2016) study which reported that, after a negative outcome, procrastination was associated with more moral responsibility, whereas delay was associated with less moral responsibility. On the contrary, Matemba, Awinja, and Otieno (2014) reported that there was no significant relationship between problem-solving approaches and academic performance while gender did not affect problem-solving.

Furthermore, participants' behaviour in our task was linked to the most widely used measure of attribution style. In sum, our findings suggest that positive and negative performance feedback influences the evaluation of task-related stimuli, as predicted by attribution theory. Adinoff, et al (2016) study reported that a decrease in the salience attribution of nondrug reinforcers may explain the positive relationship between IGT performance and post-relapse use.

Equally, as to whether or not something manageable by the students would affect their behaviour modification, only 15 (4.4%) and 22 (6.4%) of them strongly disagreed and disagreed, respectively. On the converse, 155 (45.1%) of them agreed and 117 (34.0%) strongly agreed that something manageable by them would affect their behaviour modification. However, 35 (10.2%) of them were undecided on this matter. This, therefore, means that the majority of the secondary school students hold the opinion that something manageable to them could affect their behaviour modification; a mean rating of 3.98 (SD=1.04) confirms this fact. In agreement, Weiner's (2006) attribution theory, asserts that one's cognitions surrounding the intentionality of an event are presented as conceptually distinct from the emotions that follow. According to Weiner's (2006) attribution theory, individuals' perceptions of personal controllability over an outcome should predict judgments of responsibility that lead to specific emotions and behaviours.

Theme 2: *Positive Peer Influence*

Positive peer pressure is when someone's peers influence them to do something positive or growth building (Padilla-Walker & Bean, 2009). Results from the study had Teacher Counsellors noting how the delinquent students are helped to modify their behaviour through the help of their well-behaved peers.

There was this badly-behaved student who saw it wise to associate with the disciplined students after guidance and counselling sessions. He reported trying to be like this or that student giving such positive attributes of the identified students as good performers, disciplined boys and the like. (T. C. 6).

Here a well-behaved student makes another who is delinquent try to modify the bad behaviour positively. The Deputies also had this theme for the delinquent students. There were indications of delinquent students who, after guidance and counselling, would associate more with the disciplined students for purposes of keeping off issues of indiscipline: *"The delinquent students go through guidance and come out of it with a resolve to befriend students that are not prone to problems."* (D. P. 2).

The students also had this theme of positive peer influence in the Focus Group Discussion. One did say that once bitten twice shy and decided to keep to a group that would make her be on the right side of the school administration: *“I got some knowledge from the teacher counsellor about how my association with the wayward in school affected my behaviour and made me be involved in vices and be a casualty of indiscipline.”* (Student 4, FGD 7A).

This is a student who can modify the delinquent behaviour positively as a result of the intervention by the teacher counsellor.

In the study of Wu, Baker, Tenenbaum and Schulz, (2017) investigating people's ability to infer others' mental states from their emotional reactions, manipulating whether agents wanted, expected, and caused an outcome, participants recovered agents' desires throughout. When the agent caused the event, participants' judgments also depended on the probability of the action (Experiments 3 and 4); when actions were improbable given their mental states, people failed to recover the agent's beliefs even when they saw her react to both the anticipated and actual outcomes.

The Deputies also had this theme for the delinquent students. There were indications of delinquent students who, after guidance and counselling, would associate more with the disciplined students for purposes of keeping off issues of indiscipline: *“The delinquent students go through guidance and come out of it with a resolve to befriend students that are not prone to problems.”* (D. P. 2).

The students also had this theme of positive peer influence in the Focus Group Discussion. One did say that once bitten twice shy and decided to keep to a group that would make her be on the right side of the school administration: *“I got some knowledge from the teacher counsellor about how my association with the wayward in school affected my behaviour and made me be involved in vices and be a casualty of indiscipline.”* (Student, 2, FGD 7A).

This student is appreciative of the source of the positive modification after having been a delinquent.

In the study of Wu, Baker, Tenenbaum and Schulz, (2017) investigating people's ability to infer others' mental states from their emotional reactions, manipulating whether agents

wanted, expected, and caused an outcome, participants recovered agents' desires throughout. When the agent caused the event, participants' judgments also depended on the probability of the action (Experiments 3 and 4); when actions were improbable given their mental states, people failed to recover the agent's beliefs even when they saw her react to both the anticipated and actual outcomes.

Differently, the study revealed that something permanent with them has some effect on their behaviour modification. This was further mirrored by a mean rating of 2.95 and a standard deviation of 1.27. Equally, 79 (23.0%) of the students who participated in the study disagreed that something stable over time caused behaviour modification in them.

However, 100 (29.1%) were undecided, but 165 (48.0%) of these students agreed that something stable over time causes behaviour modification in them. In agreement, Nikbin and Hyun (2017) indicated that both dimensions of causal attribution influenced pre-recovery emotions and negative behavioural intentions and that pre-recovery emotions were significantly related to negative behavioural intentions. In addition, the results verify the mediating effect of pre-recovery emotions on the relationship between causal attribution and behavioural intentions.

On the aspect of something that the students can regulate, the study findings indicate that majority of 230 (66.9%) of the students agreed that what they can regulate influence their behaviour modification, which is supported by the overall mean rating of 3.82 and a standard deviation of 1.05. However, of the remaining respondents, 77 (22.4%) were undecided, while 37 (10.8%) believed that what they can regulate does not affect their behaviour modification. Similarly, when the study sought to find out whether or not something over which others have control causes behaviour modification among the secondary school students, 81 (23.5%) and 76 (22.1%) of them strongly disagreed and disagreed, respectively, while 77 (22.4%) were not sure on this matter. Only 110 (40.0%), a relatively small number, of the students who participated in the study agreed that what others have control over contributes to their behaviour modification. This was consistent with the overall mean rating of 2.73 and a standard deviation of 1.31. On the contrary, Adinoff, et al (2016) study reported that a decrease in the salience attribution of nondrug

reinforcers may explain the positive relationship between IGT performance and post-relapse use. According to Weiner's (2006) attribution theory, individuals' perceptions of personal controllability over an outcome should predict judgments of responsibility that lead to specific emotions and behaviours.

Theme 3: *Self-monitoring*

Another theme that emerged from qualitative results is self-monitoring. Self-monitoring refers to the ability to know when one is performing well and when not (Dembo, 2001). There was a teacher counsellor who mentioned that some of the delinquent students who have undergone guidance and counselling feel the need to modify their behaviour in order to keep off bad behaviour involvement. This teacher counsellor had: "*Students who undergo guidance and counselling feel the need to change as they realize the negative consequences of delinquencies and become more careful in the way they want to behave: want to keep off bad behaviour.*" (T. C. 7)

There was also a response from the Deputies that gave a view of delinquent students' behaviour modification that pointed to self-monitoring. This was about a student who gets correction in the process of guidance and counselling and modifying her behaviour from what the Deputy Principal believes is finding out about the behaviour and seeing the need of changing: "*Correction of bad behaviour leads to change in the way the learner behaves. This in most cases is from the negative to the positive when they are trough with the service.*" (D. P. 2)

The Focus Group Discussions also had this theme coming out. The member who brought out in the discussion indicated having come across this kind of delinquent behaviour modification which was attributed to rational attribution by these students. This was presented as:

This is by keeping one out of trouble. It makes one feel like keeping out of trouble that is bad-behaviour-caused. This acts as a reminder of what needs to be done: good behaviour and keeps one on track in terms of his thought processes. (Student 3, FGD 3C)

From the responses that were got, it is seen that there is some reasoning with the consequences of behaviour as well as the other or opposite behaviour coming in to help the delinquent students with behaviour modification. According to Rubenstein, Freed, Shapero, Fauber, and Alloy (2016), individuals seeking treatment for depression often are struggling with maladaptive cognitions that impact how they view themselves and the world. Research on cognitive attributions that underlie depressed mood focuses on the phenomenon of negative cognitive style, in which depressed people tend to view undesirable occurrences in life as having internal, stable, and global causes. Similarly, Simms (2014) study found a strong relationship between rational attribution and delinquent behaviour modification. All teachers want their learners to be a good influence on others Laura (Padilla-Walker & Bean, 2009). By learning how to encourage positive peer pressure, you can help your child identify when they can be a force for good in their social group. This study revealed that teachers' causal attributions of student problem behaviour are predictive of teachers' intervention preferences. In particular, special education teachers' causal attributions of student problem behaviour are predictive of special education teachers' preference for use of unsupportive interventions. The potential benefits of teacher attribution training were discussed in light of these results.

Contrastingly, the results of the survey show that almost equal proportions of the secondary school students in Rongo Sub-County held conflicting views on their behaviour modification as a result of influence from outside their lives. This was indicated by their response on whether something outside the side of their life would make them modify their behaviour or not, whereas 124 (36.1%) of students accepted they would and another 122 (34.5%) of them disagreed. However, 101 (29.4%) of the respondents remained noncommittal on whether something outside their lives would make them change their behaviour for the better. In agreement, Nikbin and Hyun (2017) indicate that both dimensions of causal attribution influenced pre-recovery emotions and negative

behavioural intentions and that pre-recovery emotions were significantly related to negative behavioural intentions. In addition, the results verify the mediating effect of pre-recovery emotions on the relationship between causal attribution and behavioural intentions.

It also emerged that, as reflected by a mean rating of 2.45 with a standard deviation of 1.38, something under the power of other people results in behaviour modification only in some of the students. Out of all the students who took part in the survey, 118(34.5%) strongly disagreed, 78(22.7%) disagreed while only 85 (24.7%) agreed that something under the power of other people usually makes them modify their behaviour. Similarly, 138 (40.1%) of the students refuted the belief that something that other people regulate contributes to their behaviour modifications. However, 81 (23.5%) of them were undecided but some 125 (36.3%) of them accepted that there are certain things regulated by other people that influence their behaviour modification. From the mean rating of 2.89 and a standard deviation of 1.32, it is evident that there is only a small number of the secondary school students who can modify their behaviour as a result of things that other people control, an indication of low rational attribution among most of the secondary school students in Rongo Sub-County. Similarly, Nikbin and Hyun (2017) indicated that both dimensions of causal attribution influenced pre-recovery emotions and negative behavioural intentions and that pre-recovery emotions were significantly related to negative behavioural intentions. In addition, the results verify the mediating effect of pre-recovery emotions on the relationship between causal attribution and behavioural intentions.

Likewise, further on the influence of self-monitoring, the majority 211 (61.4%) of the students who participated in the study agreed that something that is about them contributes to their behaviour modification. Only 53 (15.4%) of them did not agree that their behaviour is modified due to something from self. This is also consistent with the average response rating of 3.65 (SD=1.16), indicating that something that is about the student plays a significant role in the modification of their behaviours. Concerning the things over which the students have power, the results of the survey revealed that the majority 198 (57.5%) of the students whose views were sought on this matter agreed that something over which they have power contributes to their behaviour modification. On the contrary, while 70

(20.3%) of them were undecided, some 76 (22.1%) of them alluded that something over which they have power cannot influence their behaviour modification. With a mean rating of 3.54 (SD=1.32), it is interpreted that a sizeable proportion of students can modify their behaviour as a result of something over which they have power. In agreement, Korn et al (2016) study reported that attribution theory predicts that participants change their evaluations of the actors' credibility toward the positive after receiving positive performance feedback and toward the negative after negative performance feedback. Furthermore, participants' behaviour in our task was linked to the most widely used measure of attribution style. In sum, our findings suggest that positive and negative performance feedback influences the evaluation of task-related stimuli, as predicted by attribution theory.

On the same note, with the mean rating of 2.48 (SD=1.42), it emerged from the results of the survey that something unchangeable does not cause modification of behaviours of most secondary school students. This was revealed by a majority, 198 (67.6%), of the students who participated in the study who believed that these that are unchangeable do not make them modify their behaviours. Only 95 (27.6%) of the students accepted that sometimes things that they cannot change make them change their behaviour. However, 51 (14.8%) of them were undecided. Similarly, Gilbert and Warburton (2013) confirmed that attributions to abstinence were significantly higher for increased negative experiences, and there were significantly more reattributions than would be found by chance for items associated with smoking abstinence. Significantly more attributions to abstinence were made by clinic attendees and significantly more attributions of negative experiences to abstinence were made by unaided quitters using self-help materials.

In investigating the views of the students on their rational attribution, a Likert scaled itemized questionnaire was used. The items of the questionnaire were indicators of rational attribution among secondary school students. The responses were scored using a five-point scale ranging from strongly disagree (1) to strongly agree (5). The scores were averaged to measure the respondents' attitudes on their level of rational attribution. Their views were summarized in percentage frequencies as shown in Table 24.

Table 24: Views on Rational Attribution

ITEMS	SD	D	N	A	SA	MEAN	STD
That reflects an aspect of yourself	18 (5.2%)	22 (6.4%)	69 (20.1%)	115 (33.4%)	120 (34.9%)	3.86	1.12
Manageable by you	15 (4.4%)	22 (6.4%)	35 (10.2%)	155 (45.1%)	117 (34.0%)	3.98	.05
Permanent	59 (17.2%)	57 (16.6%)	116 (33.7%)	63 (18.3%)	49 (14.2%)	2.96	1.27
You can regulate	12 (3.5%)	25 (7.3%)	77 (22.4%)	129 (37.5%)	101 (29.4%)	3.82	1.05
Over which others have control	81 (23.5%)	76 (22.1%)	77 (22.4%)	76 (22.1%)	34 (9.9%)	2.73	1.31
Outside of you	45 (13.1%)	79 (23.0%)	101 (29.4%)	62 (18.0%)	57 (16.6%)	3.02	1.27
Stable over time	33 (9.6%)	46 (13.4%)	100 (29.1%)	98 (28.5%)	67 (19.5%)	3.35	1.21
Under the power of other people	118 (34.5%)	78 (22.7%)	63 (18.3%)	45 (13.1%)	40 (11.6%)	2.45	1.38
Something about you	24 (7.0%)	29 (8.4%)	80 (23.3%)	122 (35.5%)	89 (25.9%)	3.65	.16
Over which you have power	39 (11.3%)	37 (10.8%)	70 (20.3%)	95 (27.6%)	103 (29.9%)	3.54	1.32
Unchangeable	119 (34.6%)	79 (23.0%)	51 (14.8%)	50 (14.5%)	45 (13.1%)	2.49	1.42
Other people can regulate	72 (20.9%)	66 (19.2%)	81 (23.5%)	83 (24.1%)	42 (12.2%)	3.86	1.12
Mean average level of rational attribution						3.23	1.32

Key: 5- Strongly agree, 4- Agree, 3-Undecided, 2- Disagree, 1- Strongly disagree and STD -Standard deviation.

Source: Survey data (2019)

The results of the study revealed that the level of rational attribution among the students in public secondary schools in Rongo Sub-County is generally moderate, as indicated by an overall mean rating of 3.23, with a standard deviation of 1.32. However, there is a sharp variance in opinion among the students on some of the indicators of rational attribution. For example, on whether something that reflects an aspect of themselves could contribute

to their behaviour modification, 40 (11.6%) of them disagreed, while 115 (33.4%) and 120 (34.9%) agreed and strongly agreed, respectively. This is consistent with the mean rating of 3.86 with a standard deviation of 1.12, which indicates that although the majority of the students agreed that something that reflects an aspect of them contributes to behaviour modification, a respectable proportion of them did not believe in this notion. In agreement, Korn et al (2016) study reported that attribution theory predicts that participants change their evaluations of the actors' credibility toward the positive after receiving positive performance feedback and toward the negative after negative performance feedback.

4.7 Hypothesis Testing: Objective 3

H₀₃: *There is no statistically significant relationship between rational attribution and delinquent behaviour modification among secondary school students in Rongo Sub-County.*

To test the null hypothesis, a Pearson Product Moment Correlation Coefficient was computed with scores on students' rational attribution as the independent variable and delinquent behaviour modification as a dependent variable. The scores of the independent variable (rational attribution) were computed from frequencies of responses by computing mean responses per respondent. Mean response across a set of questions of Likert scale responses in each item was computed to create a continuous variable, which is suitable for the use of Pearson correlation and regression analysis, as explained by Johnson and Creech (1983) as well as Sullivan and Artino (2013). This was done after reversing the negatively worded statements, where high scale ratings implied high perceived students' rational attribution. Similarly, behaviour modification was computed from the student responses on its indicators.

A significant level (p-value) was set at .05, where, if the p-value is less than 0.05, the null hypothesis would be rejected and the conclusion reached that a significant difference exists. However, if the p-value is greater than 0.05, it would be concluded that a significant difference does not exist. Table 25 shows the SPSS output correlation analysis results.

Table 25: *Relationship between Rational Attribution and Delinquent Behaviour Modification*

		Rational Attribution	Behaviour Modification
Rational Attribution	Pearson Correlation	1	.240**
	Sig. (2-tailed)		.000
	N	344	344
Behaviour Modification	Pearson Correlation	.240**	1
	Sig. (2-tailed)	.000	
	N	344	344

** . Correlation is significant at the 0.01 level (2-tailed).

From Table 25 it is evident that there is a statistically significant positive correlation between rational attribution and delinquent behaviour modification among secondary school students ($n=344$; $r = .240$; $p < .05$). Since the p -value = 0.000 which is less than 0.05 was established, the null hypothesis was rejected. Thus, it was concluded that there is a statistically significant positive relationship between rational attribution and behaviour modification among secondary school students in Rongo Sub-County, with an improved level of rational attribution concomitant to higher delinquent behaviour modification among secondary school students. Similarly, Gilbert and Warburton (2013) confirmed that attributions to abstinence were significantly higher for increased negative experiences, and there were significantly more reattributions than would be found by chance for items associated with smoking abstinence. Significantly more attributions to abstinence were made by clinic attendees and significantly more attributions of negative experiences to abstinence were made by unaided quitters using self-help materials.

However, to estimate the magnitude of influence of student rational attribution on delinquent behaviour modification among secondary school students, a coefficient of determination was computed using regression analysis and the result was as shown in Table 26.

Table 26: Model Summary on Regression Analysis of Rational Attribution on Delinquent Behaviour Modification among Secondary School Students

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.240 ^a	.057	.055	.29678

a. Predictors: (Constant), Rational Attribution

Table 26 has a model summary indicating that students' level of rational attribution accounted for 5.5% (Adjusted R² =.055) of the variation in the level of behaviour modification. This finding indicates that about 6% of the variability in delinquent behaviour modification among secondary school students is a result of differences in their level of rational attribution. Table 27 shows the coefficients values of the regression model of the influence of rational attribution on behaviour modification.

Table 27: Coefficients-Influence of Rational Attribution on Delinquent Behaviour Modification of Guided and Counsellled Secondary School Students

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B			
	B	Std. Error	Beta			Lower Bound	Upper Bound	Upper Bound	
1									
	(Constant)	2.628	.121						
	Rational Attribution	.170	.037	.240	4.566	.000	0,97	.244	.127

a. Dependent Variable: delinquent Behaviour Modification

$$Y = \alpha + \beta x + \varepsilon$$

$$\text{Behaviour Modification} = 2.628 + .170x + \text{error term.}$$

From the model in Table 27, the slope coefficient for student rational attribution is 0.170 (B=.170), signifying that student behaviour is modified by .170 units for each one unit improvement in the level of rational attribution among the secondary school students. Equally, an improvement in rational attribution by one standard deviation results in an

improvement of behaviour modification by .240 standard deviations, as indicated by a standardized beta coefficient of .240. According to Rubenstein, Freed, Shapero, Fauber, and Alloy (2016), individuals seeking treatment for depression often are struggling with maladaptive cognitions that impact how they view themselves and the world. Research on cognitive attributions that underlie depressed mood focuses on the phenomenon of negative cognitive style, in which depressed people tend to view undesirable occurrences in life as having internal, stable, and global causes. Similarly, Simms (2014) study found a strong relationship between rational attribution and delinquent behaviour modification. All teachers want their learners to be a good influence on others Laura (Padilla-Walker & Bean, 2009). By learning how to encourage positive peer pressure, you can help your child identify when they can be a force for good in their social group.

This study revealed that teachers' causal attributions of student problem behaviour are predictive of teachers' intervention preferences. In particular, special education teachers' causal attributions of student problem behaviour are predictive of special education teachers' preference for use of unsupportive interventions. The potential benefits of teacher attribution training were discussed in light of these results.

4.7.1 Findings on the Relationship between Inhibition and Delinquent Behaviour Modification among Secondary School Students

The third research objective was to examine the relationship between the level of inhibition and delinquent behaviour modification among secondary school students in Rongo Sub-County. It was investigated by getting views of the sampled students on their inhibition, followed by the use of inferential statistics to test the hypothesis on the relationship between inhibition and delinquent behaviour modification.

4.7.2 Level of Inhibition among Secondary School Students

The common themes that were gotten from the interviews within inhibition included self-regulation, suppression and restraint.

Theme 1: Self-regulation

Self-regulation refers to the control of one's behaviour through the use of self-monitoring, self-evaluation and self-reinforcement (Muraven & Baumeister, 2000). The participants gave responses that the delinquent students did realize that whatever they were involved in was against the regulations in school and decided to avoid these kinds of behaviours. A deputy principal had the following input on this: *"There are cases of delinquent students who have been counselled and have come out of the process as focused individuals very easily changing their behaviour after realising that they made mistakes."* (D. P. 5).

The deputy principal here gives guidance and counselling services a very positive report as this can be used to help the delinquent ones to modify their behaviour. It creates an opportunity for the students to realize their bad aspects of behaviour.

Teacher counsellors also did note this kind of change. One posited that: *"The guided and counselled realize that the kind of behaviour which made them be taken for this service is not important in their lives so they consciously decide to behave better in their lives."* (T. C. 2).

Guidance and counselling help the delinquent students to have a modification of behaviour arising out of control of their behaviours. They can monitor, evaluate and self-reinforce. On self-reinforcement, which is rewarding oneself for appropriate behaviour, there is this input by a teacher counsellor: *"Such students do right things and turn out to be exemplary to other students after undergoing guidance and counselling services."* (T. C. 1)

The Focus Group Discussions did indicate that there are aspects of self-regulation after counselling of the delinquent students leading to behaviour modification. A group member testified thus: *"Understanding the causes of behaviour helps one in changing his behaviour, when you being caught in a mistake then you decide to change your behaviour after being counselled."* (Student 3, FGD 6B).

This discussant talks of the internalization of the causes of delinquency making the student who has modified behaviour become more of one who regulates him or herself. Another item on reinforcement from the Focus Group Discussion was given by a group thus: *"You*

will acquire positive moral virtues. It will lead to a successful life because of being a good person. You can serve as a good role model to others.” (Student 1, FGD 2B).

This excerpt gives the acquisition of virtues initially not with the student as a result of self-regulation. The results here do not support the Bartsch et al (2016) study which suggested that response inhibition training needs to be specific to the target behaviour to be effective. This difference in results could be a result of the fact that the foregoing training was not specific to the target while guidance and counselling in our educational institutions are. However, another study by Todd and Mullan (2013) reported that sleep hygiene behaviours were previously found to be particularly important in this population: avoiding going to bed hungry and thirsty, avoiding anxiety and stress-provoking activity before bed, and making the bedroom and sleep environment restful. Those who completed diary-based self-monitoring successfully avoided anxiety and stress-provoking activity before bed more frequently than control participants, corresponding to a medium effect size, and further development may provide a simple intervention to improve aspects of sleep and other health behaviours.

Theme 2: Suppression

This is the forceful ending or development or expression of an action (APA Dictionary of Psychology). There were several responses given to this variable of behavioural inhibition from the teacher counsellors, deputy principals and the guided and counselled students in the FGDs. Teacher counsellors did give this as a result of the guidance and counselling process among the delinquent students who have gone through it. This was presented in various ways that pointed to the variable. One responded thus: *“Most of them keep off delinquency on learning that it is not right and change to better behaviour after going through the counselling process”* (T. C. 5).

The deputies also had this positive suppression in their responses. One, in bringing out this, said: *“The students who have been referred to the guidance and counselling department keep off the initial offending behaviour and make positive changes instead.”* (D. P. 4).

A deputy principal did give a different opinion on this suppressive effect by saying that: *“Students with low IQ are made to suppress themselves (see themselves as hopeless) so just pretend to change.”* (D. P. 5).

The Focus Group Discussions had their input on this. There was a line that resonated with what most of the teacher counsellors and the deputy principals had mentioned on the positive role of suppression in behaviour inhibition of delinquent students who had been guided and counselled. There was one that mentioned that: *“Understanding the causes of behaviours helps in strengthening my behaviours as from bad to good, avoiding to re-do the mistakes again.”* (Student 5, FGD 7A).

From qualitative results, another theme that emerged was the suppression of bad behaviour. A deputy principal talked of suppression of delinquent behaviour. When this is done for a long time it becomes a habit and the student modifies his behaviour. A focus group had a participant who mentioned that she had to suppress her behaviour after guidance and counselling to become a good student. She claimed to have realized that her behaviour was interfering with her performance and general image in school.

I felt that because I was having a habit that was not seen by the people around me as good, I had to keep off it and try to do what others say is good. This helps me not to get a lot of negative attention for teachers and fellow students. (Student 6, FGD 5C).

Another focus group discussant said:

Enables one to know how to behave when something takes place. Helps the client keep off the possible causes of bad behaviour experienced. Such a person will develop self-control and be able to persevere with challenges he/she experiences. (Student 4, FGD 4B).

Here there is the expected better behaviour for the delinquents whose behaviour has been moderated. They are more controlled and have a good level of guidance on their behaviour. From the interview results above, it can be concluded that people around delinquent

students can have an impact on their behaviour. If these people have the desired behaviour or the delinquent has undergone some awareness in terms of the well-behaved and the badly-behaved then they can have their behaviour modified by this kind of association.

The results here are similar to those from Jones et al (2016) who reported that the effects of ICT on behaviour were comparable to those produced by other psychological interventions, and the effects of ICT on food intake were greater in participants who were attempting to restrict their food intake.

On the same footing, although 188 (54.7%) of the students indicated that they generally don't bear a grudge when something is over because they believe that when it is over they do not need to think about it again, 105 (30.5%) of the students who took part in the survey accepted that they bear a grudge-when something is over and they keep on thinking about it again and again. In fact, although 166 (48.3%) of the students alluded that they often do not find themselves thinking over and over about things that have made them angry, almost a similar proportion 142 (41.3%) of the students were in agreement that they often think over and over about the things that have made them angry.

In agreement, Vanessa, Barbara, and Martin (2016) revealed that the training paradigm adopted, and measurement type influenced the size of the effect such that larger effects were found for studies that employed go/no-go (GNG) training paradigms rather than stop-signal task paradigms, and objective outcome measures that were administered immediately yielded the largest and most consistent effects on behaviour. On contrary, Todd and Mullan (2013) reported that there was no incremental effect of response inhibition training.

Theme 3: *Restraint*

This is an inhibition construct that generally refers to the measures that restrict the freedom of movement of an individual and comprises various types of restraints (Busch & Shore, 2000). Negroni (2017) further explain restraint to be therapeutic regimes or programmes which involve the withholding of privileges and participation in activities. This is said to include constantly telling that person not to do something, or that doing what they want is

not allowed, or is too dangerous. The respondents and participants did present their input on this variously. Just like the responses to the other question items on these variables of the main concepts in social cognitive factors, they were in some cases given in similar rather than direct terms.

Teacher counsellors gave their input here and the running theme in their responses was a positive relationship between the restraint aspect of behaviour inhibition and behaviour modification. One noted that:

This is seen a lot and an example is a student who gets into drugs because of being idle. Once he is informed about the danger of idleness, keeps off this and in essence, becomes a better-behaved student. (T. C. 3).

This teacher counsellor is creating an awareness of the help that can be given by the information about delinquent behaviour which ends up making the student involved be able to keep off it.

Another teacher counsellor adds that: *“There is usually some positive behaviour change as a result of understanding the cause of their behaviour. They can avoid and make a change in behaviour”* (T. C. 1).

This brings in the issue of the place of understanding in enabling delinquents to have a positive modification of behaviour.

Deputy principals’ responses did majorly support this observation on restraint and behaviour modification as given by the Teacher Counsellors. An example is: *“The parents are involved and such students even come back to learn”* (D. P. 4).

This means that parents’ involvement can help the student develop restraint towards delinquency. Another still did mentions that: *“The involvement of the teacher counsellor makes the students avoid the bad behaviour for which they have been referred for these services.”* (D. P. 6).

This is a case of a teacher counsellor actively coming in to help the student avoid that which is delinquent and therefore should be avoided.

A Focus Group Discussion had this to say about restraint and behaviour modification among delinquent students who have been counselled: *“Getting to understand the cause of bad behaviour helps one who has undergone guidance and counselling not to repeat these bad behaviours.* (Student 5, FGD 6A).

Other focus group discussants opine that: *“When the cause of bad behaviour is known, the student will always try to go the right way to keep off bad behaviour: keep off regrets which come out of bad behaviour.* (Student, 1, FGD 4A).

The cause of delinquent behaviour here creates a deterrent to keeping in this and makes this student keep off. *“Knowing the cause of bad behaviour makes me avoid the causes of misbehaviour as much as possible.”* (Student 5, FGD 3C).

This student participant stresses this already mentioned point about the importance of knowing and therefore working a point of knowledge: *“By understanding causes of bad behaviours it helps in avoiding doing wrong things and it helps me know the type of behaviour: if it is bad I will know what to do and if it is right then I must maintain it.* (Student 6, FGD 2D).

This discussant talks of the deterrent nature of knowing the cause and hence keeping off this and being a well-behaved student.

Another still did say: *“Understanding the causes of behaviours help in strengthening my behaviours as from bad to good, avoiding to re-do the mistakes again”* (Student 5, FGD 7A).

This statement gives the idea of a student who has been aided by the knowledge of bad behaviour into avoidance of the same, an active reaction out of the awareness in the student.

The foregoing responses do agree with the research carried out by Tobin and Sugai (2005) which indicated statistically significant differences between the groups based on the type of intervention received in the Self-Control subscale of the Social Skills Rating System. Gresham and Elliott (1990) further supported by these results, stated that school-wide positive behaviour support is an effective primary prevention intervention, even for young

children with serious internalizing or externalizing behaviour problems. Similarly, Walker et al (2014) study showed that behavioural inhibition was positively associated with displayed social withdrawal and negatively associated with assertive behaviour during the observed social exclusion task at 7 years of age.

In addition, Vanessa, Barbara, and Martin (2016) also agreed that a small but homogeneous effect of training on behaviour was found, leading to the conclusion that these results suggest that GNG inhibitory control training paradigms can influence health behaviour, but perhaps only in the short-term. This is another support of the positive relationship found in this study of the suppression variable of inhibition and behaviour modification among secondary school students in Rongo Sub-County. There was a weak link though in the relationship, compared with the other constructs of social cognitive skills, just as is realized in the Vanessa, Barbara, and Martin (2016) study which concluded that inhibitory control training paradigms can influence health behaviour, but perhaps only in the short-term.

In investigating the views of the students on their level of inhibition, a Likert scaled itemized questionnaire was used. The items on the questionnaire were indicators of inhibition among secondary school students. The responses were scored using a five-point scale ranging from strongly disagree (1) to strongly agree (5). The scores were averaged to measure the respondents' attitudes on their level of inhibition. Their views were summarized in percentage frequencies as shown in Table 28.

Table 28: Views on Inhibition

ITEM	SD	D	N	A	SA	MEAN	STD
When someone upset me, I try to hide my feelings	74 (21.5%)	36 (10.5%)	51 (14.5%)	92 (26.7%)	91 (26.5%)	3.26	1.49
I remember things that upset or make me angry for a long time	59 (17.2%)	77 (22.4%)	55 (16.0%)	75 (21.8%)	78 (22.7%)	3.11	0.63
People find it difficult to tell whether I am excited about something or not	65 (18.9%)	60 (17.4%)	75 (21.8%)	75 (21.8%)	69 (20.1%)	3.07	1.40
I find it difficult to comfort people who have been upset	55 (16.0%)	76 (22.1%)	82 (23.8%)	67 (19.5%)	64 (20.1%)	3.03	1.34
I generally don't bear a grudge-when something is over, it's over and don't think about it again	76 (22.1%)	29 (8.4%)	51 (14.8%)	56 (16.3%)	132 (38.4%)	3.40	1.58
When something upsets me I prefer to talk to someone about than to bottle it up	38 (11.0%)	52 (15.1%)	36 (10.5%)	78 (22.7%)	140 (40.7%)	3.67	1.42
I get "worked up" just thinking about things that have upset me in the past	93 (27.0%)	76 (22.1%)	62 (18.0%)	53 (15.4%)	60 (17.4%)	2.74	1.45
If I receive bad news in front of others I usually try to hide how I feel	37 (10.8%)	35 (10.2%)	58 (16.9%)	102 (29.7%)	112 (32.6%)	3.63	1.32
I seldom show how I feel about things	42 (12.2%)	54 (15.7%)	96 (27.9%)	87 (25.3%)	65 (18.9%)	3.23	1.27
I often find myself thinking over and over about things that have made me angry	76 (22.1%)	90 (26.2%)	36 (10.5%)	67 (19.5%)	75 (21.8%)	2.93	1.49
If I am pleasantly surprised, I show immediately how pleased I am	25 (7.3%)	29 (8.4%)	72 (20.8%)	85 (24.7%)	133 (38.7%)	3.79	1.24

If get angry or upset I usually say how I feel	58 (16.9%)	66 (19.2%)	74 (21.5%)	81 (23.5%)	65 (18.9%)	3.08	1.36
I can usually settle things quickly and be friendly after an argument	37 (10.8%)	30 (8.7%)	58 (16.9%)	80 (23.3%)	139 (40.4%)	3.74	1.35
I don't feel embarrassed about expressing my feeling	53 (15.4%)	52 (15.1%)	49 (14.2%)	80 (23.3%)	110 (32.0%)	3.41	1.45
If I see or hear about an accident, I find myself thinking about something similar happening to me or to people close to me.	47 (13.7%)	33 (9.6%)	49 (14.2%)	74 (21.5%)	141 (41.0%)	3.67	1.44
I think about ways of getting back to people who have made me angry after the event has happened	63 (18.3%)	41 (11.9%)	58 (16.9%)	114 (33.1%)	68 (19.8%)	3.24	1.39
I never forget about people making me angry or upset me, even if the event has occurred	102 (29.7%)	73 (21.2%)	51 (14.8%)	60 (17.4%)	58 (16.9%)	2.71	1.47
I think people show their feelings too easily.	53 (15.4%)	51 (14.8%)	144 (41.9%)	55 (16.0%)	41 (11.9%)	2.94	1.18
I find it hard to get thoughts about things that have upset me out of my mind.	42 (12.2%)	79 (23.0%)	73 (21.2%)	71 (20.6%)	79 (23.0%)	3.19	1.35
I often daydream about situations where I am getting my own back at people.	75 (21.8%)	56 (16.3%)	68 (19.8%)	76 (22.1%)	69 (20.1%)	3.02	1.44
Expressing my feelings makes me feel very vulnerable and anxious.	41 (11.9%)	48 (14.0%)	101 (29.4%)	94 (27.3%)	60 (17.4%)	3.24	1.24
If I see something that frightens or upsets me, the	51 (14.8%)	54 (15.7%)	54 (15.7%)	85 (24.7%)	100 (29.1%)	3.38	1.42

image of it stays in my mind for a long time afterwards.							
Thinking about upsetting things just seems to keep them going, so I try to put them out of my mind.	39 (11.3%)	43 (12.5%)	51 (14.8%)	114 (33.1%)	97 (28.2%)	3.54	1.32
I usually manage to remain outwardly calm, even though I may churned up inside.	51 (14.8%)	56 (16.3%)	75 (21.8%)	80 (23.3%)	82 (23.8%)	3.25	1.37
If I lose out on something, I get over it quickly	36 (10.5%)	60 (17.4%)	95 (27.6%)	86 (25.0%)	67 (19.5%)	3.26	1.25
I can't help showing how I feel, even when it isn't	60 (17.4%)	58 (28.5%)	98 (28.5%)	69 (20.1%)	59 (17.2%)	3.03	1.33
If I have to confront someone, I try not to think too much about it beforehand	40 (11.6%)	49 (14.2%)	70 (20.3%)	102 (29.7%)	83 (24.1%)	3.40	1.31
Sometimes I just can't control my feelings.	62 (18.0%)	68 (19.8%)	49 (14.2%)	68 (19.8%)	97 (28.2%)	3.20	1.49
Mean average level of students' inhibition						3.26	1.35

Key: 5- Strongly agree, 4- Agree, 3-Undecided, 2- Disagree, 1- Strongly disagree and Std. Dev-Standard deviation.

Source: Survey data (2019)

The results of the survey as shown in Table 28 revealed that the secondary school students in Rongo Sub-County exhibit a moderate level of inhibition, as reflected by a mean rating of 3.26 (SD=1.35). This implies that although some students nurse some feeling of embarrassment or worry that prevents them from saying or doing what they would wish to do or say, some of them do not suffer any guilt for doing or saying inappropriate things. For example, when the sampled students were asked how they feel when they get upset by someone, although slightly more than a half 193 (53.2%) of them alluded that they always try to hide their feelings, but about one out of every three 110 (32.2%) of the students who were surveyed indicated that when someone upsets them, it is not easy for them to hide their feelings.

This finding reveals slightly more than average inhibition feeling among the students, as reflected by a mean rating of 3.26 (SD=1.49), implying that they do not suffer any serious guilt for doing or saying inappropriate things. In agreement, Jones and Field (2013) demonstrated that participants who completed a Stop Signal task in which alcohol images were paired with inhibition subsequently consumed less alcohol than a group of participants in whom inhibition was paired with neutral cues. On the contrary, Allom and colleagues found that this relationship was not statistically significant.

Equally, the students were asked whether or not they remember things that upset or make them angry for a long time. The results of the study reveal a mean response rating of 3.10 (SD=0.63) which indicates that the difference between the number of those agreeing and those disagreeing was fairly small. Thus, whereas 153 (44.5%) of the students agreed that they keep on remembering things that upset or make them angry for a long time, 136 (39.6%) of others alluded that they hardly keep on remembering things that upset or make them angry for a long time. In addition, although 175 (50.9%) of the students alluded that they sometimes forget about people who have made them angry, 118 (34.3%) of them indicated that they never forget them. However, 51 (14.8%) of the students did not say their position on this matter. Similarly, at a rating of 3.19 (SD=1.34) the results of the study established that some students can not completely forget upsetting circumstances.

This was revealed by 150 (43.6%) of the students who agreed that it is hard to get off their minds things that have upset them. Only 121 (35.2%) of the sampled students alluded that it is easy for them to get rid of thoughts about things that have upset them, with 73 (21.2%) others remaining non-committal on the matter. On contrary, Di Lemma and Field (2017) reported that neither intervention affected performance on the IAT, nor changes in reaction time did not suggest the formation of robust alcohol avoidance (CAT) or alcohol inhibition (ICT) associations after training.

In regards to how the students handle things that upset them, the study findings reveal that although the majority of students in public secondary schools in Rongo Sub-County prefer to talk to someone about things that upset them than bottle them up, others prefer suffering alone, as indicated by a mean response rate of 3.66 (SD=1.42). The majority 218 (63.4%)

of the respondents agreed that when something upsets them they would rather share it with someone than keep it to themselves, but some 90 (25.1%) of respondents said they hardly share with someone about things that upsets them. Furthermore, the results of the study revealed that the majority of 182 (52.9%) of the surveyed students agreed that they think about ways of getting back to people who have made them angry after the event has happened. Only 104 (30.2%) of them said they never think about ways of getting back to people who have made them angry after the event has happened, translating to an inhibition level of 3.24 (SD=1.38). In agreement, Bowley, et al (2013) study reported that while there were no significant changes in implicit beer-related cognitions following training, a trending positive relationship between implicit beer-related cognitions at post-training and taste test consumption was reported.

Conversely, it emerged that some students get “worked up” just thinking about things that have upset them. This was interpreted from a mean response rate of 2.74 (SD=1.44), with 169 (49.1%), 113 (32.8%) and 62 (18.0%) of the students who took part in the survey agreeing, disagreeing and remaining undecided, respectively, on whether they get “worked up” just thinking about things that had upset them in the past. Likewise, the findings of the study show that although many students try, they find it difficult to hide their feelings when they receive bad news. This was confirmed by a mean rating of 3.63, with a majority of 214 (62.3%) of the students who took part in the survey accepting that if they receive bad news in front of others they usually try to hide how they feel, but more than a fifth 72 (21.0%) of the respondents said it is not easy for them to hide how they feel when they receive bad news in front of others.

However, some 58 (16.9%) of the students did not divulge how they handle their feelings when they receive bad information in front of other students. In agreement, Guerrieri, Nederkoorn, Schrooten, Martijn, and Jansen (2009) demonstrated decreased food intake following a manipulation that primed inhibitory control compared to a manipulation that primed impulsive behaviour. However, in this study, there was no control condition, which makes it impossible to determine whether both the impulsivity and the inhibition manipulation effectively influenced food intake relative to baseline.

In regards to whether the students feel embarrassed about expressing their feeling, the results of the survey established that this was not the case for most of the secondary school students in Rongo Sub-County. For instance, more than one out of two 190 (55.3%) of the sampled students confirmed that they never get embarrassed about expressing their feelings, which translates to an inhibition scale of 3.42 (SD=1.45), implying that a sizeable of them do not suffer any guilt of doing or saying inappropriate things. Only 105 (30.5%) of the students accepted that they get embarrassed about expressing their feeling. On the other hand, 154 (44.7%) of the students held a general view that expressing their feelings openly makes them feel very vulnerable and anxious, translating to a response rate of 3.24 (SD=1.24) reflecting a moderate level of inhibition. In agreement, Jones and Field (2013) demonstrated that participants who completed a Stop Signal task in which alcohol images were paired with inhibition subsequently consumed less alcohol than a group of participants in whom inhibition was paired with neutral cues.

On a similar footing, the study established that even though many of the students rarely show how they feel about certain things, others openly display their feelings. With a mean rating of 3.23 and a standard deviation of 1.27, many 152 (44.2%) of the students agree that they hardly ever show how they feel about things, but 96 (27.9%) of the respondents insinuated that they always openly show their feelings on certain things to other people. Conversely, 96 (27.9%) of the students who participated in the study remained noncommittal on whether or not they openly displayed their feelings. However, on the same note, it emerged from the findings of the study that most of the students in public secondary schools in Rongo Sub-County are divided in their opinions on whether they can help show how they feel especially when it is not appropriate. Out of the students who took part in the survey, 69 (20.1%) and 59 (17.2%) of them agreed and strongly agreed, respectively, that they cannot avoid showing how they feel, even when it is not appropriate to do so. On the other side, 60 (17.4%) and 58 (16.8%) strongly refuted and refuted, respectively, the claim that many students cannot help showing how they feel even when it is improper. In agreement, Vanessa, Barbara, and Martin (2016) revealed that the training paradigm adopted, and measurement type influenced the size of the effect such that larger effects were found for studies that employed go/no-go (GNG) training paradigms rather

than stop-signal task paradigms, and objective outcome measures that were administered immediately yielded the largest and most consistent effects on behaviour. However, Guerrieri et al. (2009) reported that it is highly unlikely that priming inhibition will induce long-term effects on both inhibitory abilities and eating behaviour.

On the other hand, what came out clearly from the findings of the study was the fact that the majority (mean=3.79) of the students openly show when they are pleasantly surprised. This was demonstrated by a majority of 214 translating to 63.4% of the students who took part in the survey who asserted that if they get pleasantly surprised they immediately show how pleased they are. However, 72 (20.8%) of the students did not commit their thoughts on this matter, but only 54 (15.7%) of the students alluded that they rarely show how pleased they are even if they are pleasantly surprised. Equally, at a mean rate of 3.08 (SD=1.34), although 124 (35.1%) of the students refuted the claim that if they get angry or upset they usually say how they feel, 146 (42.4%) others accepted that they always say how they feel if they get angry or upset by something no matter what. Similarly, Houben (2011) reported that the inhibition manipulation decreased food consumption in participants with low levels of inhibitory control to the same level of food intake as that of participants with high levels of inhibitory control. Conversely, the impulsivity manipulation increased food intake in participants with high levels of inhibitory control to the level of consumption of participants with low levels of inhibitory control.

On the level of excitement, the results of the survey established that almost equal proportions of students openly show or do not show at all when they are excited about something. For example, 125 (36.3%) of the respondents said it is easy to tell when they get or do not get excited about something, while 150 (41.9%) of them said it is difficult to tell whether they are excited about something or not. Only 75 (21.8%) of them were undecided. Further, a mean rating of 3.07 with a standard deviation of 1.39, confirms that the respondents were divided in their opinions on how they display their excitement but a slight majority of the students were able to conceal their level of excitement. In contrast, 96 (27.9%) of the students held a general feeling that some people show their feelings too easily, however, 106 (30.2%) of the students did think people show their feelings too easily, they thought those who show their feelings were justified. However, 144 (41.9%) of the

students were not sure about this matter. On contrary, Bartsch, et al (2016) reported that participants in the inhibition condition did not have lower levels of alcohol consumption, nor improved response inhibition after the intervention, compared to participants in the active control condition. It is suggested that response inhibition training needs to be specific to the target behaviour to be effective; however, that training did not.

On comforting others, the survey results indicate that whereas some students find it fairly difficult to comfort other people who have been upset, for the others it's quite easy comforting others. This was reflected by 131 (38.1%), 131 (38.1%) and 82 (23.8%) of the students who participated in the study who agreed, disagreed and were undecided, respectively, that they find it difficult to comfort people who have been upset. The generated a mean response rating of 3.03 (SD=1.34) indicates a moderate level of inhibition among the students. It emerged from the results of the study that a significant majority 219 (63.7%) of the students who took part in the study are able to settle things quickly and be friends after an argument. This was mirrored by an inhibition rating scale of 3.74 (SD=1.35), with only 67 (19.5%) of the students insisting that they hardly settle things quickly and can never be friendly to another person after an argument. Likewise, 153 (44.5%) of the students affirmed that if they lose out on something, they get over it quickly, which translates to an inhibition rating of 3.25 (SD=1.25). In agreement, Jones and Field (2013) demonstrated that participants who completed a Stop Signal task in which alcohol images were paired with inhibition subsequently consumed less alcohol than a group of participants in whom inhibition was paired with neutral cues.

The findings of the study revealed that most the secondary school students suffer bad memory after witnessing the horrific scene. For instance, 215 (62.5%) of sampled students acknowledged that if they see or hear about an accident, they always find themselves thinking about something similar happening to them or people close to them. This translated to a mean response rate of 3.67 with a standard deviation of 1.44, reflecting a fairly high level of inhibition. Only about 80 (23.3%) of the students who took part in the survey alluded that even if they witness an accident or hear its occurrence, it does not always disturb them that it may occur to them or a person close to them. However, 49 (14.2%) of the students did open up on their feelings after witnessing an accident. In

agreement, Jones and Field (2013) demonstrated that participants who completed a Stop Signal task in which alcohol images were paired with inhibition subsequently consumed less alcohol than a group of participants in whom inhibition was paired with neutral cues.

By the same token, it surfaced from the results of the survey that some students always daydream. This was interpreted from a mean response rate of 3.02 (SD=1.44), with 145 (42.2%) of sampled students accepting that they often daydream about situations. Only 75 (21.8%) of the students strongly insisted that they never daydream about situations, but 68 (19.8%) of the students remained reserved on this matter. Equally, the study findings show that a sizeable proportion of 185 (53.8%) of the students who took part in the survey insinuated that if they see something that frightens or upsets them, the image of it stays in their minds for a long time afterwards. However, 105 (30.5%) of the students said no image of anything that frightens or upsets them stays in their mind, even if they see something that frightens or upsets them. Similarly, Walker, Henderson, Degnan, Penela and Fox, (2014) study showed that behavioural inhibition was positively associated with displayed social withdrawal and negatively associated with assertive behaviour during the observed social exclusion task at 7 years of age.

Conversely, many 211 (51.3%) of students were of the general opinion that thinking about upsetting things just keeps them going, so they try to put them out of their minds. Only 81 (23.8%) of them held a contrary opinion, but 51 (14.8%) of them remained evasive on the issue, reflecting a mean response of 3.54, indicating a fairly strong level of inhibition. As a way of managing upsetting situations, it emerged that some 162 (47.1%) of the students usually cope with the state of affairs by remaining outwardly calm, even though they may be churned up inside. In agreement, Jones, et al (2016) reported that the magnitude of the effect of ICT on behaviour was predicted by the proportion of successful inhibitions but was unrelated to the absolute number of trials in which appetitive cues were paired with the requirement to inhibit, or the contingency between appetitive cues and the requirement to inhibit.

Lastly, the results of the study reveal that quite a significant proportion of secondary school students on many occasions indulge in a confrontational situation before thinking about it.

This was reflected by a mean rating of 3.40 (SD=1.31), with 185 (53.8%) of the students agreeing while 89 (25.8%) of them disagreeing that if they have to confront someone, they never think too much about it beforehand. On the same note, although 130 (37.8%) of the students disagreed, 165 (48.0%) of them agreed that sometimes they just cannot control their feelings. This indicates that a sizeable proportion of the students do not suffer any guilt of doing or saying inappropriate things. On contrary, Bartsch, *et al* (2016) reported that participants in the inhibition condition did not have lower levels of alcohol consumption, nor improved response inhibition after the intervention, compared to participants in the active control condition. It is suggested that response inhibition training needs to be specific to the target behaviour to be effective; however, that training did not.

4.8: Hypothesis Testing: Objective 4

H₀4: *There is no statistically significant relationship between inhibition and delinquent behaviour modification among secondary school students in Rongo Sub-County.*

In order to test the null hypothesis, a Pearson Product Moment Correlation Coefficient was computed with scores on students' inhibition as the independent variable and delinquent behaviour modification as the dependent variable. The scores of the independent variable were computed from the frequencies of responses. Mean response across a set of questions of Likert scale responses in each item was computed to create a continuous variable, which is suitable for the use of Pearson correlation and regression analysis, as explained by Johnson and Creech (1983) and Sullivan and Artino (2013). This was done after reversing the negatively worded statements, where high scale ratings implied high perceived students' inhibition. Similarly, behaviour modification was computed similarly from the student responses on its indicators.

A significant level (p-value) was set at .05, where, if the p-value is less than 0.05, the null hypothesis would be rejected and the conclusion reached that a significant difference exists. However, if the p-value is greater than 0.05, it would be concluded that a significant difference does not exist. Table 29 shows the SPSS output correlation analysis results.

Table 29: *Relationship between Inhibition and Delinquent Behaviour Modification*

		Inhibition	Behaviour Modification
Inhibition	Pearson Correlation	1	.190**
	Sig. (2-tailed)		.000
	N	344	344
Behaviour Modification	Pearson Correlation	.190**	1
	Sig. (2-tailed)	.000	
	N	344	344

** . Correlation is significant at the 0.01 level (2-tailed).

From Table 29, it is evident that there is a statistically significant positive correlation between inhibition and delinquent behaviour modification among secondary school students ($n=344$; $r = .190$; $p<.05$). Since the p -value = 0.000 which is less than 0.05 was established, the null hypothesis was rejected. Thus, it was concluded that there is a statistically significant positive relationship between inhibition and delinquent behaviour modification among secondary school students in Rongo Sub-County, with an improved level of inhibition related to higher delinquent behaviour modification among secondary school students. In agreement, Jones and Field (2013) demonstrated that participants who completed a Stop Signal task in which alcohol images were paired with inhibition subsequently consumed less alcohol than a group of participants in whom inhibition was paired with neutral cues. However, to estimate the magnitude of influence of student inhibition on delinquent behaviour modification among secondary school students, a coefficient of determination was computed using regression analysis and the result was as shown in Table 30.

Table 30: *Model Summary on Regression Analysis of Inhibition on Delinquent Behaviour Modification among Guided and Counselling Secondary School Students*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.190 ^a	.036	.033	.30014

a. Predictors: (Constant), Inhibition

The model summary indicates that students' level of inhibition accounted for 3.3% (Adjusted $R^2 = .033$) of the variation in the level of delinquent behaviour modification. This finding points out that only about 3% of the variability in student delinquent behaviour modification among the secondary school in Rongo Sub-County is a result of differences in their level of inhibition. Table 31 shows the coefficients values of the regression model of the influence of inhibition on delinquent behaviour modification.

Table 31: *Coefficients-Influence of Inhibition on Delinquent Behaviour Modification among Guided and Counselling Secondary School Students*

Model	Unstandardized		Standardized		T	Sig.	95.0% Confidence	
	Coefficients		Coefficients				Interval for B	
	B	Std. Error Beta					Lower Bound	Upper Bound
(Constant)	2.880	.085			33.900	.000	2.713	3.047
Inhibition	.077	.022	.190		3.573	.000	.035	.120

a. Dependent Variable: Behaviour Modification

$$Y = \alpha + \beta x + \varepsilon$$

$$\text{Behaviour Modification} = 2.880 + .077x + \text{error term.}$$

From the model, the slope coefficient for student inhibition is 0.077 (B=.077), signifying that student behaviour is modified by .077 units for each one unit improvement in the level of inhibition among the secondary school students. Equally, an improvement in inhibition by one standard deviation results in improvement of delinquent behaviour modification by .190 standard deviations, as indicated by a standardized beta coefficient of .190. The foregoing responses agree with Tobin and Sugai (2005) who indicated statistically significant differences ($p < .01$) between the groups based on the type of intervention received in the Self-Control subscale of the *Social Skills Rating System*. Gresham and Elliott (1990) further supported by these results, stated that School-wide Positive Behaviour Support is an effective primary prevention intervention, even for young children with serious internalizing or externalizing behaviour problems. Similarly, Walker et al (2014) study showed that behavioural inhibition was positively associated with displayed

social withdrawal and negatively associated with assertive behaviour during the observed social exclusion task at 7 years of age.

4.9: Behaviour Modification Scale

The study sought to investigate the levels of behaviour modification of secondary schools students in Rongo Sub-County. This was necessary because it was the dependent variable of the study. The student behaviour modification was interpreted from the summation of their characteristics as exhibited in indicators of behaviour after going through counselling services. The sampled students were provided with questionnaires with indicators of behaviour modification and were asked to rate their behaviour in regard to these characteristics. Their responses were summarized in frequency percentages, means and standard deviation as shown in Table 32.

Table 32: *Behaviour Modification Scale*

Item	SD	D	U	A	SA	Mean	Std. Dev.
I don't think I have had much behaviour problems of late	55 (16.0%)	54 (15.7%)	68 (19.8%)	85 (24.7%)	82 (23.8%)	3.25	1.39
I am trying to have less of behaviour problems than before	33 (9.6%)	24 (7.0%)	61 (17.7%)	133 (38.7%)	93 (27.0%)	3.67	1.22
I find myself in behavioural issues but sometimes they are too much	79 (23.0%)	87 (25.3%)	58 (16.8%)	73 (21.2%)	47 (13%)	2.77	1.37
Sometimes I think I should reduce my behaviour problems	27 (7.8%)	42 (12.2%)	45 (13.1%)	134 (39.0%)	96 (23.0%)	3.67	1.22
It's a waste of time thinking about my behaviour problems	124 (36.0%)	86 (25.0%)	44 (12.8%)	51 (14.8%)	39 (11.3%)	2.40	1.39

I have just recently changed my behaviours	39 (11.3%)	40 (11.6%)	76 (22.1%)	110 (32.0%)	79 (23.0%)	3.44	1.27
Anyone can talk of wanting to do something about behaviour issues, but I am actually doing something about it	37 (10.8%)	41 (11.9%)	76 (22.1%)	107 (31.1%)	83 (24.1%)	3.46	1.27
I am at the stage where I should think about having less of behaviour problems	22 (6.4%)	37 (10.8%)	35 (10.2%)	130 (37.8%)	120 (34.9%)	3.84	1.20
My behaviour is a problem sometimes	73 (21.2%)	65 (18.9%)	67 (19.5%)	67 (19.5%)	72 (20.9%)	3.00	1.44
There is no need for me to think about changing my behaviour	172 (50.0%)	86 (25%)	35 (10.2%)	28 (8.1%)	23 (6.7%)	1.97	1.24
I am actually changing my behaviour	28 (8.1%)	25 (7.3%)	70 (20.3%)	108 (31.4%)	113 (32.8%)	3.74	1.22
Behaving better would be pointless for me.	197 (57.3%)	58 (16.9%)	24 (7.0%)	20 (5.8%)	45 (13.1%)	2.01	1.44
Mean average behaviour modification rating						3.10	1.31

Key: 5- Strongly agree, 4- Agree, 3-Undecided, 2- Disagree, 1- Strongly disagree and Std. Dev-Standard deviation.

Source: Survey data (2019)

The finding of the study shows that most of the students had faced behaviour problems, as reflected by a mean rating of 3.10 and a standard deviation of 1.31. This was shown by 167 (48.5%) of sampled students who accepted that they had some behaviour problems in the recent past. However, 109 (31.7%) of the students who participated in the study alluded that they believe that they have not had many behaviour problems in the recent past, but

68 (19.8%) of them were undecided. This implies that the majority of secondary schools students have experienced some element of behaviour problems in the recent past.

Likewise, the results of the survey indicate that although a majority of the secondary school students in Rongo Sub-County rarely get involved in problems related to delinquent behaviours, a sizeable proportion of them always find themselves in behaviour-related problems. This was revealed by a mean rating of 2.77 (SD=1.37), with 120 (34.9%) of the students who took part in the survey accepted that they always find themselves with behavioural problems. The majority 166 (48.3%) of them alluded that they hardly ever find themselves in behavioural problems, but some 58 (16.8%) of them were uncertain on this matter.

Suffice, 139 (40.4%) of the students accepted that their behaviour is a problem sometimes, 138 (40.1%) disagreed and 67 (19.5%) were undecided. The mean response rating is 3.00 and the standard deviation is 1.44, indicating that the number of students in public secondary schools in Rongo Sub-County who personally think that their behaviour is a problem sometimes over-weighs the number of those who think their behaviours are not a problem.

However, the majority of the students believe it's important for them to think about their behaviour problems. This was reflected by 124 (36.3%) and 86 (25.0%) of the students who strongly disagreed and disagreed, respectively, with the researcher's assertion that it is waste of time thinking about behaviour problems. On the contrary, some 80 (26.1%) of the sampled students accepted that they feel like it's a waste of time thinking about their behaviour problems, but 44 (12.8%) of them remained non-committal on their thoughts about their behaviour problems. This was interpreted by a mean rating of 2.40 with a standard deviation of 1.39.

Despite the finding, the majority 226 (65.7%) of the students accepted that they always try to have less of behaviour problems than before, but 57 (15.6%) of students denied they were making some effort to adjust their behaviour. However, 61 (17.7%) of the sampled students were noncommittal about whether or not they are making some effort to adjust

their behaviour. This was confirmed by a mean of 3.67 and a standard deviation of 1.22. Equally, a majority 230 (62.0%) of the students accepted that sometimes they think they should reduce their behaviour problems. This was shown by a mean rating of 3.67 with a standard deviation of 1.22. Only 69 (20.0%) of the students denied that they every so often think that they should reduce their behaviour problems and 45 (13.1%) of them who remained undecided, held a contrary opinion.

In addition, a larger section of the students who were surveyed was not satisfied with their behaviour to the extent that they held the general opinion that there is a need for them to think about changing their behaviour. This finding was confirmed by a mean rating of 1.97 with a standard deviation of 1.24 on the item, "I personally feel like there is no need for me to think about changing my behaviour", where 172 (50.0%) and 86 (25.0%) of the students strongly disagreed and disagreed, respectively, to the statement. Only 51 (14.8%) of the students alluded that they were contented with their behaviour and believed that they did not need to think about changing it, but 35 (10.2%) of them remained undecided. The results of the survey, therefore, show that majority of students in public secondary schools in Rongo Sub-County personally feel like there is no need for them to think about changing their behaviour.

Similarly, it emerged from the results of the survey that many of the students in secondary schools in Migori County had just recently changed their behaviours. This was mirrored by a mean rating of 3.35 and a standard deviation of 1.27, with 189 (55.0%) of the students pointing out that they had changed their behaviours. Merely 79 (22.9%) of them accepted that they had not changed their behaviours in the recent past and 76 (22.1%) others were not sure whether they had changed their behaviours or not in the recent past.

It emerged that the majority of the students in public secondary schools in Rongo Sub-County are in agreement that the thought of wanting to do something about behaviour issues and actualizing the thought are always two different things, as indicated by a mean of 3.46 (SD=1.27). Nevertheless, more than one out of every two 190 (55.2%) of the students who participated in the study argued that they do something about their behaviour. They insisted that although some students just talk of wanting to do something about their

delinquent behaviour, , they for a fact do something about it. However, 78 (22.7%) of the students disagreed and another 76 (22.1%) of them were undecided on the statement.

In fact, the results of the survey show that many of the students in public secondary schools in Rongo Sub-County were at the point of believing that they were modifying their delinquent behaviours. This was reflected by 108 (31.4%) and 113 (32.8%) of the students who agreed and strongly agreed, respectively, that they were, in reality, modifying their delinquent behaviours. In addition, a mean rating of 3.74 and a standard deviation of 1.22 reveals that most students personally think that they are actually modifying their delinquent behaviours. Only 53 (15.4%) of them disagreed, while 70(20.3%) others were undecided.

On the contrary, further findings of the survey reveal that a respectable proportion of the students who took part in the survey are at the stage where they have less delinquent behaviours. This was inferred from the mean rating of 3.84 (SD=1.20) and the response of 120 (34.9%) and 130 (37.8%) of the students who participated in the study who strongly agreed and agreed respectively, that they personally think that they are at the stage where they should think of having only a few of delinquent behaviours. Only 59(17.2%) of them held a contrary opinion, while 35 (10.2%) were undecided.

On the flip flop, it emerged that although the majority of the students in Rongo Sub-County believe that it's important to behave well, some of them hold a contrary opinion that behaving well does not add value to them. This was confirmed by that fact despite a majority of 197 (57.3%) and 58 (16.9%) of the students strongly disagreed and disagreed, respectively, with the assertion that behaving better would be pointless for them, 65 (18.8%) responded in affirmative. However, a mean rating of 2.01 and a standard deviation of 1.44 indicates that the majority of students in public secondary schools in Rongo Sub-County reject the statement that behaving well would be pointless for them.

4.10: Multiple Regression Analysis

The study sought to establish a linear model that could be used to describe the optimal level of behaviour modification among students in public schools regarding their social cognitive skills. This was done by use of standard multiple regression analysis, where all the four

aspects of social cognitive skills were factored in the model at once. It was suitable because it could help to investigate how well the set of the independent variables was able to predict the level of behaviour modification among students in public schools, in line with the recommendations by Oso and Onen (2009). The analysis provided information about the relative contribution of aspects of social cognitive skills that make up the model. Each variable was evaluated in terms of its predictive power, over and above that offered by all the other independent variables. It enabled the researcher to know how much unique variance in behaviour modification, each of the aspects of social cognitive skills explained. Table 33 shows the regression analysis model summary output.

Table 33: *Regression Analysis Model Summary Output: Social Cognitive Skills on Delinquent Behaviour Modification*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.408 ^a	.166	.157	.28032

a. Predictors: (Constant), Inhibition , Self-Control, Rational Attribution , Vicarious Experience

In the model summary, the “R” column represents the value of *R*, the multiple correlation coefficients. It is a measure of the quality of the prediction of behaviour modification by social cognitive skills among the students. The value of .408 indicates a fairly weak level of prediction. However, the value of Adjusted R Square (.157) indicates how much of the variance in the behaviour modification was explained by factors of social cognitive skills. This value expressed as a percentage means that the model explains 15.7 per cent of the variance in behaviour modification. This is the proportion of variance in the behaviour modification that is explained by the four predictor variables of social cognitive skills. It is the proportion of variation accounted for by the regression model above and beyond the mean model.

4.10.1: Evaluating Contribution of each of the Predictors

The study sought to investigate the level of contribution of the individual aspects of social cognitive skills factored in the model in the prediction of behaviour modification among secondary school students. This was shown by coefficient values in Table 34.

Table 34: Coefficient Output: Social Cognitive Skills on Delinquent Behaviour Modification

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	1.882	.162		11.619	.000	1.563	2.200
Self-Control	.184	.032	.286	5.696	.000	.121	.248
Vicarious Experience	.088	.072	.214	1.209	.000	-.055	.230
Rational Attribution	.130	.036	.183	3.608	.000	.059	.201
Inhibition	.002	.072	.008	.022	.000	.143	.140

a. Dependent Variable: Behaviour Modification

A regression model for the relationship between these independent variables and the dependent variable is shown below.

$$\text{In this model: } Y = B_0 + B_1 X_1 + B_2 X_2 + B_3 X_3 + B_4 X_4 + \epsilon.$$

Where: Y is Behaviour Modification

X₁ Self-Control

X₂ Vicarious Experience

X₃ Rational Attribution

X₄ Inhibition

Optimum level of behaviour modification among the secondary school students was presented by:

$$1.882 + .184X_1\text{units} + .088X_2\text{ units} + .130X_3\text{units} + .002X_4\text{units} + \text{error term}$$

The model shows that the constant value of the model is 1.882 with a confidence interval of (1.563, 2.200), implying most students will present about 1.882 units of behaviour modification before factoring in their level of social cognitive skills. However, it is evident that the aspects of social cognitive skills contributed differently to influencing behaviour modification among secondary school students. For example, student self-control had the highest impact on behaviour modification, while inhibition made the least contribution in

explaining the variability of the model when all the independents are put together. The variable “self-control.” had the largest beta coefficient of .286 ($p < .05$), implying that it made the strongest unique contribution to explaining the dependent variable. This means that a one standard deviation improvement in student self-control leads to a .286 standard deviation increase in behaviour modification, with the other variables held constant.

On the contrary, the beta value for inhibition was the lowest at .008, indicating that it made the least contribution to the model; a one standard deviation increase in inhibition would only lead to a .008 standard deviation increase in behaviour modification, with the other variables in the model held constant, however, this effect was also significant ($p = .982$). However, from the model, it was noted that all the independent variables made a statistically significant ($p < .05$) unique contribution to the equation.

It was noted that the total R squared value for the model (.157 or 15.7 explained variance) did not equal the sum of the R Squared for each variable. This was because the part correlation values represented only the unique contribution of each aspect of social cognitive skills, with any overlap or shared variance removed.

The total R squared value, however, included the unique variance explained by each aspect of social cognitive skills and also that shared. The predictors were positively correlated (shown by zero-order correlations) hence there was a lot of shared variance that was statistically removed when they were all included in the model.

Given that only one predictor did not have a unique significant change in the model, it is concluded that the model was adequate to predict behaviour modification among secondary school students. The model was statistically significant [$F(4, 339) = 16.928$, Adjusted $R^2 = .157$, sig. $< .05$], implying it was adequate to predict the dependent variable. However, this finding indicates that only 15.7% of the variability in behaviour modification among secondary school students is explained by social cognitive skills. However, it is worth noting that the R-squared does not necessarily indicate if a regression model provides an adequate fit to a data set, implying that a good model can have a low R^2 value. On the other hand, a biased model can have a high R^2 value.

Hence, regression models with low R-squared values can be perfectly good models. For instance, this field of study had an inherently greater amount of unexplainable variation given that the respondents were given self-administering questionnaires whose items sought their views which were bound to differ. Hence, R^2 values are bound to be lower for this kind of study. Nonetheless, despite the low R-squared value, the independent variables are statistically significant, therefore important conclusions about the relationships between the variables could still be drawn from the study. Statistically, significant coefficients continue to represent the mean change in the dependent variable given a one-unit shift in the independent variable.

However, other factors (not covered in this regression model) also accounted for a part of 84% of the model which was not explained by variables factored in the model. The other possible factors that may influence behaviour modification but are not included in the study could include other explanatory variables, moderating effects and extraneous variables whose effects were not completely excluded. In addition, Vanessa, Barbara, and Martin (2016) also agreed that a small but homogeneous effect of training on behaviour was found, leading to the conclusions that these results suggest that GNG inhibitory control training paradigms can influence health behaviour, but perhaps only in the short-term. This is another support of the positive relationship found in this study of suppression variable of inhibition and behaviour modification among secondary school students in Rongo Sub-County. There was a weak link though in the relationship, compared with the other constructs of social cognitive skills, just as is realized in the Vanessa, Barbara, and Martin (2016) study which concluded that inhibitory control training paradigms can influence health behaviour, but perhaps only in the short-term.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a summary of the findings. It discusses key points of the research hypotheses and makes conclusions and recommendations. The chapter also makes suggestions for further research.

5.2 Summary of Findings

5.2.1 Relationship between Self-control and Delinquent Behaviour Modification among Students in Public Secondary Schools

The first objective was to examine the relationship between Self-control and Delinquent Behaviour Modification among students in public secondary schools in Rongo Sub County of Migori County in Kenya.

From the findings of the study, the delinquent students modified their behaviour after the guidance and counselling intervention. They were able to behave better and this makes self-control a predictor of delinquent behaviour modification. The expectation would be that individuals with lower levels of self-control are likely to perceive more control over their delinquent behaviour. These students are helped with their delinquent behaviour modification through the guidance and counselling services hence we can safely associate their delinquent behaviour modification with the acquired social cognitive skills from the provided service. The current research findings do give a strong relationship between self-control and delinquent behaviour modification among students in public secondary schools.

5.2.2 Relationship between Vicarious Experience and Delinquent Behaviour Modification among Students in Public Secondary Schools

The second research objective was to examine the relationship between the level of vicarious experience and delinquent behaviour modification among students in public secondary schools in Rongo Sub-County. The findings on this objective were that vicarious

experience is important in delinquent behaviour modification in secondary schools. In the case of delinquent students, guidance and counselling enabled them to identify role models who made them modify their delinquent behaviour.

The current study has brought out the predictability of social cognitive factors of delinquent behaviour modification among students in public secondary schools. The variable, in this case, was the vicarious experience of students who had undergone counselling sessions. There is credence to the finding from the current study and confirms the strong relationship between vicarious experience and delinquent behaviour modification among students who have been guidance and counselling hence a strong case for this service in our public secondary schools.

5.2.3 Relationship between Rational Attribution and Delinquent Behaviour Modification among Students in Public Secondary Schools

The third research objective was to examine the relationship between rational attribution and delinquent modification among secondary school students in Rongo Sub-County. The results of the study revealed that there is a statistically significant positive correlation between rational attribution and behaviour modification among secondary school students ($n=344$; $r = .240$; $p<.05$). Thus, it was concluded that there is a statistically significant positive relationship between rational attribution and behaviour modification among secondary school students in Rongo Sub-County, with an improved level of rational attribution concomitant to higher behaviour modification among secondary school students. Therefore, it was concluded that although the influence is small, there is a statistically significant influence of rational attribution on behaviour modification among secondary school students. This suggests that secondary school students with high-level rational attribution are likely to demonstrate high behaviour modification and vice-versa.

5.2.4 Relationship between Inhibition and Delinquent Behaviour Modification Students in Public Secondary Schools

The fourth research objective was to examine the relationship between inhibition and behaviour modification among secondary school students in Rongo Sub-County. It is

evident from the study that there is a statistically significant positive correlation between inhibition and behaviour modification among secondary school students ($n=344$; $r = .190$; $p<.05$). Thus, it was concluded that there is a statistically significant positive relationship between inhibition and behaviour modification among secondary school students in Rongo Sub-County, with an improved level of inhibition related to higher behaviour modification among secondary school students. Therefore, it was concluded that although the influence is small, there is a statistically significant influence of inhibition on behaviour modification among secondary school students. This suggests that secondary school students with high-level inhibition are likely to exhibit high behaviour modification. The common themes that were gotten from the interviews included self-regulation, suppression, and restraint. All of these brought out positive relationships among the participants.

5.3 Conclusions

5.3.1 Self-control and Delinquent Behaviour Modification among Students in Public Secondary Schools

There is a statistically significant positive correlation between self-control and delinquent behaviour modification among secondary school students. It is evident that the slope coefficient for student self-control was 0.178 ($B=.178$), implying that student delinquent behaviour modification improves by this number of units for each unit improvement in the level of self-control among the secondary school students. Similarly, an improvement in self-control by one standard deviation results in improvement of behaviour modification by .276 standard deviations, as indicated by a standardized beta coefficient of 2.76.

5.3.2 Vicarious Experience and Delinquent Behaviour Modification among Students in Public Secondary Schools

There is a statistically significant positive relationship between vicarious experience and delinquent behaviour modification among secondary school students. The slope coefficient for student vicarious experience is 0.085 ($B=.085$), suggesting that student behaviour is modified by .085 units for each unit improvement in the level of vicarious experience among the secondary school students. Likewise, an improvement in vicarious experience by one standard deviation results in an improvement of delinquent behaviour modification by .207 standard deviations, as indicated by a standardized beta coefficient of .207.

5.3.3 Rational Attribution and Delinquent Behaviour Modification among Students in Public Secondary Schools

There is a statistically significant positive relationship between rational attribution and behaviour modification among secondary school students. From the model, the slope coefficient for student rational attribution is 0.170 ($B=.170$), signifying that student delinquent behaviour is modified by .170 units for each one unit improvement in the level of rational attribution among the secondary school students. Equally, an improvement in rational attribution by one standard deviation results in an improvement of behaviour modification by .240 standard deviations, as indicated by a standardized beta coefficient of .240.

5.3.4 Inhibition and Delinquent Behaviour Modification among Students in Public Secondary Schools

There is a statistically significant positive relationship between inhibition and delinquent behaviour modification among students in public secondary schools in Rongo Sub-County, with an improved level of inhibition related to higher delinquent behaviour modification among students in public secondary schools. From the model, the slope coefficient for student inhibition is 0.077 ($B=.077$), signifying that delinquent behaviour modification among students in public secondary schools is modified by .077 units for each one unit improvement in the level of inhibition among the secondary school students. Equally, an improvement in inhibition by one standard deviation results in an improvement of delinquent behaviour modification by .190 standard deviations, as indicated by a standardized beta coefficient of .190.

In conclusion, it is evident that the aspects of social cognitive skills contributed differently to influencing delinquent behaviour modification among secondary school students. For example, student self-control had the highest impact on delinquent behaviour modification, while inhibition made the least contribution in explaining the variability of the model when all the independents are put together. The variable “self-control.” had the largest beta coefficient implying that it made the strongest unique contribution to explaining the dependent variable. This means that a one standard deviation improvement in student self-control leads to a .286 standard deviation increase in delinquent behaviour modification,

with the other variables held constant. On the contrary, the beta value for inhibition was the lowest at .008, indicating that it made the least contribution to the model; a one standard deviation increase in inhibition would only lead to a .008 standard deviation increase in delinquent behaviour modification, with the other variables in the model held constant, however, this effect was also significant ($p=.982$).

5.4 Recommendations

Based on the conclusions and discussions, the following recommendations were made:

- (i) The teacher counsellors should train students on self-control to assist them in appropriate behaviour modification. This is because the study reported that self-control had the largest beta coefficient implying that it made the strongest unique contribution to explaining the delinquent behaviour modification among students in public secondary schools.
- (ii) The teacher counsellors should use person centred counselling techniques to enhance inhibition among students in public secondary schools. This is because the study reported that there is a significant positive relationship between inhibition and delinquent behaviour modification among secondary school students in Rongo Sub-County, with an improved level of inhibition related to higher delinquent behaviour modification among secondary school students.
- (iii) Principals should be proactive in the provision of guidance and counselling services to delinquent students in public secondary schools in order to instil discipline in them. This means providing the necessary support to the Department of Guidance and Counselling in schools.
- (iv) The education office should mount awareness programmes for Parents' Associations on how to provide better home environments to help the teacher counsellors with their work on delinquent behaviour modification students in public secondary schools.
- (v) The Ministry of Education to help principals in schools through workshops or seminars on behavioural development of students. This is because the study

reported that there is a significant positive relationship between vicarious experience and delinquent behaviour modification among students in public secondary schools.

5.5 Suggestions for Further Research

It is recommended that further studies be carried out so as to further delve into the following issues:

- (i) Differences in school category and delinquent behaviour modification among students in public secondary schools.
- (ii) Gender differences in delinquent behaviour modification among students in public secondary schools.
- (iii) Personality traits and their influence on delinquent behaviour modification among students in public secondary schools.
- (iv) Strategies of enhancing delinquent behaviour modification among students in public secondary schools.

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APPENDIX A: LETTER OF INTRODUCTION

TOM K. O. ONYANGO

JARAMOGI OGINGA

ODINGA UNIVERSITY OF

SCIENCE AND TECHNOLOGY

Dear Sir/Madam

TO WHOM IT MAY CONCERN

I, Tom K. O. Onyango, of JOOUST undertaking a Ph.D. study would appreciate your cooperation in helping me get the relevant data for my work.

The information so gathered will be used only for the research study and nothing more.

Your confidentiality is assured in this respect.

I hope you will be able to provide me with the needed information to make this study a success.

Yours faithfully,

Tom K. Omondi Onyango

Ph.D Student

APPENDIX B: UNIVERSITY LETTER OF INTRODUCTION



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY
BOARD OF POSTGRADUATE STUDIES
Office of the Director

Tel. 057-2501804
Email: bps@jooust.ac.ke

P.O. BOX 210 - 40601
BONDO

Our Ref: E361/4492/2013

Date: 24th February 2020

TO WHOM IT MAY CONCERN

RE: TOM K. O. ONYANGO – E361/4492/2013

The above person is a bona fide postgraduate student of Jaramogi Oginga Odinga University of Science and Technology in the School of Education pursuing a PhD in Guidance and Counseling. He has been authorized by the University to undertake research on the topic: *“Social Cognitive Skills as a Predictor of Delinquent Behaviour Modification among Students in Public Secondary Schools in Kenya”*.

Any assistance accorded to him shall be appreciated.

Thank you.



Prof. Dennis Ochuodho

DIRECTOR, BOARD OF POSTGRADUATE STUDIES

APPENDIX C: NACOSTI RESEARCH LICENSE



REPUBLIC OF KENYA



**NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION**

Ref No: 692360

Date of Issue: 28/March

RESEARCH LICENSE



This is to Certify that Mr. TOM OMONDI ONYANGO of Jaramogi Oginga Odinga University of Science and Technology has been licensed to conduct research in Migori on the topic: SOCIAL COGNITIVE SKILLS AS A PREDICTOR OF BEHAVIOUR MODIFICATION AMONG STUDENTS IN PUBLIC SECONDARY SCHOOLS IN KIambu County. License No: 692360. Date of Issue: 28/March 2021.

License No: NACOSTI/P/20/4475

692360

Applicant Identification Number

**Director General
NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY &
INNOVATION**

Verification QR Code



NOTE: This is a computer generated license. To verify the authenticity of this license, please scan the QR code using an OR scanner application.

APPENDIX D: COUNTY ADMINISTRATION RESEARCH AUTHORIZATION

THE REPUBLIC OF KENYA
MINISTRY OF INTERIOR AND COORDINATION OF
NATIONAL AFFAIRS



OFFICE OF THE

SECRETARY

W I I

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TO WHOM IT MAY CONCERN

RE RESEARCH AUTHORIZATION

'social cognitive skills as predictor of delinquent behavior modification among students in public secondary schools in Kenya in Rongu subcounty Migori County


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MIGORI COUNTY

APENDIX E: COUNTY EDUCATION OFFICE AUTHORIZATION



MINISTRY OF EDUCATION


Eliza

**COUNTY DIRECTOR
MINISTRY OF EDUCATION
MIGORI COUNTY
466-40400, MIGORI**

APPENDIX F: INFORMED CONSENT LETTER

Dear Respondent,

I am a doctoral student pursuing a degree in the school of education in the department of counselling psychology at JOOUST on “Social Cognitive Skills as a Predictor of Delinquent Behaviour Modification among Students in Public Secondary Schools of Rongo Sub-County”.

The study intends to seek your permission to participate and fill in the questionnaire/respond to the interview items in the study. The study has no security risks and you have a right not to participate or to withdraw at any stage of filling in the questionnaire. You are requested to provide relevant and accurate data which may help in attaining the intended goal of the study.

I request you to voluntarily participate in filling in the questionnaire/respond to the interview items. Kindly answer the questions carefully and honestly. You are assured that the data you give will be treated with confidentiality and strictly for the study. I will be glad for your participation.

Agree to Do not agree

Yours faithfully,

Tom K. Omondi Onyango

Ph.D Candidate

JOOUST University

APPENDIX G: SOCIAL COGNITIVE SKILLS QUESTIONNAIRE FOR STUDENTS

SECTION I. BIOGRAPHICAL DETAILS

Age: _____ **Gender:** Male _____ Female _____ **Class:** _____

School Category: National _____ Extra County _____ County _____ Sub-County _____

SECTION II. SELF-CONTROL SCALE

Using the 1 to 5 scale below, please indicate how much each of the following statements how typically are: Not at all Very much

1 2 3 4 5

	TYPE OF ACTIVITY	1	2	3	4	5
1.	I am good at resisting temptation					
2.	I have a hard time breaking bad habits					
3.	I am lazy					
4.	I say inappropriate things					
5.	I do certain things that are bad for me, if they are fun					
6.	I refuse things that are bad for me					
7.	I wish I had more self-discipline					
8.	people would say that I have iron self-discipline					
9.	pleasure and fun sometimes keep me from getting work done					
10.	I have trouble concentrating					
11.	I am able to work effectively toward long-term goals					
12.	sometimes I can't stop myself from doing something, even if I know it is wrong					
13.	I often act without thinking through all the alternatives					

SECTION III. VICARIOUS EXPERIENCE SCALE

S. NO.	Items	SA	A	N	D	SD
	Vicarious Experience from Adults					
1.	Seeing adults behave well pushes me to behave better					
2.	When I see my class teacher successfully solve a problem, I can picture myself solving the problem in the same way					
	Vicarious Experience from Peers					
3.	Seeing children do better in behaviour pushes me to do better					
4.	When I see another student solve a behaviour problem, I can see myself solving the problem the same way					
	Vicarious Experience from Self					
5.	I imagine myself working through challenging behaviour problems successfully					
6.	I compete with myself in behaving well					

SECTION IV. RATIONAL ATTRIBUTION SCALE

INSTRUCTIONS:

The items below concern your impressions or opinions of the cause or causes of your behaviour. Circle appropriate response, either SA, A, N, D or SD for each of the following items.

Is this cause (s) something:

S. NO.	Items	SA	A	N	D	SD			
1.	That reflects an aspect of yourself								
2.	Manageable by you								
3.	Permanent								
4.	You can regulate								
5.	Over which others have control								
6.	Outside of you								
7.	Stable over time								
8.	Under the power of other people								
9.	Something about you								
11.	Unchangeable								
12.	Other people can regulate								

SECTION V. INHIBITION SCALE

Instructions:

Please indicate how you feel about each item by circling **either** “Strongly Agree” (SA), “Agree” (A), “Neutral” (N), “Disagree” (D) *or* “Strongly Disagree” (SD).

<i>S</i> <i>NO</i>	ITEMS	SA	A	N	D	SD
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1	When someone upsets me, I try to hide my feelings.					
2	I remember things that upset me or make me angry for a long time.					
3	People find it difficult to tell whether I am excited about something or not.					
4	I find it difficult to comfort people who have been upset.					
5	I generally don't bear a grudge – when something is over, it's over, and I don't think about it again.					
6	When something upsets me I prefer to talk to someone about it than to bottle it up.					
7	I get “worked up” just thinking about things that have upset me in the past.					
8	If I received bad news in front of others I usually try to hide how I feel.					
9	I seldom show how I feel about things.					
10	I often find myself thinking over and over about things that have made me angry.					
11	If I am pleasantly surprised, I show immediately how pleased I am.					
12	If I get angry or upset I usually say how I feel.					
13	I can usually settle things quickly and be friendly again after an argument.					
14	I don't feel embarrassed about expressing my feelings.					

15	If I see or hear about an accident, I find myself thinking about something similar happening to me or to people close to me.					
16	I think about ways of getting back at people who have made me angry long after the event has happened.					
17	I never forget people making me angry or upset, even about small things.					
18	I think people show their feelings too easily.					
19	I find it hard to get thoughts about things that have upset me out of my mind.					
20	I often daydream about situations where I am getting my own back at people.					
21	Expressing my feelings makes me feel very vulnerable and anxious.					
22	If I see something that frightens or upsets me, the image of it stays in my mind for a long time afterwards.					
23	Thinking about upsetting things just seems to keep them going, so I try to put them out of my mind.					
24	I usually manage to remain outwardly calm, even though I may churned up inside.					
25	If I lose out on something, I get over it quickly.					
26	I can't help showing how I feel, even when it isn't appropriate to do so.					
27	If I have to confront someone, I try not to think too much about it beforehand.					

28	Sometimes I just can't control my feelings.					
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SECTION VI. BEHAVIOUR MODIFICATION SCALE

The following questionnaire is designed to identify how you *personally* feel about your behaviour right now. Please read each of the questions below carefully, and then decide whether you agree or disagree with the statements: Strongly Disagree (SD), Disagree (D), Unsure (U), Agree (A) and Strongly (SA) Please tick the answer of your choice to each question. Your answers are completely private and confidential.

S. NO	Item	SD	D	U	A	SA
1.	I don't think I have had much behaviour problems of late					
2.	I am trying to have less of behaviour problems than before					
3.	I find myself in behavioural issues but sometimes they are too much					
4.	Sometimes I think I should reduce my behaviour problems					
5.	It's a waste of time thinking about my behaviour problems					
6.	I have just recently changed my behaviours					
7.	Anyone can talk of wanting to do something about behaviour issues, but I am actually doing something about it					
8.	I am at the stage where I should think about having less of behaviour problems					
9.	My behaviour is a problem sometimes					

10.	There is no need for me to think about changing my behaviour					
11.	I am actually changing my behaviour					
12.	Behaving better would be pointless for me.					

APPENDIX H: FOCUS GROUP DISCUSSION GUIDE FOR STUDENTS

FOCUS GROUP DISCUSSION GUIDE

SECTION I. BIOGRAPHICAL DETAILS

Designation: _____ Age _____ Gender _____

School Category: National _____ Extra County _____ County _____ Sub-County _____

SECTION II. SCHEDULE ITEMS

1. In what ways does self-control influence behaviour modification of students who have undergone counselling?

How does learning from others influence behaviour modification of students who have undergone counselling?
2. How does slowing of bad behaviour influence behaviour modification of students who have undergone counselling?
3. In what ways does understanding causes of behaviour influence behaviour modification among students who have undergone counselling?

**APPENDIX I: INTERVIEW SCHEDULE FOR TEACHER COUNSELLORS AND
THE DEPUTY PRINCIPALS**

SECTION I. BIOGRAPHICAL DETAILS

Designation: _____ Gender _____

School Category: National ____ Extra County ____ County ____ Sub-County ____

SECTION II. SCHEDULE ITEMS

1. In what ways does self-control influence behaviour modification of students who have undergone counselling?
2. How does learning from others influence behaviour modification of students who have undergone counselling?
3. How does slowing of bad behaviour influence behaviour modification of students who have undergone counselling?
4. In what ways does understanding causes of behaviour influence behaviour modification among students who have undergone counselling?