

Vicarious Experience and Delinquent Behaviour Modification: Evidence Among Students in Secondary Schools in Kenya

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Abstract The study investigated the relationship between Vicarious Experience and Delinquent Behaviour Modification among secondary school students. The study employed concurrent triangulation design. The sample size comprised of 374 students, 8 deputy principals and 7 teacher counselors. Vicarious Experience Scale and Behavior Modification Questionnaire for Students were used to collect quantitative data. The interviews and Focus Group Discussions were used to obtain qualitative data. The reliability co-efficient reported was a high of 0.759 (vicarious experience questionnaire). Pearson Product Moment Correlation Coefficient was used to analyze data. There is statistically significant positive correlation between vicarious experience and behaviour modification among secondary school students ($n=344$; $r = .207$; $p<.05$). Teacher counsellors should expose students to environments that would enhance better vicarious experiences.

Keywords Relationship, Vicarious Experience, Delinquency, Behaviour Modification, Secondary school, Students

1. Introduction

Behaviour modification refers to the technique or treatment procedure used to change behaviour by altering a person's current environment to help the person function better in everyday life (Pear & Martin, 2003). Behaviour modification focuses on using a principle of learning and cognition to understand and change people's behaviour. Behavior modification is a psychotherapeutic intervention primarily used to eliminate or reduce maladaptive behavior in children or adults. While some therapies focus on changing thought processes that can affect behavior, for example, cognitive behavioral therapy, behavior modification focuses on changing specific behaviors with little consideration of a person's thoughts or feelings. The progress and outcome of the intervention can be measured and evaluated. A functional analysis of the antecedents and consequences of the problem behavior(s) must be identified. This leads to the creation of the specific target behaviors that will become the focus of change. Then, certain variables can be manipulated via reinforcers and punishments to change problem behavior(s). The goal is to eliminate or reduce the

maladaptive behavior (Scott & Cogburn, 2019).

Behaviour change interventions should be underpinned by theories and models as psychological processes can provide insight into the mechanisms that contributed to intervention effectiveness if successful changes are observed, and allow for replication (Michie & Abraham, 2004). It has been proposed that self-efficacy beliefs are constructed from four main sources: enactive mastery experience, vicarious experiences, verbal persuasion, and physiological and emotional arousal (Bandura, 1977a). Self-efficacy beliefs can be derived from vicarious experience. For many types of activities, there are no objective measures of adequacy or people do not have any previous experience on which to base their judgements of competence (Bandura 1997). Self-efficacy is a person's belief that she is capable of performing a particular task successfully (1997). As French (2013) suggests, causal association criteria in that this experimental study induced changes in the intervention group only and not in the control group, change in self-efficacy occurred before participants increased their walking, there were large changes in self-efficacy and walking behaviour, the strength of association between the two was strong, and formal mediation testing showed that self-efficacy mediated the effects of the intervention.

This study was informed by the Self-Efficacy Theory Bandura's self-efficacy theory. According to this theory, vicarious experience is one of the main sources that influence the efficacy of the individual teacher and alter efficacy beliefs through transmission of competencies and

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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). Literature on vicarious experiences and behavior change exists. Wagler (2011) in an American study reported a positive impact of vicarious experiences on pre-service science teaching efficacy. Ashford, Edmunds, and French, (2010) study reported 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 ($d = 0.11$). Qu, Ling, Heynderickx and Brinkman (2015) study showed that the expressed attitude of virtual bystanders towards the participants affected their self-efficacy, and their avoidance behavior. Otengei, Kasekende and Ntayi (2017) in Uganda suggested vicarious experience as an alternative route to stimulating a particular form of career motivation. Bartle & Harvey (2017) reported that previous experience (particularly personal experience of breastfeeding) explained a significant amount of variance in attitudes, subjective norm, and self-efficacy.

Otengei, *et al* (2017) study indicated vicarious experience as an alternative route to stimulating a particular form of career motivation. Bandura, (1977) also reported from microanalyses of enactive, vicarious, and emotive modes of treatment that support the hypothesized relationship between perceived self-efficacy and behavioral changes. Schyns, (2004) reiterate that vicarious learning, is regarded as possibly being responsible for this effect. Loo, and Choy (2013) study showed that self-efficacy sources were correlated with mathematics achievement scores as well as cumulative GPA of electronics-related engineering diplomas. Wilde, Natalie, and Anne Hsu (2019) showed individuals with low general self-efficacy to find vicarious experience information significantly less beneficial for their self-efficacy in completing a set task when compared to others with high general self-efficacy. Gülrü Yüksel (2014) longitudinal study in Turkey found that pre-service teachers seem to depend more on enactive mastery experience and social persuasion than on vicarious experience and affective state as sources of information. Mazziotta, *et al* (2011) reported that vicarious contact improves attitudes towards the out-group and increases participants' willingness to engage in direct cross-group contact. Qu *et al* (2015) study showed that the expressed attitude of virtual bystanders towards the participants affected their self-efficacy, and their avoidance behavior. 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.

From the reviewed studies, most of them have been either quantitative or qualitative in nature, but the present study adopted a mixed methods design. The government of Kenya expects secondary schools to use more of guidance and counselling to instill discipline among students rather than

punishment to enforce the same. Schools play an important role in the socialization process of the young people from where they learn to regulate their own conduct, respect others, and manage their time responsibly and thus becoming responsible citizens. However, we have an increase in the number of delinquent behavior in Rongo Sub County (Personal communications, 2018). Despite students undergoing guidance and counseling services, this problem continues to persist. The present study investigated the relationship between Vicarious Experience and Delinquent Behaviour Modification among secondary school students.

2. Research Methodology

Research design and study participants

The study employed concurrent triangulation design. The study employed a mixed approach by adopting both the qualitative and quantitative data. Creswell (2012) notes that mixed methods research approach utilizes in-depth contextualized and natural but time consuming insights of qualitative research coupled with the more efficient but less rich quantitative research. The sample size comprised of 374 students, 8 deputy principals and 7 teacher counselors.

Research tools

The Vicarious Experience Scale was used to collect data. The Behavior Modification Questionnaire for Students was also used to estimate the extent of behavior change among the counselled students. This helped with measuring how much these are in the students who have undergone guidance and counselling. These were rated using the scale of Strongly Disagree (SD), Disagree (D), Unsure (U), Agree (A) and Strongly Agree (SA). Cronbach's alpha coefficient analysis was a high of 0.759 for vicarious experience questionnaire was reported.

Data collection procedures

Ethical clearance was first obtained from National Commission for Science Technology and Innovation in Kenya. Thereafter, the letter of introduction was presented to the County Education Office then to the Sub-county Education office. The principals of the sampled schools were also requested for permission to carry out the research in their schools. The questionnaires were administered in school at a time the students were not attending to lessons or assessments. The questionnaires took under 30minutes each to complete. All questionnaires were collected after completion, and the respondents appreciated for their cooperation and participation. Interviews and Focus Group Discussions took 30-45 minutes to undertake.

Data analysis

Statistical methods are mainly used for analyzing data in order to discuss the relationship between variables (Babbie, 2007). The data was analyzed by entering the data into SPSS version 25 and performing a Pearson Correlation with vicarious experience against success in behaviour

modification among students. In investigating the views of the students on their vicarious experience, a Likert scaled itemed 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' attitude on their level of vicarious experience. The student behaviour modification was interpreted from the summation of their characteristics as exhibited in indicators of behaviour after going through counseling services. The sampled students were provided with questionnaires with indicators of behaviour modification and were asked to rate their behaviour in regards to these characteristic. The qualitative data obtained was analyzed using the Thematic Framework (Braun & Clark, 2006).

3. Results

3.1. Background Information of the Student Respondents

Table 1. Students' Demographic Information (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)

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 included age, gender, class and the school category of the students, as shown in Table 1.

From the exploratory data analysis, it is evident that majority 71 (52.6%) of the student respondents were males. The results of the study indicate that there was 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 majority of secondary school students are females. Nonetheless, both gender took part in the study making generalization of the 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 age 18-19 years of age. Likewise, it emerged that although all classes were represented in the study, form two students took 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 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 category of schools.

3.2. Findings on the Relationship between Vicarious Experience and Delinquent Behaviour Modification

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

The Hypothesis was stated as follows:

H₀₁: *There is no statistically significant relationship between vicarious experience and behaviour modification among secondary school students*

In order to test the null hypothesis, a Pearson Product Moment Correlation Coefficient was computed with scores on students' vicarious experience as independent variable and behaviour modification as dependent variable. The scores of independent variable (vicarious experience) was computed from frequencies of responses by computing mean responses per respondents. 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 Pearson correlation and regression analysis, as explained by Johnson & Creech (1983) and Sullivan & 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 in a similar manner 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 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 2 shows the SPSS output correlation analysis results.

Table 2. Relationship between Vicarious Experience and 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 2, it is evident that there is statistically significant positive correlation between vicarious experience and 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 statistically significant positive relationship between vicarious experience and behaviour modification among secondary school students in Rongo Sub-County, with high level vicarious experience and linked to better behaviour modification among secondary school students and vice-versa. However, to estimate the level of influence of student vicarious experience on behaviour modification among secondary school students, a coefficient of determination was computed using of regression analysis and the result was as shown in Table 3.

Table 3. Model Summary on Regression Analysis of Vicarious Experience on Behaviour Modification 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

The model summary indicates that students' level of vicarious experience accounted for 4.0% ($\text{Adjusted } R^2 = .040$) of the variation in their behaviour modification. This finding indicates that 4% of the variability in behaviour modification among the secondary school students is as a result of differences in their level of vicarious experience. It is fairly a small influence, however, it is significant. Table 4 shows the coefficients values of regression model of the influence of vicarious experience on behaviour modification.

Table 4. Coefficients- Influence of Vicarious Experience on Behaviour Modification among Secondary School Students

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

a. Dependent Variable: Behaviour Modification

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

Behaviour Modification = $2.8483 + .085x$ + error term.

From the 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 to improvement of behaviour modification by .207 standard deviations, as indicated by standardized beta coefficient of .207. Further, to investigate whether the level of student's vicarious experience is a significant predictor to their behaviour modification, Analysis of Variance was conducted, in line with the recommendation by Tabachnick & Fidell (2001), as shown in Table 5.

Table 5. ANOVA-Influence of Vicarious Experience on Behaviour Modification among Secondary School Students

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	1.373	1	1.373	15.353	.000 ^b
Residual	30.587	342	.089		
Total	31.960	343			

a. Dependent Variable: Behaviour Modification

b. Predictors: (Constant), Vicarious Experience

From the ANOVA output, there is enough evidence to conclude that the level of vicarious experience is a significant predictor of behaviour modification among the

secondary school students, $F(1, 342) = 15.353$, $p = .000 < .05$; Adjusted $R^2 = .040$. Therefore, it was concluded that although the influence is fairly small, there is statistically significant influence of vicarious experience on behaviour modification among the secondary school students. This denotes that secondary school students with high level vicarious experience is likely to exhibit high behaviour

The themes on the relationship between vicarious experience and behavior modification of secondary school students included positive befriending, role modeling, copying others' styles and suppression of bad behavior.

Positive befriending

Teacher counsellors' reported that these students, after undergoing counselling, are found to be close to the well-behaved students making them to have positive behavior change. 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 behavior of the well-behaved.

"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 behavior." (TC 5).

These interviewees further noted that this kind of relationship leads to these delinquent students' modification of their behavior by unlearning their initial behavior 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. These students give their tales of delinquency in school to the delinquent who then learn from their negative life experiences and decide to modify their behaviour.

"A student who was always combative and ready to even fight teachers was able to get good grades. We brought him to talk to our students on his personal experience while a student in our school. He did tell these students that he is sure that what he did in school, which was negative, may have denied him better grades. From this talk to students who were undergoing counselling, there were students who changed and talked of doing this because of the talk they had been exposed to." (TC 3).

A deputy reported that there was negative influence of the town dwellers on the delinquent students who are mostly rural in terms of social background.

"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." (DP 2).

Role modeling

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 good behavior of their role models and become better behaved. A deputy said that these delinquent students would find themselves modeling 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 behavior 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).

A focus group participant talked of having to behave as her role model. She says that having had counselling sessions where she saw herself in a different light, it was necessary to align herself to a girl who is said to be well-behaved in order 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 me for sometime." (FGD 1C).

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 mostly copied style of behavior is that of the town dwellers who are deemed better in behavior 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." (TC 5)

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 behavior 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 said that the delinquent students copy the behavior of the disciplined hence be disciplined. Another deputy 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 being 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 behavior." (DP 1).

Suppression of bad behavior

A deputy talked of suppression of delinquent behavior. When this is done for a long time it becomes a habit and the student modifies his behaviour. Some focus group had a participant who mentioned that she had to suppress her behavior after guidance and counselling in order to be a good student. She claimed to have realized that her behavior 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 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).

4. Discussion

The study findings indicated that there is statistically significant positive correlation between vicarious experience and behaviour modification among secondary school students ($n=344$; $r = .207$; $p < .05$). The model summary indicates that students' level of vicarious experience accounted for 4.0% (Adjusted $R^2 = .040$) of the variation in their behaviour modification. This finding indicates that 4% of the variability in behaviour modification among the secondary school students is as a result of differences in their level of vicarious experience. From the 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. Wagler (2011) indicated that variables of student ethnicity, student socioeconomic status and preservice teacher program placement were significant predictors of the preservice elementary teachers' science teaching efficacy during their vicarious experiences. Ashford, Edmunds, and French, (2010) study reported that 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 ($d = 0.11$). Qu, Ling, Heynderickx and Brinkman (2015) study showed that the expressed attitude of virtual bystanders towards the participants affected their self-efficacy, and their avoidance behavior. Otengei, Kasekende and Ntayi (2017) findings thus suggest observational learning (vicarious experience) as an alternative route to stimulating a particular form of career motivation (career identity). Bartle & Harvey (2017) reported that previous experience (particularly personal experience of breastfeeding) explained a significant amount of variance in attitudes, subjective norm, and self-efficacy.

Otengei, et al (2017) findings thus suggest observational learning (vicarious experience) as an alternative route to stimulating a particular form of career motivation (career identity). Bandura, (1977) Study Findings are reported from microanalyses of enactive, vicarious, and emotive modes of treatment that support the hypothesized relationship between perceived self-efficacy and behavioral changes. Schyns, B. (2004) reported that vicarious learning is regarded as possibly being responsible for this effect.

From the qualitative findings, the themes on the relationship between vicarious experience and behavior modification of secondary school students included positive befriending, role modeling, copying others' styles and suppression of bad behavior. Loo, C. , & Choy, J. (2013) reported that vicarious experience was correlated with mathematics achievement scores as well as cumulative GPA of electronics-related engineering diplomas. Wilde, Natalie, and Anne Hsu. (2019) showed vicarious experience information significantly less beneficial for their self-efficacy in completing a set task when compared to others with high general self-efficacy. Gülrü Yüksel (2014) found that pre-service teachers seem to depend more on enactive mastery experience and social persuasion than on vicarious experience and affective state as sources of information. Agostino Mazziotta, Amélie Mummendey, Stephen C. Wright. (2011) indicate that vicarious contact improves attitudes towards the out-group and increases participants' willingness to engage in direct cross-group contact. Qu C, Ling Y, Heynderickx I, Brinkman W-P (2015) reported that, 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.

5. Conclusions & Recommendations

From the study findings, it was concluded that there is statistically significant positive relationship between vicarious experience and behaviour modification among secondary school students in Rongo Sub-County, with high level vicarious experience and linked to better behaviour modification among secondary school students. Likewise, an improvement in vicarious experience by one standard deviation results to improvement of behaviour modification by .207 standard deviations, as indicated by standardized beta coefficient of .207. it was concluded that although the influence is fairly small, there is statistically significant influence of vicarious experience on behaviour modification among the secondary school students. This denotes that secondary school students with high level vicarious experience is likely to exhibit high behaviour modification. From the study findings, it's recommended that students need to be exposed to environments that would enhance better vicarious experiences.

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