

The Influence of Anxiety on Academic Outcomes among Students in Public Secondary Schools in Nakuru North Sub-County, Kenya

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Article History

Received: 2026-04-04

Revised: 2026-08-02

Accepted: 2026-08-07

Published: 2026-08-10

Keywords

Anxiety

Mental health

Secondary schools

Students

How to cite:

Maina, P. K., Bota, K. & Ogutu, J. (2026). The Influence of Anxiety on Academic Outcomes among Students in Public Secondary Schools in Nakuru North Sub-County, Kenya. *Research Journal of Education, Teaching and Curriculum Studies*, 4(1), 230-242.

Abstract

Anxiety is one of the major psychological factors influencing students' academic functioning and educational success. Public secondary schools in Nakuru North Sub-County continue to experience relatively low academic outcomes, despite national policy initiatives aimed at improving students' mental health and educational achievement. The present study investigated the influence of anxiety on academic outcomes among students in public secondary schools in Nakuru North Sub-County, Kenya in order to provide empirical evidence that has been lacking on how anxiety influence academic outcomes in the sub - County. The study adopted a pragmatic research paradigm and employed a convergent parallel mixed-methods design. The target population of the study was 27,920 students, 82 Class teachers, and 82 school counsellors in 82 public secondary schools and population sample size was 390 students from the sample of 13 public secondary schools, 13 class teachers and 13 school counsellors. Quantitative data were collected using structured questionnaires administered to students, while qualitative data were gathered through interview schedules with class teachers and school counsellors. Quantitative data were analysed using descriptive statistics, simple linear regression, and regression coefficient analysis whereas qualitative data were analysed thematically. The findings revealed a strong negative relationship between anxiety and academic outcomes ($r = -0.737$, $p < .001$). Regression analysis further showed that anxiety significantly predicted students' academic outcomes ($B = -0.127$, $p < .001$), indicating that higher anxiety levels were associated with poorer academic outcomes. Qualitative interviews with class teachers and school counsellors underscored these findings, emphasising the negative influence of anxiety on secondary school students' academic outcomes. The study concludes that anxiety significantly undermines students' academic outcomes. It recommends strengthening school-based mental health programmes, enhancing counselling services, and equipping

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teachers with skills to identify and support students experiencing anxiety.

Introduction

Examining anxiety among secondary school students is important because it affects mental well-being. It enables students to manage the pressures of life, utilise personal strengths, and achieve good academic outcomes and work performance while making positive contributions to their school and community (Gray et al., 2024). Anxiety is a psychological state of an individual characterised by feelings of nervousness or worry that something bad will happen, whereby such preoccupation can influence academic outcomes among secondary school students (Gichohi, 2019; Birhan, 2020). Secondary school students, most of whom are in the adolescent stage, are in a period of development associated with several cognitive, psychological and physiological changes, which involve multi-dimensional processes and factors that impact their psychological state, leading to anxiety (Misigo, 2021).

According to the Global Burden of Disease (GBD) (2025) report, anxiety among adolescent students is exacerbated by the risks and uncertainty they experience in class. This manifests during lessons and exams, and in their interactions, as panic, low concentration, and nervousness, which eventually affect their academic outcomes. This necessitated the World Health Organisation (WHO) developing the Problem Management Plus (PM+) manual for use as a psychological intervention to manage anxiety. In the USA, for instance, anxiety among students has attracted considerable attention because of its influence on academic outcomes and a dramatic upward trend in school attendance deficit cases (Bisson, 2017; Moustafa, 2022). In Spain, Fernández and Rojas (2019) in their study established that aspects of anxiety which are commonly found among secondary school students are associated with academic outcomes and affect school attendance and school dropout. Almeneessier et al. (2026), in their study in Saudi Arabia, observed that anxiety leads to restlessness and nervousness among students, resulting in fewer sleep hours and psychosomatic illness. All of these ultimately negatively influence their academic outcomes.

In South Africa, anxiety cases exacerbate the probability of mental illness among students residing in poverty, whereby around 20% of secondary school students in the country have experienced anxiety challenges in the form of behavioural, emotional and negative school academic outcomes (Shochet et al., 2020). In Nigeria, Ola (2024) found that although mild anxiety can serve as a motivator for academic hard work, chronic or unmanaged anxiety tends to result in avoidance, nervousness and reduced academic outcomes.

In Kenya, as in many other countries worldwide, anxiety among students in public secondary schools is becoming a critical concern (Muthoni, 2022). Nakuru North Sub-County, located in the Rift Valley region of Kenya, is no exception to this global trend (Ngare et al., 2023), since anxiety is linked to mental health challenges in the Sub-County, such as stress and anxiety, which can hinder a student's ability to engage positively in learning, concentrate in class, and perform well academically (Marangu & Ndeti, 2021). HIV and COVID-19 pandemics have exacerbated anxiety-related problems in Kenya, especially in Nakuru North, leading to a rise in psychologically related illnesses that affect their school life (UNICEF, 2021). Additionally, students in Nakuru North Sub-County are particularly affected by ethnicity, crime, poverty and pressure to perform academically, which have the potential to affect the psychological well-being of the Sub-County's students and cause anxiety that affects their academic outcomes. High-stakes end-of-year exams among secondary school students in Kenya create anxiety, panic, and nervousness,



which reduce their concentration in their studies, thereby influencing academic outcomes (Forman, 2017; Muthoni, 2022). Kenya, just like other sub-Saharan Countries, struggles with legislative and policy issues on mental health, and this is inhibiting the effective implementation of the existing policies that would have mitigated and addressed such psychological issues like anxiety (Clay & Semrau, 2020).

This study investigated anxiety among students in Nakuru North Sub-County and its influence on their academic outcomes. Such documented accounts will enable policymakers to work out appropriate mitigation programmes, treatment, and control the occurrence of anxiety and so reduce its adverse effects on academic outcomes among secondary school students.

In Kenya, the government has established robust policy frameworks, including the School Mental Health Policy (2015–2030), the National School Health Policy (2018), and the Basic Education Act (2013), which are intended to address issues related to learning among secondary school students, in order to promote positive academic outcomes. However, academic outcomes among students in public secondary schools remain unsatisfactory, as reflected in low KCSE performance, classroom participation, student engagement, and progression (Ngare, Ochola et al., 2023). These have caused considerable concern among stakeholders in the Sub-County. Nakuru North Sub-County has issues like ethnicity, crime, poverty and academic pressure to perform, which affect the psychological well-being of the students. Ethnicity among students entails associated issues like perceived discrimination characterised by derogatory treatment and negative stereotypes about their ethnic group. Additionally, ethnicity includes cultural isolation in instances where one belongs to a minority group. It can escalate anxiety in cases where their cultural values clash with the expectations of their academic environment. Anxiety among secondary school students causes excessive worry and fear, which directly compromises their brain cognitive function and subsequently influences academic outcomes. Studies indicate that between 25% and 40% of secondary school students in Nakuru County suffer from psychological challenges (Ministry of Health Kenya health policy, 2014). Although previous studies have documented the prevalence of psychological challenges among secondary school students, limited empirical evidence exists on how anxiety influences academic outcomes among students in public secondary schools in Nakuru North Sub-County, making interventions generalised and ineffective; hence the need for this study to investigate the influence of anxiety on academic outcomes among students in public secondary schools in Nakuru North Sub-County.

Research Hypothesis

H0: There is no statistically significant influence of anxiety on academic outcomes among students in secondary schools in Nakuru North Sub-County, Kenya.

Theoretical Framework

The present study was grounded in Bronfenbrenner's ecological systems theory and Bandura's Social Cognitive Theory.

Bronfenbrenner's ecological systems theory

Ecological systems theory by Bronfenbrenner (1979) posits that the overall environmental context in which an individual grows and develops comprises four primary levels: the microsystem, mesosystem, exosystem, and macrosystem (Ciumuari et al., 2019).

Bronfenbrenner (1979) defines the microsystem as the immediate environment surrounding a child, including their family, home, and any institutions, such as school, peer class interactions, and interactions with teachers. These interactions, if poorly managed, can cause anxiety in students, leading to fear, panic



during exams and reduced concentration during lessons in class. According to Bronfenbrenner (1979), the way parents bring up their children has a substantial impact on their anxiety status and emotional and psychological growth, which becomes more apparent in their class interactions and academic performance. Bronfenbrenner's mesosystem, the second level in his theory, refers to the relationships and interplay among the elements of the microsystem and explains how these parts function together and affect student anxiety (Masud 2019).

The exosystem level, according to Bronfenbrenner (1979), includes people and places that may not be part of a child's regular interactions but can still significantly affect their life, such as the parents' workplace, community, extended family and peers. Unemployed parents can have negative consequences and cause anxiety in children since they are unable to meet basic needs, making them nervous, thus influencing academic outcomes.

The macro system, which is Bronfenbrenner's final level, is the level that is most distant from the individual, like war, economy and culture, yet it significantly impacts their life (Tong et al., 2024).

Bronfenbrenner's theory is relevant to this study as it allows holistic examination of how various factors such as family dynamics, school climate, peer influence, and socio-cultural norms interact to affect students' anxiety and influence academic outcomes, which are unique to Nakuru North Sub-County.

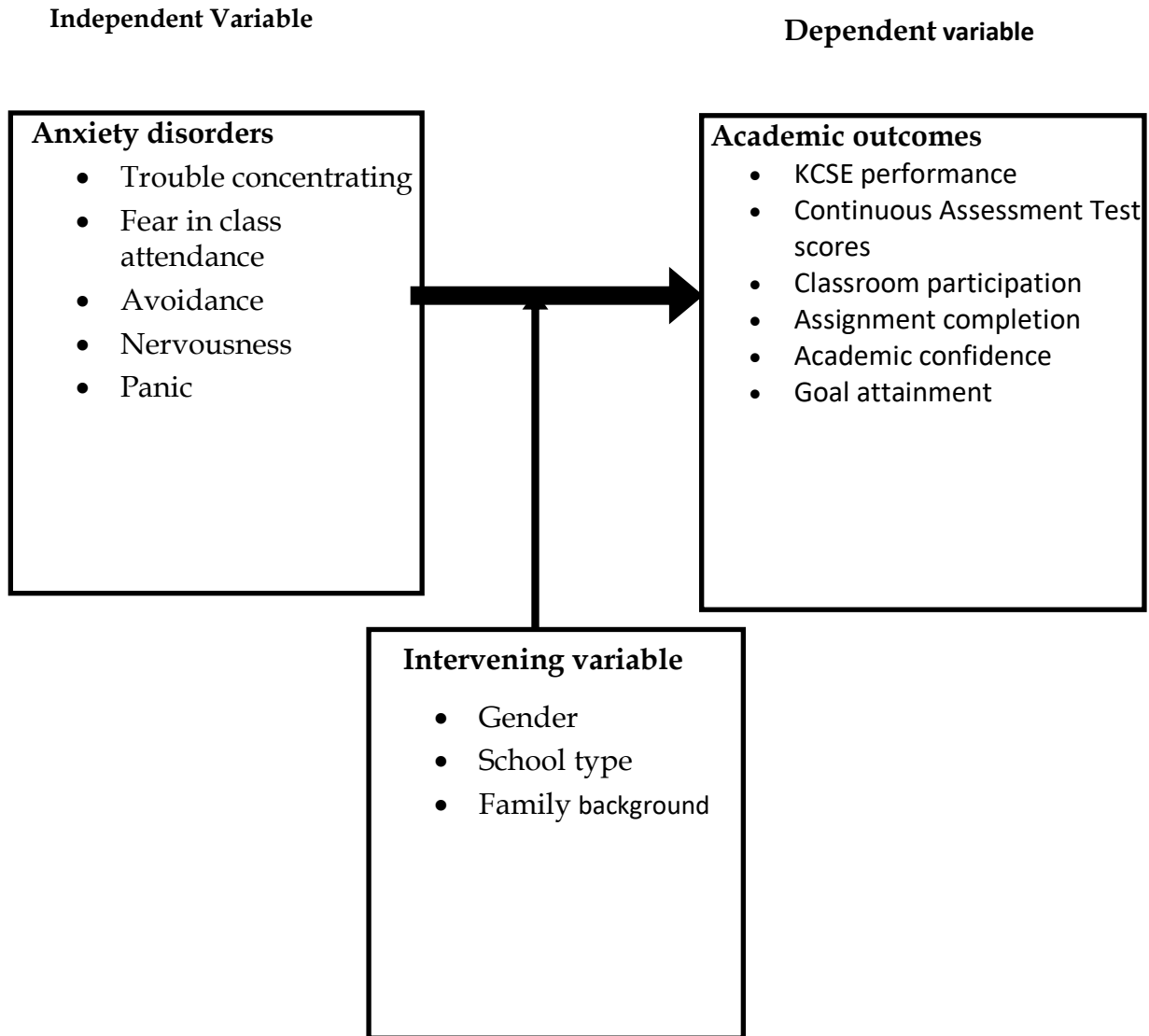
Bandura's Social Cognitive Theory:

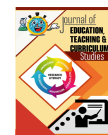
Albert Bandura, a popular psychologist, developed the Social Cognitive Theory (SCT) in the 1960s and 1970s, which integrates a broader understanding of the dynamic interplay between personal, behavioural, and environmental influences on human learning and behaviour (Bandura, 1986).

Social Cognitive Theory revolves around the key principle which states that a person's or students' behaviour (learning outcomes) is influenced by personal internal psychological factors (like anxiety), environmental factors (like school and class interaction factors), and the behaviour itself, all interacting reciprocally to determine student academic outcomes (Schunk, 2011). Environmental factors affecting students in Nakuru North Sub-County are ethnicity (cultural isolation, discrimination, stereotype threat and clash between cultural values and the academic environment), crime, poverty and pressure to perform academically, and these challenges have the potential to cause anxiety and so affect the psychological well-being of the Sub-County's students and influence their academic outcomes. By integrating both theories, this study offered a more comprehensive analysis of anxiety and its influence on academic outcomes among students in public secondary schools in Nakuru North Sub-County, Nakuru County, Kenya.

Conceptual Framework

This conceptual framework explores the influence of anxiety on academic outcomes among secondary school students in Nakuru North Sub-County, Kenya. It establishes the relationship between anxiety, the independent variable, and academic outcomes, the dependent variable, with gender, school type, and family background as intervening variables.





Research Methodology

This section presents the study design and methodology adopted in the research. It includes the research paradigm, area of the study, target population, the study sample and sampling technique, instruments used in the study, data collection techniques, data analysis, and ethical concerns.

Research Paradigm

This study adopted a pragmatic paradigm because the research philosophy of pragmatism prioritises what works in practice and real-world solutions over abstract theories. Pragmatism is the main philosophical foundation for Mixed-Methods Research, as used in this study, which integrates both qualitative and quantitative methods.

Research Design

The study adopted a mixed-methods approach, using both quantitative and qualitative data. The study used a convergent parallel mixed-methods design. According to Creswell (2017), the mixed research design, also called a triangulation design in this study, enabled the researcher to collect quantitative and qualitative data simultaneously and independently, analyse them concurrently using a convergent parallel mixed-methods design, and compare the results to see whether the findings confirm or disconfirm each other. The approach enabled the quantitative data from a closed-ended questionnaire, mainly from students, and the qualitative data from interview guides, mainly from teachers, to be analysed simultaneously and comprehensively.

Area of Study

The study was conducted in Nakuru North Sub-County, in the northern part of Nakuru County, Rift Valley Region. It covers an area of 374.3 Square kilometres. The study was conducted in Nakuru North Sub-County due to the low 2023 KCSE performance. The Sub-County students also experience high levels of psychological challenges such as anxiety resulting from ethnicity, poverty, crime and pressure to perform. There is limited localised evidence on how these factors influence academic outcomes in the 82 secondary schools in the Sub-County.

Target Population of the Study

The target population of the study comprised 28,084 individuals, including 27,920 students, 82 Form Three class teachers, and 82 school counsellors across 82 public secondary schools in Nakuru North Sub-County.

Sampling Techniques

Stratified random sampling was used to select 13 of 82 public secondary schools in Nakuru North Sub-County, based on official administrative classification: National, Extra-County, County, and Sub-County schools. Random sampling was used to select 13 schools from the four strata. Purposive sampling was used to sample 13 teachers and 13 counsellors, one from each of the 13 sampled schools.

Simple random sampling was used to select Form Three student participants from each of the 13 sampled schools.

Sample Size

The sample size for the quantitative component was determined using Slovin's formula to obtain a representative sample from the finite student population of 27,920 students in Nakuru North Sub-County. This yielded a sample of 13 schools and 390 students, with 30 per school. The sample size is as shown in Table 1.

*Table 1: Sampling Frame*

Participant Category	Target Population	Sample Size	Percent Sampled
Students	27,920	390	1.40
Class Teachers	82	13	15.85
School Counsellors	82	13	15.85
Total	28,084	416	33.1

Research Instruments

The typical instruments used in the study included student questionnaires and interview schedules, which were the primary tools for data collection from teachers and counsellors.

The respondents of the student questionnaire indicated their level of agreement or disagreement on the five-point Likert scale of five possibilities: SD (Strongly Disagree was awarded a minimum of one score to SA (Strongly Agree) was awarded a maximum of five scores.

Data Analysis

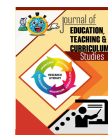
Data generated using a mixed-methods approach were of both quantitative and qualitative nature. The quantitative data were analysed using the Statistical Package for the Social Sciences (SPSS Statistics, Version 26). The analysis techniques that were used included descriptive statistics, linear regression, and regression coefficient analysis.

The qualitative information obtained from Form Three class teachers and counsellors underwent familiarisation, during which it was examined, categorised into themes and sub-themes, and then coded. The frequencies of information in each theme were then determined. A convergent parallel mixed-methods design was used to analyse the qualitative and quantitative data independently, then merge the results to enable analysis and interpretation and to draw reliable conclusions.

Ethical consideration

The researcher obtained the necessary authorisation documents and permission from various departments and offices before proceeding to the field to collect data. The researcher first obtained an introductory letter from the Directorate of Postgraduate Studies and the MMUST Institutional and Ethics Review Committee (IERC). The researcher also requested a letter of authorisation from the National Commission for Science Technology and Innovation (NACOSTI), which he got. The researcher then requested permission from the Ministry of Education, Science and Technology of Nakuru North Sub-County to conduct the study, and it was granted. The researcher made appointments with the sampled schools and their principals, and they set the dates to administer the questionnaires.

The respondents' identities were not indicated on the questionnaire to protect participants' security and privacy. The researcher avoided inappropriate words and phrases when administering the questionnaire and clarifying issues raised by respondents. This created a warm, friendly environment for respondents. The study was voluntary, with consent sought from respondents before the study began, and no penalty was imposed on those who opted not to participate. The sampled Form Three class teacher respondents were involved in organising the Form Three student respondents and arranging the venue for the study. They ensured the room was well-lit, well-ventilated and clean. These steps were taken to reduce risk and protect participants from physical, mental, or social discomfort.



Findings and Discussion

This section presents the findings and discusses descriptive statistics and inferential analyses of the data.

Descriptive Statistics on Anxiety

Student respondents were asked to rate various statements on a five-point Likert scale to investigate the influence of anxiety on academic outcomes among secondary school students in the Nakuru North Sub-County. The results are shown in Table 2.

Table 2: Descriptive Statistics on Anxiety

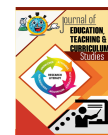
No.	Statements	Total	Mean	Std deviation
1.	I often experience fear before attending classes.	307 100%	3.65	1.521
2.	I often experience difficulty in concentrating during lessons.	307 100%	3.33	1.494
3.	I avoid participating in class discussions.	307 100%	3.28	1.465
4.	I often panic during exams.	307 100%	3.21	1.483
5.	I often experience nervousness when interacting with teachers in class.	307 100%	3.31	1.435

Respondents were asked whether they often experience fear before attending classes. The mean score of 3.65 on a five-point Likert scale, as shown in Table 2, confirms that, overall, student responses leaned towards agreement with the statement that they experience fear before attending classes. This is a significant finding, as it points to a widespread experience of pre-class anxiety among secondary school students in Nakuru North Sub-County. Such high levels of fear may interfere with students' ability to focus, engage in class activities, and perform well academically. This aligns with Bisson (2017), who asserted that fear negatively affects students' cognitive functioning, memory retention, and participation, ultimately leading to poorer academic outcomes that call for interventions.

The study sought to determine whether respondents often experience difficulty concentrating during lessons. The mean score of 3.33 on the five-point Likert scale indicates agreement among respondents, confirming that, on average, students perceive anxiety as a factor affecting their ability to concentrate in class. From the researcher's perspective, the students are likely experiencing a decline in academic outcomes due to diminished concentration in class caused by anxiety. Legesse (2017) supports this finding by emphasising that anxiety interferes with students' attentional systems, reducing their cognitive efficiency and making it difficult for classroom engagement to take place. This concurs with the information obtained from class teachers. When asked to state how anxiety manifests in students' academic behaviour during regular classroom activities, class teacher A from Form Three stated that:

As a class teacher, I have noted that students experiencing anxiety tend to be withdrawn or inattentive during lessons. Some avoid eye contact with me, rarely volunteer to answer questions, and some often skip classes. Others show signs such as restlessness, frequent requests to leave the class, low concentration, and difficulty following instructions or retaining new information, especially during high-pressure tasks.

The next item queried respondents on whether they avoid participating in class discussions. The mean score of 3.28 on a five-point Likert scale, as shown in Table 2, suggests a leaning towards agreement,



reinforcing the finding that, on average, students are more likely to avoid class discussions due to anxiety. This outcome aligns with Gichohi's (2019) findings, who emphasised that anxiety negatively influences student interaction and confidence, particularly in oral participation, and influences their academic outcomes.

Participants were asked if they often panic during exams. The results in Table 2 show a mean score of 3.21 on a five-point Likert scale, suggesting a leaning toward agreement: on average, students feel that exam preparation increases their anxiety. These findings are in line with Misigo (2021), who reported that exam-related anxiety is a common issue among students, often leading to sleep disturbances, reduced motivation, and poor academic outcomes.

Respondents were asked whether they often experience nervousness when interacting with teachers in class. The mean score of 3.31, which leans toward agreement, reinforces the dominant trend that most students often experience nervousness when interacting with teachers in class. This aligns with Gray et al. (2024), who highlighted that students who get insufficient mental health support in schools, particularly from frontline figures like teachers, have exacerbated anxiety and reduced overall academic outcomes.

The discussion aligned with information obtained from Form Three class teachers when asked about strategies they use to support students who show signs of academic anxiety, such as feelings of nervousness. Class teacher A, Form Three, noted:

As a class teacher, I recognise that many students may not openly express their nervousness, so I make a conscious effort to create a supportive classroom environment by being approachable and observant of changes in behaviour. I offer flexible deadlines where appropriate, provide encouragement rather than pressure, and check in privately with students who appear withdrawn, overwhelmed, or nervous. While I try to be supportive, I acknowledge the need for more training to better identify and address academic anxiety effectively.

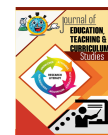
Descriptive Statistics on Academic Outcomes

Respondents were asked various questions to help establish the academic outcomes of secondary school students, using behavioural outcomes to measure student learning and academic outcomes. Table 3 summarises the results.

Table 3: Descriptive Statistics on Academic Outcomes

No.	Statements	Total	Mean	Std deviation
1.	I consistently perform well in my school subjects	307 100%	2.61	1.441
2.	I set academic goals for myself and work hard to achieve them	307 100%	2.60	1.437
3.	I feel confident in my ability to succeed academically	307 100%	2.77	1.513
4.	My grades reflect the effort I put into my studies.	307 100%	2.54	1.464

Table 3 indicates an overall mean of 2.63 across the four items, consistent with the findings, showing that the majority of respondents disagreed with the statements on academic outcomes. The high level of



disagreement indicates significant barriers affecting students' ability to perform well across all subjects on a regular basis. This is possibly influenced by emotional, social, or environmental challenges and anxiety that interfere with learning and concentration. These students may lack confidence in their academic abilities or face issues such as low motivation caused by anxiety, poor time management, or limited support both at home and in school. According to Tayag and Gonzales (2021), students who struggle with anxiety often find it difficult to maintain consistent academic outcomes due to interruptions in focus, limited access to support systems, and low academic self-concept.

The discussion aligns with information obtained from class teachers when asked to state the behaviours or indicators that help them identify students who consistently perform well academically. Class teacher D from Form Three stated:

Most students don't show consistency in performance and tend to be less attentive, organised, and engaged in both classroom and homework activities. They often submit their work late and show a limited grasp of the subject matter. Their performance reflects some sort of mind disturbance and interference in their commitment to their studies. I monitor this through observation, continuous assessment, and class participation.

Test of Hypothesis

The first null hypothesis stated that anxiety has no statistically significant influence on academic outcomes among secondary school students in Nakuru North Sub-County, Nakuru County. To test this hypothesis, simple linear regression analysis was employed, with anxiety as the independent variable and academic outcomes as the dependent variable, utilising qualitative data from interview schedules with class teachers and counsellors, as well as quantitative data from student questionnaires. The results are as in Table 4.

Table 4: Simple Linear Regression Analysis on Anxiety and Academic Outcomes

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	-.737	0.543	0.521	0.232

The results in Table 4 indicate an R value of $r = -.737$, $p < .001$, suggesting a strong negative relationship between anxiety and academic outcomes. The R Square value of $R^2 = .543$ implies that 54.3% of the variation in academic outcomes among secondary school students can be explained by anxiety levels alone.

The regression coefficients were examined to determine the magnitude and direction of anxiety's influence on academic outcomes, as shown in Table 5.

Table 5: Regression Coefficient of Anxiety and Academic Outcome

Model	Unstandardised Coefficients (B)	Std. Error	t	Sig.
Constant	0.592	0.163	3.621	0.001
Anxiety	-0.127	0.029	-4.381	0.001

The anxiety unstandardised coefficient $B = -.127$, $t = -4.381$, $p < .001$ (Table 5), indicates that anxiety negatively and significantly influences academic outcomes. The null hypothesis was therefore rejected. The study findings validate the two theories employed. Bronfenbrenner's (1979) Ecological systems theory explains the four primary environmental levels in which an individual grows, interacts and develops. These levels include the microsystem (family and class), mesosystem (interplay within the



microsystem), exosystem (parents' workplace and community), and macrosystem (economy, culture, and war). Interactions of the students at these levels determine their anxiety levels and influence academic outcomes. Social Cognitive Theory by Bandura revolves around the key principle that students' academic outcomes (behaviour) are influenced by personal internal psychological factors (such as anxiety) and environmental factors (such as family and class interactions). The findings also suggest the necessity of integrating the two theories, since neither framework adequately captures the full complexity of anxiety's influence on students' academic outcomes.

Conclusion

The study concludes that anxiety is a significant predictor of students' academic outcomes in public secondary schools in Nakuru North Sub-County. Elevated anxiety levels reduce students' concentration, classroom participation, confidence, and examination preparedness, ultimately leading to poorer academic outcomes. Addressing anxiety through comprehensive school-based mental health interventions is therefore essential for improving educational outcomes.

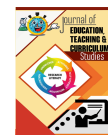
Given the negative effect of anxiety on academic performance, the study recommends that school principals and Boards of School Management (BOM) should strengthen school counselling departments and programmes. The Teachers Service Commission, through the County Directors of Education, should organise professional workshops for school counsellors and equip them with the knowledge and skills needed to curb anxiety among students. The County Directors of Education should organise in-service training in their Counties to train teachers to integrate mental health education into school life skills programmes. Such an endeavour will equip teachers with skills in student emotional regulation and anxiety management through participatory peer-support modelling and mindfulness exercises. Additionally, school BOM should establish a workable referral system with health facilities and also increase parental involvement in students' emotional well-being to curb escalation of anxiety among students.

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