

DRUG ABUSE AND CULTISM AS CORRELATES OF STUDENTS' ATTITUDE AND PERFORMANCE IN MATHEMATICS IN SECONDARY SCHOOL IN DELTA STATE, NIGERIA.

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Abstract

The study examined drug abuse and cultism as correlates of students' attitude and academic performance in mathematics in secondary schools in Delta State. The correlational research design was used in the study. The population for the study comprised 19,978 SSII public secondary School students in Delta State for the 2023/2024 session. The sample size for this study comprised 698 SSII students selected from 16 public secondary schools in Delta State using simple random sampling technique. Data were gathered using three instruments: Drug Abuse and Cultism Questionnaire (DACQ), Mathematics Attitude Scale (MAS) and students' past results in Mathematics. DACQ and MAS were validated by three experts, while students' past result was not validated since it was collected from origin source (Vice Principals' Academic Office), DACQ and MAS had reliability coefficients of 0.73 and 0.77, Data obtained were analysed using Pearson correlation. The results revealed Significant negative correlation between drug abuse and students' attitude as well as academic performance in Mathematics; and significant negative correlations between cultism and students' attitude as well as students' academic performance in Mathematics. Based on these findings, it was recommended among others that educational institutions should establish robust counseling services that provide support for students struggling students' with drug abuse and the pressures of cultism.

Keywords: Cultism, Drug Abuse, Students' Performance, Students' Attitude.

Introduction

Mathematics is a foundational field of study that encompasses the exploration of numbers, amounts, forms, and patterns. Its language is widely regarded as a global tool that enables humans to comprehend and tackle intricate issues in our surroundings. Mathematics is essential in Nigerian secondary schools as it plays a pivotal part in fostering students' critical thinking, problem-solving, and analytical abilities (Research Gate, 2024; Cambridge Dictionary, 2024). The incorporation of Mathematics into the secondary school curriculum in Nigeria is indispensable for various reasons. First and foremost, mathematics equips students with the essential skills and information required for success in several disciplines, including Science,

Technology, Engineering, and Mathematics (STEM). It also helps students develop logical reasoning and abstract thinking abilities, which are essential for academic and professional success. Furthermore, mathematics is a key subject for developing numeracy skills, which are essential for everyday life. By studying mathematics, students learn how to manage their finances, interpret data and make informed decisions. The National Policy on Education (FRN, 2013) in Nigeria places significant emphasis on the crucial role of mathematics education in secondary schools. The policy mandates the inclusion of mathematics as a fundamental subject in the curriculum, and emphasizes the need to enhance the standard of mathematics teaching in schools.

Although mathematics holds significant relevance, applications and elevated status, students continue to perform below standard in external examinations such as West African Senior School Certificate Examinations (WASSCE) from 2016 to 2023 (National Bureau of Statistics, 2023). The performance of students is influenced by a myriad of factors, including socio-economic status, family background, and personal attitudes towards education. In recent years, drug abuse and cultism have emerged as significant issues affecting students' performance.

Drug abuse refers to the harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs. The prevalence of drug abuse among students has been a growing concern in Nigeria, with studies indicating that a significant number of students engage in substance use (Ogunyemi, Owoaje & Adebayo, 2020). The reasons for drug abuse among students are multifaceted, including peer pressure, stress, and the desire for escapism. Research has shown that drug abuse negatively impacts cognitive functions, leading to poor academic performance (Owoaje, Ogunyemi & Adebayo, 2021). Specifically, students who abuse drugs often exhibit decreased concentration, impaired memory, and reduced motivation, all of which are critical for success in Mathematics. Furthermore, the psychological effects of drug abuse, such as anxiety and depression, can further hinder academic performance.

On the other hand, cultism, defined as the practice of belonging to secret societies or groups that often engage in violent and anti-social behaviours has become a pervasive issue in Nigerian secondary schools (Ogunyemi et al., 2020). Cult groups often recruit students, promising them protection, social status, and a sense of belonging. However, the reality is that cultism often leads to violence, intimidation, and a culture of fear within educational institutions. The influence of cultism on academic performance is profound. Students involved in cult activities often prioritize their allegiance to their groups over their academic responsibilities, leading to poor attendance, decreased engagement in class, and ultimately, lower academic performance. Additionally, the fear of violence and intimidation could create a hostile learning environment, further detracting from students' ability to focus on their studies.

The relationship between drug abuse, cultism, and academic performance is complex and interrelated. Students involved in cultism may be more likely to engage in drug abuse as a means of coping with the stress and violence associated with their involvement in these groups. Conversely, students who abuse drugs may be more susceptible to recruitment into cults, as their impaired judgment and desire for acceptance can make them more vulnerable to peer pressure. Research indicates that both drug abuse and cultism contribute to negative attitudes towards education, which could further exacerbate academic challenges (Owoaje et al., 2021). Students who engage in these behaviours may develop a fatalistic attitude towards their education, believing that their academic success is unattainable. This mindset could lead to disengagement from academic activities, resulting in poor performance in subjects like Mathematics, which require consistent practice and a positive attitude towards learning.

Several cases of drug abuse and cultism have been recorded in secondary schools in Nigeria and Delta State in particular (Ogbadu & Ogbadu, 2020). Delta State, located in the southern region of Nigeria, is home to a diverse population and a range of educational institutions.

The state has made significant strides in improving access to education, but challenges remain, particularly in the areas of drug abuse and cultism (Ogunyemi, Adebayo & Ojo, 2021). The prevalence of these issues in Delta State's secondary schools has raised concerns among educators, parents, and policymakers. The state's educational authorities have recognized the need for comprehensive strategies to address drug abuse and cultism. Olatunji and Ojo (2021) investigated the effects of drug abuse on the academic performance of secondary school students, with a focus on Mathematics. The findings indicated that students who engage in drug abuse tend to have lower academic performance due to impaired cognitive functions and decreased motivation. Adeyemo and Adebayo (2020) examined the influence of cultism on students' academic performance, particularly in Mathematics. The study found that involvement in cult activities negatively affects students' focus and commitment to their studies, leading to poor performance in Mathematics. Okeke and Nwosu (2023) investigated how peer influence contributes to drug abuse and its subsequent effect on academic performance in Mathematics. The findings revealed that students who associate with peers involved in drug abuse are more likely to perform poorly in Mathematics. Eze and Nwankwo (2022) explored how drug abuse and cultism influence students' attitudes towards Mathematics. The results indicated that students involved in drug abuse and cult activities exhibit negative attitudes towards Mathematics, which correlates with lower academic performance. Ibe and Chukwu (2023) examined the dual impact of cultism and drug abuse on students' academic performance in Mathematics. The results indicated a significant negative correlation between these factors and students' performance. Although, several studies have investigated the influence of drug abuse and cultism on students' academic performance and attitude towards mathematics, these studies were conducted outside Delta State based on the literature at the researcher's disposal. This created a gap in knowledge this study filled.

However, there is a need for empirical research to better understand the specific correlations among drug abuse, cultism, students' attitudes, and academic performance in Mathematics in secondary schools in Delta State. It is against this background that this study sought to investigate drug abuse and cultism as correlates of students' attitude and performance in mathematics in secondary schools in Delta State.

Statement of the Problem

The prevalence of drug abuse and cultism among secondary school students in Delta State has emerged as a significant concern, particularly regarding its influence on academic performance and attitudes towards subjects such as Mathematics. Mathematics, a foundational subject critical for various fields of study, requires a high level of cognitive functioning and a positive attitude for effective learning. However, the dual challenges of drug abuse and cultism may contribute to negative attitudes towards Mathematics, leading to lower academic performance. Despite the growing body of literature addressing the effects of these social issues on education, there remains a paucity of research specifically examining their correlates with students' attitudes and performance in Mathematics within the context of Delta State. This Study aimed to fill this gap by investigating the extent to which drug abuse and cultism influence students' attitudes towards Mathematics and their academic performance in the subject. Understanding these relationships is crucial for developing targeted interventions that can enhance students' educational experiences and outcomes in Delta State.

Purpose of the Study

The study focused on drug abuse and cultism as correlates of students' attitude and academic performance in secondary schools in Delta State. The study specifically determined the correlation between:

1. Drug abuse and students' attitude towards Mathematics
2. Drug abuse and students' academic performance in Mathematics

3. Cultism and students' attitude towards Mathematics
4. Cultism and students' performance in Mathematics

Research Questions

Four research questions guided the investigation:

- i. What is the relationship between drug abuse and students' attitude towards Mathematics?
- ii. What is the relationship between drug abuse and students' performance in Mathematics?
- iii. What is the relationship between cultism and students' attitude towards Mathematics?
- iv. What is the relationship between cultism and students' performance in Mathematics?

Hypotheses

The Following null hypothesis were formulated and tested at 0.05 level of significance

1. There is no significant relationship between drug abuse and students' attitude towards Mathematics.
2. There is no significant relationship between drug abuse and students' academic performance in Mathematics.
3. There is no significant relationship between cultism and students' attitude towards Mathematics.
4. There is no significant relationship between cultism and students' academic performance in Mathematics.

Methodology

The correlational research design was used in the study, which is suitable for investigating the associations between several independent variables (drug abuse and cultism) and dependent variables (attitude and academic performance). When patterns and relationships can be found without manipulating the variables, correlational research designs are especially helpful (Field, 2018). The population for the study comprised 19,978 SSII public schools' students in Delta State for the 2023/2024 session. The sample size for this study comprised 698 SSII students selected from 16 public secondary schools in Delta State using simple random sampling technique. Data were gathered using three instruments: Drug Abuse and Cultism Questionnaire (DACQ), Mathematics Attitude Scale (MAS) and students' past results in Mathematics. DACQ contained drug abuse scale and cultism scale. A four-point scoring system with four weights—Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD)—was used for each item in DACQ and MAS. The students' past result used in this study was the third term promotion examination results in mathematics for the 2023 and 2024 academic session.

Face and content validation were used to determine the validities of DACQ and MAS. In order to accomplish this, the researcher gave three experts the two instruments, The experts (lecturers) from Delta State University, Abraka's Department of Science Education validated the instruments. The final draft of the instrument took the experts' recommendations into account. These modifications were considered in order to improve the validity of the instrument. The students' past result in mathematics was not validated since it was retrieved from the Vice Principal's (Academic) office. The Cronbach's alpha coefficient was utilised to evaluate DACQ and MAS coefficients for DACQ and MAS, were 0.73 and 0.77, respectively. Regarding the study itself, the researcher, with the assistance of three research assistants, gathered data by giving structured questionnaires to a sample of SSII students in secondary schools in Delta State Pearson correlation was used to assess the responses from the students who were sampled.

Results

Research Question one

What is the relationship between drug abuse and students' attitude towards Mathematics?

Table 1: Correlation of Drug Abuse and Students' Attitude

Variables	N	r	r ²	r ² %	Decision
Drug Abuse	698	-0.595	0.354	35.4	Negative Correlation
Attitude	698				

Table 1 shows that the correlation coefficient (r) drug abuse and students' attitude is -0.595, with a coefficient of determination (r^2) of 0.354. The negative sign indicates that as drug abuse increases among students, their attitudes tend to become less positive or more negative. A coefficient of determination of 0.354 implies that drug abuse contributed 35.4 percent to students' attitude towards mathematics. This implies a strong negative relationship between drug abuse and students' attitude towards mathematics.

Research Question Two

What is the relationship between drug abuse and students' academic performance in Mathematics?

Table 2: Correlation of Drug Abuse and Students' Academic Performance

Variables	N	r	r ²	r ² %	Decision
Drug Abuse	698	-0.683	0.466	46.6	Negative Correlation
Academic Performance	698				

Table 2 shows that the correlation coefficient (r) drug abuse and students' academic performance is -0.683, with a coefficient of determination (r^2) of 0.466. The negative sign indicates that as drug abuse increases among students, their academic performance tends to reduce. A coefficient of determination of 0.466 implies that drug abuse contributed 46.6 percent to students' academic performance in mathematics. This implies a strong negative relationship between drug abuse and students' academic performance in mathematics.

Research Question Three

What is the relationship between cultism and students' attitude towards Mathematics?

Table 3: Correlation of Cultism and Students' Attitude

Variables	N	r	r ²	r ² %	Decision
Cultism	698	-0.740	0.548	54.8	Negative Correlation
Attitude	698				

Table 3 shows that the correlation coefficient (r) cultism and students' attitude is -0.740, with a coefficient of determination (r^2) of 0.548. The negative sign indicates that as cultism increases among students, their attitude towards mathematics tend to become less positive. A coefficient of determination of 0.548 implies that cultism contributed 54.8 percent to students' attitude towards mathematics. This implies a strong negative relationship between cultism and students' attitude towards mathematics.

Research Question Four

What is the relationship between cultism and students' academic performance in Mathematics?

Table 4: Correlation of Cultism and Students' Performance

Variables	N	r	r ²	r ² %	Decision
Cultism	698	-0.750	0.563	56.3	Negative Correlation
Academic Performance	698				

Table 4 shows that the correlation coefficient (r) cultism and students' academic performance is -0.750, with a coefficient of determination (r^2) of 0.563. The negative sign indicates that as cultism increases among students, their academic performance in mathematics tends to become reduce. A coefficient of determination of 0.563 implies that cultism contributed 56.3 percent to students' academic performance in mathematics. This implies a strong negative relationship between cultism and students' academic performance in mathematics.

Hypotheses one

There is no significant relationship between drug abuse and students' attitude towards Mathematics

Table 5: Correlation of Drug Abuse and Students' Attitude

Variables	N	r-cal.	Sig. (2-tailed)	Decision
Drug Abuse	698	-0.595	0.000	HO ₁ is significant
Students' Attitude	698			

Table 5shows a significant negative correlation between drug abuse and students' attitude, $r = -0.595$, $P(0.000) < 0.05$. Thus, the null hypothesis is rejected. Therefore, significant relationship exists between drug abuse and students' attitude towards Mathematics.

Hypotheses Two

There is no significant relationship between drug abuse and students' academic performance in Mathematics

Table 6: Correlation of Drug Abuse and Students' Academic Performance

Variables	N	r-cal	Sig. (2-tailed)	Decision
Drug Abuse	698	-0.683	0.000	HO ₂ is significant
Academic Performance	698			

Table 6shows a significant negative correlation between drug abuse and academic performance, $r = -0.683$, $P(0.000) < 0.05$. Thus, the null hypothesis is rejected. Therefore, a significant negative relationship exists between drug abuse and students' academic performance in Mathematics.

Hypotheses Three

There is no significant relationship between cultism and students' attitude towards Mathematics

Table 7: Correlation of Cultism and Students' Attitude

Variables	N	r-cal	Sig. (2-tailed)	Decision
Cultism	698	-0.740	0.000	HO ₃ is significant
Students' Attitude	698			

Table 7shows a significant negative correlation between cultism and students' attitude, $r = -0.740$, $P(0.000) < 0.05$. Thus, the null hypothesis is rejected. Therefore, a significant negative relationship exists between drug abuse and students' academic performance in Mathematics.

Hypotheses Four

There is no significant relationship between cultism and students' academic performance in Mathematics

Table 8: Correlation of Cultism and Students' Academic Performance

Variables	N	r-cal	Sig. (2-tailed)	Decision
Cultism	698	-0.750	0.000	HO ₄ is significant
Academic Performance	698			

Table 8 shows a significant negative correlation between cultism and students' academic performance, $r = -0.750$, $P(0.000) < 0.05$. Thus, the null hypothesis is rejected. Therefore, a significant negative relationship exists between cultism and students' academic performance in Mathematics.

Discussion

The study revealed a significant strong negative relationship between drug abuse and students' attitude towards mathematics. This implies that as drug abuse increases among students, their attitude towards mathematics tends to become more negative. This is predicated on the fact that drug abuse could lead to impaired cognitive functions, resulting in poor decision-making and negative attitudes towards education and authority figures. Substance abuse often causes mood swings and emotional instability, which can lead to a lack of motivation and a negative outlook on academic responsibilities. This finding lends support to that of Eze and Nwankwo (2022) who reported that students involved in drug abuse and cult activities exhibit negative attitudes towards Mathematics, which correlates with lower academic performance. The authors suggest that positive reinforcement and counseling can help improve students' attitudes.

The study again revealed a significant strong negative relationship between drug abuse and students' academic performance in mathematics. This implies that as drug abuse increases among students, their academic performance in mathematics tends to reduced. This is predicated on the fact that Drug abuse can impair cognitive functions such as memory, attention, and problem-solving skills, which are critical for academic success, particularly in subjects like Mathematics. Students who abuse drugs may frequently miss classes, leading to gaps in knowledge and understanding, ultimately affecting their academic performance. This finding corroborates the views of Olatunji and Ojo (2021) who reported that students who engage in drug abuse tend to have lower academic performance due to impaired cognitive functions and decreased motivation.

One of the findings of the study revealed a significant strong negative relationship between cultism and students' attitude towards mathematics. This implies that as cultism increases among students, their attitude towards mathematics tends to become more negative. This is predicated on the fact that involvement in cultism can create a culture of fear, leading to a negative attitude towards academic engagement and collaboration with peers. Cultism often promotes values that conflict with academic integrity and discipline, fostering a negative attitude towards education and respect for teachers. Students involved in cult activities may feel pressured to prioritize cult-related activities over academic responsibilities, leading to a dismissive attitude towards education. This finding supports that of Ogunyemi et al. (2020) who reported that drug abuse and cultism contribute to negative attitudes towards education.

The study further revealed a significant strong negative relationship between cultism and students' academic performance in mathematics. This implies that as cultism increases among students, their academic performance in mathematics tends to reduce. This is predicated on the fact that cult activities often take precedence over academic commitments, leading to decreased study time and focus on school work. The violent nature of cultism can create an unstable

environment that disrupts learning and concentration, negatively impacting academic performance. Students involved in cultism may be influenced by peers to prioritize cult-related activities over academic pursuits, leading to a decline in achievement. This finding agrees with that of Adeyemo and Adebayo (2020) who reported that involvement in cult activities negatively affects students' focus and commitment to their studies, leading to poor performance in Mathematics.

Conclusion

The findings of this study indicate a significant negative correlation between drug abuse, cultism, and students' attitudes and academic performance in Mathematics among students in Delta State. The detrimental effects of drug abuse manifest in impaired cognitive functions, emotional instability, and reduced motivation, which collectively contribute to a negative attitude towards mathematics and lower academic achievement in the subject. Similarly, cultism fosters an environment of fear, distraction, and misaligned values that detracts from students' focus on their studies. These correlations underscore the urgent need for targeted interventions to address the issues of drug abuse and cultism within educational institutions, as they pose significant barriers to students' academic performance and overall well-being.

Recommendations

1. Educational institutions should establish robust counseling services that provide support for students struggling with drug abuse and the pressures of cultism.
2. Schools and communities should collaborate to create awareness campaigns that educate students about the dangers of drug abuse and cultism.
3. Educational authorities should enforce strict policies against cultism and drug abuse within schools.

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