



## RELATIONSHIP BETWEEN DELINQUENT BEHAVIOUR AND PHYSICS ACADEMIC PERFORMANCE AMONG STUDENTS OF FEDERAL UNITY COLLEGES IN NORTH WEST, NIGERIA

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### Abstract

The study investigated the relationship between Delinquent Behaviour and Physics Academic Performance among SS II Students of Federal Unity Colleges in North West, Nigeria. Three hypotheses were drawn and tested at .05 level of significance. A correlational research design was adopted. A multi-stage sampling technique was used, in which the cluster sampling technique was applied for the selection of States in North West Nigeria. One State was randomly selected from each cluster using the fishbowl sampling technique. The population used was two thousand one hundred and sixteen (2,116) students. Nine hundred and fifty-two (952) students were randomly selected using a systematic random samplings technique from the sampled schools. Delinquent Behaviour Scale and the scores of students' academic performance in Physics from their Third term examinations (2024) were used. Cronbach's Alpha reliability coefficient of 0.803 for the DBS Scale was determined. The hypothesis one was tested using a PPMC while the hypotheses two and three were tested using a t-test for independent sample. The results revealed that there was significant relationship between Delinquent Behaviour and Academic Performance. It was also revealed that, there was significant difference in each of Delinquent Behaviour and Academic Performance between male and female Students. The study concluded that delinquent behaviour correlates with the academic performance of physics students in the area. The study recommended, among others, that Students should be enlightened about the relevance of delinquent behaviours on their Achievement.

**Keywords:** Delinquent Behaviour, Physics' Academic Performance, Federal Unity Colleges

### Introduction

It is therefore evident that the nature of the school environment significantly influences students' behaviour and overall development. When the school environment fails to meet students' emotional and psychological needs, it may

lead to various forms of behavioural issues. One of the most concerning manifestations of such behaviour is deviant or delinquent behaviour, which has become a growing concern among educators and policymakers alike. Crossman (2017) opined that, delinquent behaviour is any conduct that is



contrary to the way of life of the People. It is an antisocial act that is at odds with accepted societal norms. A Delinquent is a person who commits a misdemeanour. Delinquency does not refer to just one age group but it is mostly attributed to illegal behaviour by minors, which is otherwise known as juvenile delinquency. Delinquent behaviour is characterized by a failure to conform to societal laws and moral standards. An individual, particularly a young person, who commits an act deemed unacceptable or criminal by society is considered a delinquent (Lewis and Salem, 2017). Deviant behaviour has increasingly become a matter of concern for all stakeholders in the education sector. It is an antisocial behaviour that contradicts the norms of society.

Academic performance remains a central focus in educational institutions and is often used as a benchmark for evaluating student success; it does not exist in a vacuum. Various psychological and social factors play a crucial role in shaping students' academic outcomes. One such factor is delinquent behaviour, which can significantly hinder a student's ability to perform academically. When students experience emotional or behavioural difficulties, their academic progress is often negatively affected. Nuhu (2019) viewed Academic performance as a top priority in each school. It is quite impressive that all stockholders are very concerned about the best strategies to encourage it among students in schools. According to him, Academic performance is seen as the result of the teaching and learning process.

It was a negative association between delinquent behaviour and physics academic performance; students who engage in higher levels of delinquency often exhibit poorer academic performance compared with their non-delinquent students. For instance, studies have shown that delinquent actions such as truancy and

absenteeism reduce contact with instructional time, thereby limiting learning opportunities and depressing scholastic achievement. Henry et al. (2012) states that, delinquent behaviours have been found to correlate with lower grades and class positions, suggesting a consistent trend where behaviour problems co-exist with academic difficulties. This study, therefore, aimed to explore the correlation between delinquent behaviour and academic performance among Physics students in Federal Unity Colleges in North-West Nigeria.

### **Statement of the Problem**

In the context of delinquent behaviour, it was observed that students who engage in delinquent behaviour, such as smoking cigarettes, abusing drugs, cheating, stealing, skipping classes, vandalizing school properties, and so on, find it difficult to cope with the demands of a normal School environment. This negatively as well as their personal development.

In the context of Academic Performance, it was noticed that the academic performance of physics students remains low over the years. Because the statistics released by the examination bodies of WAEC and NECO revealed that each time the results of Physics examinations are released, they point to the fact that students have not been performing to the required standard despite the high investment that the parents and the government have been making to ensure quality in the sector. Analysis of physics academic performance from 2017 to 2022 of Federal Unity Colleges in North West Nigeria. Indicated that, the percentage passed is higher than 50% only in 2017 and 2019, but the percentage failure is less than 50% in the remaining years. In view of this poor academic performance, the researcher intended to investigate if there exist interactive and combined relationships of School Maladjustment, Peer pressure, Delinquent behaviour, and Academic



performance among Physics Students of Federal Unity Colleges in North West Nigeria.

### **Objectives of the Study**

Specifically, the study sought to;

1. Assess the relationship between Delinquent Behaviour and Academic Performance among Physics Students of Federal Unity Colleges in North West, Nigeria.
2. Ascertain the differences in delinquent behaviour between male and female Physics Students of Federal Unity Colleges in North West, Nigeria.
3. Determine the differences in the Academic performance between male and female Physics Students of Federal Unity Colleges in North West, Nigeria.

### **Research Hypotheses**

The following hypotheses guided the study:

- 1 There is no significant relationship between Delinquent Behaviour and Academic Performance among Physics Students of Federal Unity Colleges in North West, Nigeria.
- 2 There is no significant difference in the delinquent behaviour between male and female Physics Students of Federal Unity Colleges in North West, Nigeria.
- 3 There is no significant difference in the Academic performance between male and female Physics Students of Federal Unity Colleges in North West, Nigeria.

### **Theoretical Underpinning**

Theoretical framework discussed theories that are related to and from the framework of this study. The following theories were reviewed to guide the study;

Strain theory was developed by Robert King Merton in 1938, Merton believed that the structure of society can significantly encourage deviance, as individuals are

pressured to meet socially accepted goals despite lacking the necessary means, which may result in strain and, in some cases, lead to criminal behaviour. Relationship between strain theory and delinquent behaviour can vary depending on individual characteristics, social context, and the specific nature. However, when individuals experience strain and are unable to achieve their goals through legitimate means, they may be more likely to engage in delinquent behaviour. This can include acts such as theft, drug use, vandalism, or violence. The strain experienced by individuals can be caused by various factors, such as poverty, limited educational opportunities, discrimination, or lack of social support. Merton's theory was largely shaped by the social and economic conditions in the United States during the early 20th century.

Expectancy value theory was developed by Fishbein and Ajzen in 1970. Expectancy refers to an individual's belief in their ability to perform a task successfully. This belief is based on past experiences, feedback from others, and self-evaluation. If an individual has a high expectancy for success, they are more likely to engage in academic tasks and persist in the face of challenges. Relationship between Expectancy value theory and academic performance is that, Students who believe they can succeed and find value in their studies are more likely to perform well. The theory also highlights the importance of intrinsic motivation, or the internal desire to learn and achieve, in academic performance.

### **Methodology**

The research design adopted for this study was correlational research design. Creswell (2014) defined correlational research design as any type of research design that is used to determine relationship between two or more variables. According to him, this design is used when researcher wants to



determine whether there is a relationship between the variables but does not want to manipulate the variables. The population of the study comprised all Senior Secondary School II Students of Federal Unity Colleges in North West, Nigeria. The Federal Ministry of Education has eighteen unity colleges in the North West, Nigeria. The population of the study comprised of one thousand and five (1,005) male students and one thousand one hundred and eleven (1,111) Female students with the total number of two thousands one hundred and sixteen (2,116) students.

A sample size of Nine hundred and fifty-two (952) students was selected. The sample size estimated using Research Advisors' table of selecting sample size as revised (2006) at 0.05 level of significant

and at 0.025% margin of error. Multi-stage sampling technique was used.

Initially, cluster sampling technique was adopted for the selection of states in the North West Geo-political zone. The first cluster consists of Sokoto, Kebbi and Zamfara State, the second Cluster consists of Katsina and Kaduna state while the third Cluster consists of Kano and Jigawa State. One state was randomly selected from each cluster using fishbowl sampling technique. The total number of students from the selected states were used as the sample size. Systematic random sampling technique was used in selecting students in each of the sampled schools. In this method the researcher took a fixed interval from the population out of which respondents were selected. The sample sizes were drawn using proportionate formula.

**Table 1: Sample Size**

State	Name of Schools	Male Sampled Population	Female Sampled Population	Male Sample Size	Female Sample Size	Total Sample Size
<b>Sokoto</b>	Federal Government College Sokoto	151	117	113	87	200
	Federal Science College, Sokoto	123	50	92	37	129
	Federal Government Girls College Tambuwal	00	82	00	61	61
<b>Kaduna</b>	Federal Government College Kaduna	111	86	83	64	147
	Federal Government Girls College Zaria	00	84	00	63	63
	Federal Science and Technical College Kafanchan	107	88	80	66	146
<b>Kano</b>	Federal Government College Kano	122	96	91	72	163
	Federal Government Girls College Min-Jibir	00	58	00	43	43
	<b>Total</b>	<b>614</b>	<b>661</b>	<b>459</b>	<b>493</b>	<b>952</b>

Source: Researcher Designed Table (2024)



The researcher adapted four (2) sets of instruments namely; Delinquent Behaviour Scale (DBS) and the students' academic performance (scores) in Physics from their third term examinations (2024) were also used in the research.

The Delinquent behaviour scale (DBS) was originally constructed by Jones and Bertlett (2018). The original scale has fifteen (15) items in which all the items have been selected and adapted by changing the description of the items of the questionnaire. Five questions were also added. The adopted DBS had twenty (20) items requesting information about students' experiences in relation to unwanted behaviours exhibit in school. The DBS scale is the closed ended types and its responses were rated on 4-points modified Likert scales as strongly agree (SA) = 4points, agree (A) = 3points, disagree (D) = 2point, and strongly disagree (SD) = 1points. The respondents responded to the items by a tick against the appropriate option that reflect or show their personal opinion as indicated. The scores were calculated by adding the individual scores of all the items together whose possible range is between 20 to 80marks. Based on this scale, the higher score determines high level of delinquent behaviour.

In this section of the study, the researcher utilized the academic performance data of senior secondary school (SSII) students, derived from their third-term examination results for the year 2024. These results were obtained from respective examination officers across the zone.

Both face and content validities of the instruments were ascertained. After pilot testing, Cronbach Alpha was used to establish the reliability of internal consistency of the delinquent behaviour scale (DBS). The reliability coefficient (r) is found to be 0.803. However, John and bertlett (2018), reported the reliability coefficient of the original instrument as 'r' = 0.74. The quantitative data collected were tested using inferential statistics of PPMC and t-test for independent sample. Research hypotheses 1 was tested using Pearson Product Moment Correlation (PPMC) and t-test for independent sample was used in testing hypotheses 2 and 3 However, all the analyses were carried out at .05 level of significance.

**Result**

**Hypothesis One:** There is no significant relationship between Delinquent behaviour and Academic Performance among Physics Students of Federal Unity Colleges in North West, Nigeria.

**Table 2: Relationship between Delinquent Behaviour and Academic Performance**

Variables	N	Mean	SD	r-value	p-value	Decision
<b>Delinquent Behaviour</b>	952	32.2006	5.9311	-.599	.001	Significant
<b>Academic Performance</b>		50.6261	11.7576			

PPMC at .05 alpha level of Significance  
 Table 2 reveals a moderate significant inverse relationship (r- value = -.599) which is significant at .05 alpha levels of confident (p = .001,  $\alpha < .05$ ). Since the p-value of .001 is less than that of alpha-value the null hypothesis is rejected. This means that, there is significant inverse relationship between Delinquent Behaviour and

Academic Performance among Physics students of Federal Unity Colleges in North West, Nigeria.

**Hypothesis Two:** There is no significant difference in the Delinquent Behaviour between male and female Physics Students of Federal Unity Colleges in North West, Nigeria.



**Table 3: Difference in Delinquent Behaviour between Male and Female Physics Students**

Variable	Gender	N	Mean	SD	df	t-value	p-value
<b>Delinquent Behaviour</b>	Male	459	34.5054	4.9602	950	12.474	.000
	Female	493	30.0548	5.9601			

t-test at .05 alpha level of significance

Table 3 reveals that there is significant difference in delinquent behaviour between male and female Physics students of Federal Unity Colleges in North West, Nigeria Reason being the fact that the calculated; P-value (.000) is less than  $\alpha$ -value (.05). Therefore, the hypothesis is rejected. This implies that, there is significant difference in the delinquent behaviour between male and female Physics students of federal unity colleges in North West, Nigeria, based on gender. The

table also indicates that male students had a higher mean score of 34.5054 than the female with mean score of 30.0548. This implies that, delinquent behaviour is higher in male students than their female counterpart.

**Hypothesis Three:** There is no significant difference in the Academic Performance between male and female Physics Students of Federal Unity Colleges in North West, Nigeria.

**Table 4: Difference in Academic Performance between Male and Female Physics Students**

Variable	Gender	N	Mean	SD	df	t-value	p-value
<b>Academic Performance</b>	Male	459	52.7124	12.50380	950	5.359	.000
	Female	493	48.6836	10.66914			

t-test at .05 alpha level of significance

Table 4 reveals significant difference in the academic performance between male and female physics students of Federal Unity Colleges in North West, Nigeria. Reason being the fact that the calculated; P-value (.007) is less than  $\alpha$ -value (.05). Therefore, the null hypothesis is rejected. This implies that, there is significant difference in the academic performance between male and female Physics students of Federal Unity Colleges in North West, Nigeria, based on gender. The table also identifies that male students had a higher mean score of 52.7124 than the female students with a mean score of 48.6836. This implies that,

academic performance is higher in male students than in female students.

**Discussion of findings**

Hypothesis one stated there is no significant relationship between Peer Delinquent behaviour and Academic Performance among Physics Students of Federal Unity Colleges in North West, Nigeria. After testing this hypothesis, the null hypothesis was rejected. This means that there is a significant relationship between Delinquent behaviour and academic performance. These findings supported Tieku et al. (2015), who found that delinquent behaviour is a result of poor academic



performance. It was suggested that, the remedies to delinquent behaviours are punishment, guidance and counselling, proper monitoring of pupils by parents and reporting of children to their teachers when they misbehave. Remy (2020) in his study, Perception of Students about Delinquent Behaviour and how It correlates with Academic Performance in Northwest and Southwest regions, Cameroon. Revealed that school bullying still exists in most schools and relate positively to students' academic performance and school attendance.

Hypothesis two stated there is no significant difference in the influence of delinquent behaviour between male and female Physics Students of Federal Unity Colleges in North West, Nigeria. After testing this hypothesis, the null hypothesis was rejected. This means that there is a significant difference in the delinquent behaviour between males and females in the area. This finding aligns with Joseph (2008), who noted significant differences in delinquent behaviours between male and female children but found no notable difference in the types of issues contributing to their truancy. Similarly, Kennedy and Florence (2020) investigated delinquent behaviours among secondary school students in Oredo Local Government Area, Edo State, and discovered significant behavioural differences between male and female students. Valentin and Martha (2022) explored antisocial and criminal behaviours in adolescence and proposed guidelines for educational prevention. Their study found that boys displayed more transgressive behaviours than girls, though not across the board, but in specific behaviours measured by the questionnaire. Stephen and Peggy (1979) conducted a comparative analysis of delinquent behaviours between males and females in a Midwestern state in the U.S., revealing that males committed more offenses overall, although the delinquency

patterns were nearly identical for both genders. Similarly, Dembo et al. (2015) identified gender differences in delinquent behaviours, with males engaging in higher-risk behaviours, particularly in sexual contexts, compared to females.

Hypothesis three stated there is no significant difference in the influence of academic performance between male and female Physics Students of Federal Unity Colleges in North West, Nigeria. After testing this hypothesis, the null hypothesis was rejected. This means that there is a significant difference in the academic performance between males and females in the area. Bottomley et al. (2022) examined the connection between gender and academic performance among undergraduate physics students, focusing on the roles of physics identity, perceived recognition, and self-efficacy. Their analysis revealed that women scored lower than men in physics identity and self-efficacy at both the beginning and end of the academic year. Similarly, Olasimbo (2022) found that female students performed just as well as their male counterparts in physics achievement. However, this aligns with Owolabi's (2013) findings, which indicated that gender does not play a significant role in physics performance, as both male and female students achieved comparable results in their practical work.

### **Conclusion**

Delinquent behaviour significantly correlates with the physics academic performance of SS II students of federal unity colleges in North West, Nigeria. The study indicated a negative moderate correlation between delinquent behaviour and academic performance. This means that, a change in delinquent behaviour makes a change in academic performance. There is a significant gender difference in Delinquent behaviour between male and female physics Students. This is because



the mean score of male students was greater than that of the female students, male students experience more delinquent behaviour than the female students. Finally, there is also a significant gender difference in Academic performance between male and female physics students. Since the mean score of male students was greater than that of the female students, male students perform better academically than female students.

### Recommendations

The following recommendations were made:

- a. School management should liaise with Counselling centres in order to manage extreme cases of delinquent behaviour specially. Therefore, Students should be enlightened about the relevance of delinquent behaviours on their Academic performance.
- b. The ability to adjust delinquent behaviour will effectively help both male and female students to handle flexibility in situational demands and goals needed in a variety of conditions.
- c. Physics teachers should ensure that all students, both male and female, are given equal opportunity in physics lessons by giving students equal attention, fair tasks, and inspiring students through mixed group work and projects. This will help close the gap between male and female students concerning their performance in physics.

### Reference

Bottomley, E., Kohnle, A., Mavor, K., Miles, P.J & Wild, V. (2022). The relationship between gender and academic performance in undergraduate physics students: the role of physics identity, perceived recognition, and self-efficacy. *European Journal of Physics*, 44,

(2). <https://doi.org/10.1088/1361-6404/aca29e>

Creswell B. (2014). *Psychological Maladjustment and Academic Achievement: A Cross-Cultural Study of Japanese, Chinese, and American High School Students*.

Crossman, A. (2017). *Sociological explanations of deviant behaviour: Theories of crime and deviance/boundless sociology*. <https://courses.lumenlearning.com>

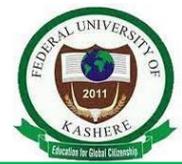
Dembo, R., Wareham, J., Krupa, J., & Winters, K. C. (2015). Sexual risk behavior among male and female truant youths: Exploratory, multi-group latent class analysis. *Journal of Alcoholism and Drug Dependence*, 3(6), 226- 236.

Joseph, A. (2008). A study of elementary school children at risk for truancy: Exploring gender differences, services offered, and other factors related to truancy. Unpublished Master Degree Theses Graduate Faculty, Louisiana State University and Agricultural and Mechanical College.

Kennedy, M. & Florence, I. (2020). Delinquent Behaviours Exhibited by Secondary School Students in Oredo Local Government Area, Edo State. Institute of Education, University of Benin, Benin City, Nigeria. *Benin Journal of Social Work and Community Development* Vol. 1, September 2020, pp. 44-56.

Lewis, D. A., & Salem, G. W. (2017). *Fear of crime: Incivility and the production of a social problem*. Routledge.

Merton, R. (1938). "Social Structure and Anomie". *American Sociological*



- Review. 3 (5): 672–682. Doi:10.2307/2084686. JSTOR 2084686*
- Nuhu, U.N. (2019). *Influence of Emotion and Locus of control on Academic Performance among Senior Secondary School in Katsina Metropolis*. Unpublished Dissertation Submitted to the Department of Education, Faculty of Education, Umaru Musa Yar'adua University, Katsina, in Partial Fulfilment of the Requirements for the Award of the Degree of Master in Educational Psychology. M.Ed./14/PSY/0012.
- Olasimbo, A.O. (2022). Influence of Gender on Students' Achievement and Attitude towards Physics in Secondary Schools in Ondo State, Nigeria. *International Journal of Research in Education and Sustainable Development | ISSN: 2782-7666 Vol. 2, Issue 6 (June, 2022) | www.ijaar.org*.
- Owolabi, O. T. (2013): *A Diagnosis of Students' Difficulties in Physics*. Education Perspective. 7; 15-20.
- Remy, M.M. (2020). *The Perception of Students about School Bullying and How It Affects Academic Performance in Cameroon*. A thesis submitted to the School of Graduate Studies in partial fulfilment of the requirements for the degree of Master of Education (Curriculum Teaching and Learning Studies), Faculty of Education, Memorial University of Newfoundland.
- Stephen A. C. & Peggy C. G. (1979). A comparative analysis of male and female Delinquency behaviour. *The Sociological Quarterly*. Vol. 20, No. 1 (Winter, 1979), pp. 131-145 (15 pages).  
<https://www.jstor.org/stable/4106393> . Retrieved, 2023.
- Tieku, S.J., Soku, R. & Esilfie, G. (2015). Child Delinquency and Pupils' Academic Performance in Fumesua Municipal Assembly Primary School in the Ejisu-Juaben Municipality, Ashanti Region, Ghana *Journal of Education and Practice*. ISSN 2222-1735 (Paper) ISSN 2222-288X (Online). Vol.6, No.12, 2015.
- Valentin, M.O. & Martha, L.G. (2022). *Educational Prevention of Antisocial and Delinquent Behaviour in Brazilian Adolescents*. *Psicothema*, 34(4), 544-552.  
<https://doi.org/10.7334/psicothema.2022.118>.