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Relationship Between Reward and Punishment on Secondary School Students' Academic Performance in Physics in Oju Local Government Area of Benue State, Nigeria

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ABSTRACT

This study was carried out to investigate the relationship between reward and punishment in the academic performance of Integrated Science Students of secondary schools in Oju local government area of Benue state. Three research questions guided the study. The survey design was adopted for the study. The study population was 1,986 Integrated Science teachers and Students in the study area, the researcher used random sampling technique to determine the sample size of the study. The researcher made 300 questionnaires which was used to elicit data from the respondents. The research instrument had 21 items based on the study variables. Based on the finding, it was concluded that, the professional teachers here must be those who have mastery of psychology, classroom management, and measurement, and evaluation. This will guarantee the effective use of reward and punishment in classroom setting and the achievement of desirable change in students' behaviour as well as educational goals. Based on the conclusion, the following recommendation were made, federal and state government through the ministry of Education should set up boards of supervision or monitory board who goes around the secondary schools and find out the extent of the use of reward and punishment to avoid having square pegs in round holes, Teachers should administer reward and punishment appropriately and note that the extent and adequacy of utilization of the both affect their classroom objective, The teachers should remove sentiment in rewarding the students, hence they should mostly make use of praise, and commendations.

KEYWORDS: Reward, Punishment, Relationship, Achievement, Integrated Science.

Introduction

Education is a fundamental aspect of human development, and secondary schools play a crucial role in shaping the academic foundation of students. The academic performance of students in secondary schools is influenced by various factors, including teaching methods, curriculum, parental support, and peer interactions. Among these factors, rewards and punishments have been widely debated for their impact on student performance. This study delves into the intricate relationship between rewards, punishments, and academic performance.

Rewards, both tangible and intangible, have long been used as motivational tools in educational settings. According to Deci and Ryan (2017), rewards can serve as extrinsic motivators, encouraging students to engage in desired behaviours such as studying, completing assignments, and participating in class activities. In the context of secondary education, tangible rewards may include certificates, scholarships, or praise from teachers, while intangible rewards may encompass a sense of accomplishment, increased self-esteem, or a feeling of competence

Recent research by (Vallerand Robert, Mark Blais, Nathalie Litalien, and Claude Provencher., 2020) suggests that the effectiveness of rewards in promoting academic performance depends on their autonomy-supportive nature. Autonomy-supportive rewards allow students to feel a sense of choice and control in their learning process, enhancing intrinsic motivation. Conversely, when rewards are controlling and used as external pressures, they may lead to short-term compliance but hinder long-term engagement and learning (Vallerand et al., 2020). On the other hand, Punishments are used to deter undesirable behaviours and maintain discipline within educational institutions. Recent studies, such as those by (Vallerand et al., 2020), acknowledged the potential role of punishments in curbing academic misconduct, truancy, and disruptive behaviour in secondary schools. However, the effectiveness of punishments in promoting positive academic outcomes remains a contentious issue.

It is essential to note that the use of punitive measures in education has raised ethical concerns and has been associated with adverse consequences, including increased stress and anxiety among students (Vallerand et al., 2020). Therefore, understanding the appropriate application and potential drawbacks of punishments is crucial when examining their role in academic performance. While the impact of rewards and punishments on student behaviour has been extensively studied, there is still a need for a comprehensive understanding of their effects on academic performance in secondary schools. Research has begun to explore the nuances of motivation and behaviour in educational contexts, suggesting that the effectiveness of rewards and punishments depends on various factors, including their timing, frequency, and the context in which they are applied.

This study aims to bridge this gap by examining the relationship between rewards and punishments in secondary school students' academic performance within the contemporary educational landscape. By considering recent findings on motivation and behaviour, this research seeks to provide valuable insights for educators, policymakers, and parents to inform their strategies for promoting positive academic outcomes while nurturing students' intrinsic motivation and well-being.

There are a number of different types of rewards and punishments that can be used in Education, for example reward can include things like praise, verbal encouragement, stickers, and even tangible rewards like prizes or money. Punishment on the other hand can include things like scolding, disapproval, or even physical punishment. It is important to note that the use of physical punishment in Education is widely considered to be unethical and ineffective and is prohibited in many Schools, so the researcher will be focusing on other types of reinforcements. Recognizing and celebrating academic performance through reward systems can cultivate a positive and enriching learning atmosphere (Schunk & Mullen, 2012). This is because rewards are positive reinforcements that encourage students to repeat the

behaviour that led to the reward, while punishments are negative reinforcements that discourage students from repeating the behaviour that led to the punishment. There have been a number of studies that have looked at the impact of rewards and punishments on academic performance. For example, one study found that students who were rewarded for academic performance with praise and verbal encouragement performed better than students who were punished for poor academic performance with scolding or disapproval. Another study found that tangible rewards, such as prizes or money were more effective than punishments in motivating students to improve their academic performance. (Shehu Yahaya 2022).

One common research method used in studies of rewards and punishments is the use of experimental groups and control groups. In these studies, students in the experimental group are given a specific reinforcement, such as reward or punishment, while students in the control groups are not given any reinforcements. Then the academic performance of the students in both groups is measured and compared. This allows the researcher to isolate the effect of reinforcement on academic performance.

Theories, such as positive and negative reinforcement suggest that rewards and punishments can be used to influence behaviour, and research on motivation suggests that incentives can be used to improve academic performance (Vallerand et al., 2020). The use of reward and punishment in the educational context is not as simple as it seems. While rewards and punishments may have an immediate effect on student's behaviour, they may also have unintended consequences that impact a student's long-term motivation and academic performance. It's important for educators to consider the complex way that rewards and punishments can influence students, and to use these tools carefully and thoughtfully (Samuel Agyekum 2021).

The issues of reward and punishment are mostly debated among the secondary school administrators today most especially in the teaching and learning process. It is equally an area of interest, to both teachers and parents seeking to know the standard prescribe by the authority. Scholars such as John Dewey, Maria Montessori and Rousseau's Emile in their books suggested allowing nearly total freedom to children in learning process in the schools. It is at this background that this study set to investigate the relationship between rewards and punishment on students' academic performance of secondary school in Physics in Oju Local Government area of Benue State.

Statement of the Problem

In secondary schools, the academic performance of Physics students is of paramount importance as it lays the foundation for a solid scientific education. To optimize student performance, educators have long employed a combination of rewards and punishments as motivational tools. However, there exists a significant gap in our understanding of the intricate dynamics between these motivational strategies and their impact on students' performance in Physics.

The central problem revolves around the uncertainty of the effectiveness of rewards and punishments in improving academic performance. This problem can be dissected into several specific dimensions. Which are: Differential Impact; There is a lack of clarity regarding

whether rewards or punishments have a more significant impact on the academic performance of Physics students. It remains unclear whether one strategy is more effective than the other or if a combination of both yields better results.

Long-term vs. Short-term Effects: It is unclear whether rewards and punishments primarily drive short-term improvements in academic performance or if they have a lasting impact on students' motivation, engagement, and overall learning outcomes in Physics. Psychological and Behavioural Effects: The psychological and behavioural effects of rewards and punishments on students' attitudes towards learning integrated science require examination. Do these strategies foster a genuine interest in the subject, or do they merely promote compliance and surface-level engagement?

Individual Differences: Students have unique personalities, learning styles, and motivations. Investigating how rewards and punishments interact with individual differences, such as intrinsic motivation, self-regulation, and prior academic performance, is crucial to understanding their differential impact on Physics students. Ethical and Moral Considerations: The use of punishments and rewards raises ethical concerns related to fairness, equity, and the potential for unintended consequences, such as demotivation, anxiety, or a focus on extrinsic rewards to the detriment of genuine learning. Hence, this study is set to investigate the relationship between reward and punishment in the academic performance of students of Physics in Secondary Schools in Oju Local Government area of Benue state.

Purpose of the Study

The purpose of this study is to investigate the relationship between reward and punishment in the academic performance of Physics students of secondary schools in Oju Local Government area of Benue state. Specifically, the study sought to:

i. Find out the relationship between praise, gift and commendation as a form of motivation in improving performance in secondary school.

ii. determine the relationship between flogging, grass cutting etc, as form of punishment and academic performance of students in secondary school.

iii. investigate to what extent does reward and punishment discourage good academic performance among students.

Research Questions

The following research questions were formulated to guide the study:

i. What is the relationship between praise, gifts and commendations as form of motivation in improving performance of students of Physics in Secondary Schools in Oju Local Government Area of Benue State?

ii. What is the relationship between flogging, grass cutting e.t.c, as forms of punishment influence academic performance of students of Physics in secondary school in Oju Local Government of Benue state?

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iii. What is the relationship between teacher's consideration in administering reward and punishment to Students?

Method

Survey research design was used for this study. The population of the study comprises of forty (40) approved secondary schools in Oju local government area of Benue state. The population of the study therefore is 1,986, that is 1,911 students of Physics and 75 teachers in Oju Local Government area. 260 students were randomly selected from 10 schools in Oju Local Government area and 40 teachers making a total of 300 sample for the study. Simple random sampling technique was used to select the sample for the study, and students of Physics were selected randomly from SSI to SSIII classes in each school.

The instrument used in this study was structure questionnaire which was developed by the researcher. 16 items were constructed based on three research questions formulated for the study. The questionnaire was made up of the four scale of: Strongly agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2 and Strongly disagree (SD) = 1. The questionnaire was validated by three experts. The reliability of the instrument was obtained based on a test-retest method. The responses were correlated using Pearson Product Moment Co-efficient (PPMC). The correlation result was 0.90 which shows a very high relationship indicating that the instrument was reliable enough for the study. The researcher administered the questionnaire to the 10 schools selected with the help of the research assistants. The questionnaires were collected from the respondents (teachers and students) after answering and the result was kept for analysis. The research questions were answered using descriptive statistics of mean and standard deviation.

Results

Research Question 1: What is the relationship between praise, gifts and commendations as a form of motivation and academic performances of secondary school Physics students?

Table 1 Mean Distribution of Response on the Relationship Between Praise, Gifts and Commendations on Physics Student's Performance in Oju L.G.A. of Benue State

S/N	ITEMS	X	SD	DECISION
1	Praise, gifts and commendations enables the students to achieve better learning motivation.	3.07	0.15	Accepted
2	Rewards enable students to accomplish a particular task given to them by the teacher	2.90	0.14	Accepted
3	Rewards are motivational approach for controlling of students' behaviours to a desirable change.	2.83	0.14	Accepted
4	Reward can increase the students' interest in achieving certain level of educational goal.	3.07	0.15	Accepted
5	Reward do make students to work very hard and improve their academic perfor4mance	3.13	0.15	Accepted

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	Average Mean	3.00	0.15

In the table one above, items 1-5 with their corresponding mean score of 3.07, 2.90, 2.83, 3.07 and 3.13, respectively were all agreed. Thus, the mean average of the scores gave 3.00 and that of standard deviation was 0.15. Therefore, the results show that reward plays significant roles in improving academic performance of student. Hence, gift and commendations as a form of reward has the tendency of enabling the students to achieve better learning motivation, increase students' interest in achieving certain level of educational goal, makes them work very hard and improve performance, controls student behaviour to a desirable change.

Research Questions 2: what is the relationship between flogging, grass cutting etc as a form of punishment and academic performance of Physics students in Oju L.G.A. of Benue State?

Table 4:2 Mean Distribution of Response on Flogging, Grass Cutting etc as a Form of Punishment and Academic Performance of Physics Students in Oju L.G.A. of Benue State.

S/N	ITEMS	X	SD	REMARK
1	Flogging and grass cutting etc discourage intrinsic motivation of students in learning process which can lead to better performance	2.1	0. 14	Rejected
2	Flogging and grass cutting etc encourage active participation of students in learning process which can lead to better performance	2.7	0.16	Accepted
3	Grass cutting will discourage a student to work hard and improve academic performance	2.4	0.15	Rejected
4	Fear of flogging and grass cutting control behaviour to a desirable change and improve performance.	2.8	0.15	Accepted
5	Flogging and grass cutting decrease student's attention during learning process and thereby serve as effective classroom management and academic performance	2.4	0.17	Rejected
6	Punishment can kill intrinsic motivation of student to learn.	2.9	0.16	Accepted
	Average Mean	2.55	0.16	

Considering the analysis in table 2, shows that the mean score of respondents on items 2,4 and 6 are above the cut-off point of 2.5 on the four points scale. This shows that items 2,4 and 6 are accepted while items on 1,3 and 5 are below the cut-off point of 2.5, hence they

are rejected. But the average mean scores is 2.55 and that of standard deviation is 0.16. The results thus, show that flogging, grass cutting etc as a form of punishment affect students' academic performance in that they make students work hard so as to avoid being punished, they control behaviour of students to a desirable change for learning, increase students' attention during learning process, etc.

Research Question 3: What is the relationship between teacher's consideration in administering reward and punishment?

Table 4:4 Mean Distribution of Response on the Relationship Between Teacher's Consideration in Administering Reward and Punishment

S/n	ITEMS	X.	SD	REMARK
1	Teachers should use verbal reward as it does not cost as such but pays greatly.	3.35	0.16	Accepted
2	Classmates should be involved in rewarding the deserved colleagues. This will help to curtail the tendency of jealousy.	2.83	0.14	Accepted
3	Punishment must be painful or unpleasant to the offender so as to reduce the undesirable behaviour.	3.10	0.15	Accepted
4	Teachers must always maintain a friendly attitude towards the student being punished.	3.13	0.15	Accepted
5	Punishment must be administered immediately an offence is discovered and not after.	2.90	0.14	Accepted
	Average Mean	3.06	0.15	

Finally, in the table three above, items 1-5 with their corresponding mean score of 3.35, 2.83, 3.10, 3.13, and 2.90 were all agreed because their mean scores were above the agreed level of 2.50. Hence, the average mean score of the respondents is 3.06 and the average standard deviation is 0.15. Therefore, the results show that Teachers should use verbal reward as it does not cost as such but pays greatly, Classmates should be involved in rewarding the deserved colleagues. This will help to curtail the tendency of jealousy, punishment must be painful or unpleasant to the offender so as to reduce the undesirable behaviour, teachers must always maintain a friendly attitude towards the student being punished, Punishment must be administered immediately an offence is discovered and not after.

Discussion of Results

Research Question one examined the relationship between praise, gifts and commendations as a form of motivation and academic performances of Physics students in Oju Local Government Area of Benue State. Items 1-5 were constructed to answer the research questions. Their corresponding mean values were constructed to answer the research questions 1. Their corresponding mean values were all accepted since they were up to 2.5 and above. The findings therefore revealed that the relationship between praise, gifts and commendations on students' performance is that, reward plays significant roles in

improving academic performance of student. Hence, praise, gift and commendations as a form of reward have the tendency of enabling the students to achieve better learning motivation, increase students' interest in achieving certain level of educational goal, makes them work very hard and improve performance, controls student behaviour to a desirable change.

The above findings were supported by the views of Nwachukwu, (2007) when he opined that the use of praise, handshaking, clapping, etc increase the students' zeal to learn more. He added that a good classroom manager should motivate the students whenever they perform well; hence this has impact on their performance that can guarantee the achievement of classroom objectives. Furthermore, Bello, Hosea and Michael (2023) revealed that, rewards have more positive influence on academic performance of students than negative rewards, It's indicates that reward motivates students to engage in additional assignments which are more challenging and can lead to high academic performance of students.

Research question 2, which assesses the relationship between flogging, grass cutting etc as a form of punishment influences academic performance of students. Six (6) item or instruments were constructed as response to the research question 2. The mean values 2.7, 2.8, 2.9 were accepted. The findings thus revealed that flogging, grass cutting etc encourages active participation of students in learning process, which can lead to better academic performance, Grass cutting will kill intrinsic motivation to learn, punishment increases students' attention for better learning, etc. the findings also was in line with the opinion of Nwachukwu (2007) when he emphasized that punishment is a method of controlling undesirable behaviour to desirable change. It makes the learner to pay undivided attention to classroom instruction; Kusumanati, Pauziddin and Ananda (2023) also supported these findings by maintaining that reward and punishment are good instrument of modifying student behaviour for better learning.

Research question 3, which examines the relationship between teacher's considerations in administering reward and punishment. The items 17-21 were accepted at 2.5 weighted mean. The findings revealed that teachers should use verbal rewards, involve classmates in rewarding the deserved colleagues, administer punishment immediately an offence is discovered, maintain friendly attitude towards the students who are punished etc. these findings were in line with the view of Orji (2023) in which he listed some of the ways teachers should administer reward which include the use of praises, commendations, involving the classmates in rewarding the deserved mates, explaining the reasons for the reward, etc. while Symond (2006) opined what teachers should observed while carrying out punishment on student, that he must explain the reason for the punishment, administer punishment immediately if an offence is discovered, maintain friendly attitude toward the students being punished.

Conclusion

Education is a process of developing the individuals' capabilities and potentialities so that they can become useful to themselves and the society at large. Hence it cannot be functional, adequate without the use of qualified teachers who are dedicated, devoted and passionate in the teaching profession. The professional teachers here must be those who have mastery of psychology, classroom management, and measurement, and evaluation. This will guarantee

the effective use of reward and punishment in classroom setting and the achievement of desirable change in students' behaviour as well as educational goals.

.**Recommendations**

The following recommendations are made based on the findings of the study:

i. Teachers and school administrators should regularly use **praise, commendation, and appropriate rewards** to motivate students, as positive reinforcement can encourage greater interest in learning and improve students' academic performance.

ii. School authorities should ensure that **disciplinary measures are moderate and constructive**, avoiding excessive physical punishment while promoting corrective strategies that support students' academic development.

iii. Teachers should adopt a **balanced approach to reward and punishment**, emphasizing positive reinforcement while using punishment only when necessary to guide students toward improved academic behavior.

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