
**A Critical Analysis of Motivational Teaching Strategies of Basic
Science Teachers and Academic Performances of
Preschoolers in Akwa Ibom State**

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ABSTRACT

The study was to assess the motivational teaching strategies of basic science teachers and academic performances of preschoolers in Akwa Ibom State. The study adopted an Expost-Facto research design conducted in Akwa Ibom State. The population of the study consisted of teachers teaching basic science and preschoolers in nursery schools in Akwa Ibom State. The study selected 8 school. From each of the school 5 teachers and 30 preschoolers were selected and used for the study, which gave a total sample size of 280 respondents (made up of 40 teachers and 240 preschoolers. The instrument used by the researcher for the study was a questionnaire tagged "Motivational Teaching Strategies and Academic Performances Questionnaire (MTSAPQ)." Face and content validation of the research instrument was carried out by an expert in tests and measurement. From the analysis, the reliability coefficient 0.82 was obtained and the value was considered substantially high enough to justify the use of the instrument. The data obtained was analyzed using descriptive statistics and regression analysis for research questions and hypotheses respectively. The calculated values were compared with the critical values for the test of significance of the result at 0.05 alpha level. The study concluded that motivational teaching strategies improve the academic performance of preschoolers. The study suggests that when teachers are caring, and supportive the teaching learning process over the performance outcomes, and when they give feedback, children tend to be motivated to achieve and to expect success. However, motivation is the state that can maintain preschoolers' attention and behavior as well as provide them with the energy needed to lead tasks to achievement. One of the recommendations made was that basic science teachers should adopt motivational teaching strategies such as curiosity, extrinsic, and intrinsic to improve preschoolers' academic performance.

KEYWORDS: Motivational Teaching Strategies, Basic Science, Teachers, Academic Performances, Preschoolers and Akwa Ibom State

Introduction

Basic science teachers are key actors who shape the learning environment and whose main tasks include motivating preschoolers to learn. Basic science teachers can differ in the way in which they try to motivate preschoolers to learn, and their motivational strategies can vary from person to person (Hornstraa, Mansfield, van der Veen, Peetsmaa, & Volman, 2015). A basic science teacher has only to develop goals that focus on mastery rather than on the performance of a task. Preschoolers need to internalize that it is more important to focus on if and how they learned and not on whether they did better than their classmates. Consequently, the focus shifts from a performance goal to a mastery goal. Basic science teachers, therefore, need to develop goals oriented toward developing students' abilities and not toward adequacy of their abilities. So, the teachers' motivational strategies in the classroom are very essential to achieving the preschooler's academic achievement (Lawrence & Hanitha, 2017). Basic science teachers usually hold very stable, long-term beliefs about the nature of preschoolers' motivation and the particular motivational strategies that are effective in motivating their preschoolers (Turner 2010). Basic science teacher beliefs are developed through teachers' own experiences as learners, their initial teacher training, as well as their professional experience as teachers.

Education as an objective process did not take much of the learner's interests into consideration. Akintayo and Onabanjo (2008) stated that the effectiveness of any teaching method depends to a large extent on how motivated the learner is. The motivation of the learner enhances the learner's participation. Motivation is one of the factors that contribute to academic performance. Parents and educators should strive to understand the importance of promoting and encouraging academic motivation early in life. (Moula, 2010). It is becoming increasingly recognized that the learning environment is an important factor in explaining preschoolers' motivation for school and their learning outcomes. In this study, the term "motivational strategies" refers to all teaching strategies aimed at encouraging preschoolers' learning. This term also refers to those strategies that motivate preschoolers by pressuring them. Such controlling strategies might not appeal to preschoolers' intrinsic or autonomous motivation, but instead to their controlled motivation (Ryan and Deci 2000a). However, motivation in education can have a dramatic impact on students' performance and results. Therefore, parents and teachers who are willing to help their children do better in school should be aware of the factors that affect student motivation.

Statement of the Problem

Over the years, there has been a prevalent issue concerning the education sector on how to ensure that preschoolers learn optimally at school and achieve academic excellence in their academic pursuits. In Akwa Ibom State, there has been a cry about the fallen standards of education and the poor performance of preschoolers in basic science. However, various factors have been identified for poor academic performance among preschoolers, and these include poor study habits, laziness, ineffective classroom instructions, inadequate provision of instructional materials, and lack of motivation.

Objectives of the Study

This study aims at analyzing the effects of motivational strategies and the academic performance of preschooler's in basic science in Akwa Ibom State. The specific objectives of the study are:

1. To find out the effect of enhancement of preschooler's curiosity by the basic science teacher on the academic performance of preschoolers in Akwa Ibom State.
2. To examine the effect of extrinsic and intrinsic motivational strategies on the academic performance of preschoolers in Akwa Ibom State.

Research Questions

1. What is the effect of enhancement of preschooler's curiosity by the basic science teacher on the academic performance of preschoolers in Akwa Ibom State?
2. What is the effect of extrinsic and intrinsic motivational strategies on the academic performance of preschoolers in Akwa Ibom State?

Hypotheses

1. There is no significant effect of enhancement of preschooler's curiosity by the basic science teacher on the academic performance of preschoolers in Akwa Ibom State.
2. There is no significant effect of extrinsic and intrinsic motivational strategies on the academic performance of preschoolers in Akwa Ibom State.

Conceptual Review

Concept of Motivation

Motivation is a process of interaction between the learner and the environment that is marked by the selection, initiation, increase, or persistence of goal-directed behavior. It has been thought of variously as a quality of the individual, the situation, or the activity in which the individual is engaged (Svinicki & Vogler, 2018). Motivation is essential to the operation of organizations and classroom activities. The behavior is caused by certain causes that relate to a person's needs and the consequences that result from their actions. Motives are expressions of a person's needs. Incentives, on the other hand, are imposed on the individual (Edugyan, 2017). Motivation doesn't just refer to the factors that activate behaviors; it also involves the factors that direct and maintain these goal-directed actions (though such motives are rarely directly observable). As a result, we often have to infer the reasons why people do the things that they do based on observable behaviors. The term "motivation" is derived from the Latin word "movere," meaning "to move". Motivation can be defined as a combination of motive and action. Ormrod (2008) defines motivation as an internal state that arouses us to action, pushes us in a particular direction, and keeps us engaged in certain activities. Motivation is the process of stimulating people to action to accomplish desired goals.

Motivation is the state of the individual which disposes him to certain behaviors for the purpose of seeking a goal. Motivation in school learning involves arousing, persisting,

sustaining, and directing desirable behavior. According to Hurst (2019), motivation is described as a state that energizes, directs, and sustains behavior. Motivation involves goals and requires activity. Goals provide the impetus for and the direction of action, while action entails effort and persistence in order to sustain an activity for a long period of time. Motivation can be defined as an inner state that activates, energizes, or moves behavior towards a goal (Gupta, 2014). Motivation is typically defined as the forces that account for the arousal, selection, direction, and continuation of behavior. Nevertheless, many teachers have at least two major misconceptions about motivation that prevent them from using this concept with maximum effectiveness. Motivation might be defined as the mental and inner states of employees performing jobs or activities in order to satisfy needs, wants, expectations, and desires (Islam, 2001). Motivation is the process of inspiring people in order to intensify their desire and willingness to execute their duties effectively and to cooperate to achieve the common objectives of an enterprise. However, it involves the biological, emotional, social, and cognitive forces that activate behavior.

Concept of Teaching Strategies

Teaching strategies refer to methods used to help students learn the desired course content and be able to develop achievable goals in the future. Teaching strategies identify the different available learning methods to enable them to develop the right strategy to deal with the target group identified (Armstrong, 2020). Teaching strategies, also known as instructional strategies, are methods that teachers use to deliver course material in ways that keep students engaged and practicing different skill sets. An instructor may select different teaching strategies according to unit topic, grade level, class size, and classroom resources (Kathy, 2022). Many kinds of instructional strategies are employed to achieve teaching and learning goals and support different kinds of students. A teaching strategy is a generalized plan for a lesson(s) that includes the structure of desired learner behavior in terms of instructional goals as well as an outline of planned tactics to implement the strategy. Teaching strategies refer to methods used to help students learn the desired course content and be able to develop achievable goals in the future (Sarode, 2018). Teaching strategies identify the different available learning methods to enable them to develop the right strategy to deal with the target group identified.

Teaching strategies are methods and techniques that a teacher will use to support their pupils or students through the learning process. A teacher will choose the teaching strategy most suitable to the topic being studied, the level of expertise of the learner, and the stage in their learning journey (Anilkumar, 2022). A teacher may utilize a variety of teaching strategies with various end goals in a single lesson. The most successful teaching methods are those that have been demonstrated to work in large-scale studies. It is not necessary for a teaching strategy to be innovative, but some of them are. A teaching strategy is a generalized plan for a lesson that includes structure, instructional objectives, and an outline of planned tactics necessary to implement the strategies. Issac (2010) stated that teaching strategies are that behavior of the teacher which he manifests in the class, i.e., the development of the teaching strategies, giving proper stimulus for timely responses, drilling the learnt responses, increasing the responses through extra activities, and so on. The teaching strategy results in a didactic approach to teaching and learning, combining and optimizing the methods, means, and forms of grouping of the participants (Cerghit, 2006). Teaching strategies are the practices teachers use to engage their students in better learning. One of the most

difficult tasks for a teacher is analyzing the teaching strategies that will work best with their students so that they can get the most out of their education.

Enhancement of Preschooler's Curiosity by the Basic Science Teacher and Academic Performance of Preschoolers

Academic performance is an indicator of the level of knowledge and skills acquired by students as a result of training or experience. High academic achievement is not possible without the presence of intelligence, but the presence of high intelligence is not a guarantee of high academic performance (Spinath, 2012). Curiosity plays a role in increasing academic achievement by motivating individuals to think further about the information they have received. Students who are curious will be aware of information gaps so that they become motivated to find answers and actively investigate the subject to resolve their curiosity (Nurishlah, Budiman, & Yulindrasari, 2020). Curiosity as a motivation for improving academic achievement is associated with biological drives such as hunger and thirst. Therefore, it can be seen why curiosity leads to feelings of deprivation, because curiosity requires a satisfying factor, namely information. Information is also considered a reward for those who thirst for information. So, when people of a certain socioeconomic status want to know something, they will learn a lot, and those who learn a lot will increasingly realize the information gap they feel (Litman, 2005). Motivation to reduce knowledge gaps is what drives students' needs in mastering learning materials.

Enhancement of students' curiosity is synonymous with the student-centered method of teaching, which is the concept of discovery learning. Many scholars today widely adopt more supple student-centered instructional strategies to enhance active learning (Greitzer, 2002). Most teachers today apply the student-centered approach to promote interest, analytical research, critical thinking, and enjoyment among students. The strategy is regarded as more effective since it does not centralize the flow of knowledge from the teacher to the student. The strategy also motivates goal-oriented behavior among students, so the method is very effective in improving student achievement (Hesson & Shad, 2007). This teacher-student interactive approach applies the strategies used by both teacher-centered and student-centered approaches. The subject information produced by the learners is remembered better than the same information presented to the learners by the teacher. The method encourages the students to search for relevant knowledge rather than the teacher monopolizing the transmission of information to the learners (Ganyaupfu, 2013). As such, research evidence on teaching approaches maintains that this method is effective in improving students' academic performance.

Extrinsic and Intrinsic Motivation Strategies and Academic Performance of Preschoolers

Motivating students to learn in school is a topic of great concern for educationists today, and motivating students so that they can succeed in school is one of the greatest challenges of this century (Awan, Noreen & Nas, 2011). Getting students to learn and sustaining their interest in what they are learning should therefore be the sole objective of teachers in the classroom. Motivation is a significantly important factor for academic learning and achievement (Elliot & Dweck, 2005). Motivations are reasons individuals have for behaving in a given manner in a given situation. According to Mangal (2010), there is something that energizes and compels an individual to act and behave in a specific way. The two distinct types of academic motivation mentioned here interrelate

in most academic settings, which are intrinsic and extrinsic motivation. Extrinsic motivation involves rewards that occur outside of the learner's control. These may include token economic rewards for good performance, peer acceptance of good performance, avoidance of "punishment" by performing well, praise for good work, and so on. Students who are extrinsically motivated engage in academic tasks to obtain rewards (e.g., good grades, approval) or to avoid punishment (e.g., bad grades, disapproval). These students' motivations tend to center on such performance goals as obtaining favorable judgments of their competence from teachers, parents, and peers or avoiding negative judgments of their competence.

Middleton, Littlefield, and Lehrer (1992) attempted to test a theory of how academic activities come to be regarded as intrinsically motivating. Their analysis revealed that children tended to organize their constructs into three general categories: arousal, or the cognitive stimulation afforded by an activity; personal control, or the degree to which the activity was considered a free choice or of appropriate difficulty; and interests, or the degree to which the students liked the activity, the importance of the activity, and their ability to perform the activity. Academic intrinsic motivation is the drive or desire of the student to engage in learning "for its own sake." Students who are intrinsically motivated engage in academic tasks because they enjoy them. They feel that learning is important with respect to their self-images, and they seek out learning activities for the sheer joy of learning. When individuals engage in tasks in which they are motivated intrinsically, they tend to exhibit a number of pedagogically desirable behaviors, including increased time on task, persistence in the face of failure, more elaborative processing and monitoring of comprehension, selection of more difficult tasks, greater creativity and risk taking, selection of deeper and more efficient performance and learning strategies, and choice of an activity in the absence of any reward (Alfieri, Brooks, Aldrich, & Tenenbaum 2011). However, many students demonstrate intrinsic motivation in their desire to understand a topic or concept (task-related), to outperform others (ego-related), or to impress others (social-related).

Methodology

The study adopted an Expost-Facto research design conducted in Akwa Ibom State. The population of the study consisted of teachers teaching basic science and preschoolers in nursery schools in Akwa Ibom State. The study selected 8 school. From each of the school 5 teachers and 30 preschoolers were selected and used for the study, which gave a total sample size of 280 respondents (made up of 40 teachers and 240 preschoolers. The instrument used by the researcher for the study was a questionnaire tagged "Motivational Teaching Strategies and Academic Performances Questionnaire (MTSAPQ)." Face and content validation of the research instrument was carried out by an expert in tests and measurement. From the analysis, the reliability coefficient 0.82 was obtained and the value was considered substantially high enough to justify the use of the instrument. The data obtained was analyzed using descriptive statistics and regression analysis for research questions and hypotheses respectively. The calculated values were compared with the critical values for the test of significance of the result at 0.05 alpha level.

Result and Discussion

Research Questions 1: The research question sought to find out the effect of enhancement of preschooler's curiosity by the basic science teacher on the academic performance of preschoolers in Akwa Ibom State. To answer the research question descriptive statistics was performed on the data, (see table 1).

Table 1: Descriptive statistics of the effect of enhancement of preschooler's curiosity by the basic science teacher on the academic performance of preschoolers in Akwa Ibom State

Variable	N	Arithmetic mean	Expected mean	R	Remarks
Academic Performance	280	17.28	12.5	0.96	*Strong to Perfect Relationship
Enhancement		13.08	12.5		

Source: Field Survey

The above table 1 presents the result of the descriptive analysis of the effect of enhancement of preschooler's curiosity by the basic science teacher on the academic performance of preschoolers in Akwa Ibom State. The two variables were observed to have Strong to Perfect Relationship at 96%. The arithmetic mean for academic performance (17.28) was observed to be greater than the expected mean score of 12.5. In addition to that, the arithmetic mean as regards enhancement (13.08) was observed to be higher than the expected mean score of 12.5. The result therefore means that there is remarkable the effect of enhancement of preschooler's curiosity by the basic science teacher on the academic performance of preschoolers in Akwa Ibom State.

Research Questions 2: The research question sought to find out the effect of extrinsic and intrinsic motivational strategies on the academic performance of preschoolers in Akwa Ibom State. To answer the research question descriptive statistics was performed on the data, (see table 2).

Table 2: Descriptive statistics of the effect of extrinsic and intrinsic motivational strategies on the academic performance of preschoolers in Akwa Ibom State

Variable	N	Arithmetic mean	Expected mean	R	Remarks
Academic Performance	280	17.28	12.5	0.93	*Strong to Perfect Relationship
Motivational Strategies		15.40	12.5		

Source: Field Survey

The above table 2 presents the result of the descriptive analysis of the effect of extrinsic and intrinsic motivational strategies on the academic performance of preschoolers in Akwa Ibom State. The two variables were observed to have Strong to Perfect Relationship at 93%. The arithmetic mean for academic performance (17.28) was observed to be greater than the expected mean score of 12.5. In addition to that, the arithmetic mean as regards enhancement (15.40) was observed to be higher than the expected mean score of 12.5. The result therefore means that there is remarkable the

effect of extrinsic and intrinsic motivational strategies on the academic performance of preschoolers in Akwa Ibom State.

Hypotheses

Hypothesis One: The null hypothesis states that there is no significant effect of enhancement of preschooler's curiosity by the basic science teacher on the academic performance of preschoolers in Akwa Ibom State. In order to answer the hypothesis, simple regression analysis was performed on the data (see table 3).

Table 3: Simple Regression Analysis of the effect of enhancement of preschooler's curiosity by the basic science teacher on the academic performance of preschoolers in Akwa Ibom State

Model	R	R-Square	Adjusted R Square	Std. error of the Estimate	R Square Change
1	0.96a	0.91	0.91	0.49	0.91

*Significant at 0.05 level; df= 278; N= 280; critical R-value = 0.139

The above table 3 shows that the calculated R-value (0.96) was greater than the critical R-value of 0.139 at 0.5 alpha levels with 278 degrees of freedom. The R-Square value of 0.91 predicts 91% of the effect of enhancement of preschooler's curiosity by the basic science teacher on the academic performance of preschoolers. This rate of percentage is highly positive and therefore means that there is significant effect of enhancement of preschooler's curiosity by the basic science teacher on the academic performance of preschoolers in Akwa Ibom State. It was also deemed necessary to find out the effect of the variance of each class of independent variable as responded by each respondent (see table 4).

Table 4: Analysis of variance of the effect of enhancement of preschooler's curiosity by the basic science teacher on the academic performance of preschoolers in Akwa Ibom State

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	720.95	1	720.95	2957.82	.000b
Residual	67.761	278	0.24		
Total	788.71	279			

a. Dependent Variable: Academic Performance

b. Predictors: (Constant), Enhancement

The calculated F-value (2957.82) and the P-value as (.000b). Being that the P-value (.000b) is below the probability level of 0.05, the result therefore means that there is significant effect exerted by the independent variables i.e. enhancement on the dependent variable which is academic performance. The result therefore means that there is significant effect of enhancement of preschooler's curiosity by the basic science teacher on the academic performance of preschoolers in Akwa Ibom State. The result therefore is in agreement with the research findings of Greitzer, (2002) who noted that enhancement of students' curiosity is synonymous with the student-centered method of teaching, which is the concept of discovery learning. Many scholars today widely adopt supplier student-centered instructional strategies to enhance active learning. The

significance of the result caused the null hypotheses to be rejected while the alternative was accepted.

Hypothesis Two: The null hypothesis states that there is no significant effect of extrinsic and intrinsic motivational strategies on the academic performance of preschoolers in Akwa Ibom State. In order to answer the hypothesis, simple regression analysis was performed on the data (see table 5).

Table 5: Simple Regression Analysis of the effect of extrinsic and intrinsic motivational strategies on the academic performance of preschoolers in Akwa Ibom State

Model	R	R-Square	Adjusted R Square	Std. error of the Estimate	R Square Change
1	0.93a	0.87	0.87	0.59	0.87

*Significant at 0.05 level; df= 278; N= 280; critical R-value = 0.139

The above table 5 shows that the calculated R-value (0.93) was greater than the critical R-value of 0.139 at 0.5 alpha levels with 278 degrees of freedom. The R-Square value of 0.87 predicts 87% of the effect of extrinsic and intrinsic motivational strategies on the academic performance of preschoolers. This rate of percentage is highly positive and therefore means that there is significant effect of extrinsic and intrinsic motivational strategies on the academic performance of preschoolers in Akwa Ibom State. It was also deemed necessary to find out the effect of the variance of each class of independent variable as responded by each respondent (see table 6).

TABLE 6: Analysis of variance of the effect of extrinsic and intrinsic motivational strategies on the academic performance of preschoolers in Akwa Ibom State

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	690.22	1	690.22	1948.21	.000b
Residual	98.49	278	0.35		
Total	788.71	279			

a. Dependent Variable: Academic Performance

b. Predictors: (Constant), Motivational Strategies

The calculated F-value (1948.21) and the P-value as (.000b). Being that the P-value (.000b) is below the probability level of 0.05, the result therefore means that there is significant effect exerted by the independent variables i.e. motivational strategies on the dependent variable which is academic performance. The result therefore means that there is significant effect of extrinsic and intrinsic motivational strategies on the academic performance of preschoolers in Akwa Ibom State. The result therefore is in agreement with the research findings of Awan, Noureen & Nas, (2011) who noted that motivating students to learn in school is a topic of great concern for educationists today, and motivating students so that they can succeed in school is one of the greatest challenges of this century. The significance of the result caused the null hypotheses to be rejected while the alternative was accepted.

Conclusion

The study concluded that motivational teaching strategies improve the academic performance of preschoolers. The study suggests that when teachers are caring, and supportive the teaching learning process over the performance outcomes, and when

they give feedback, children tend to be motivated to achieve and to expect success. However, motivation is the state that can maintain preschoolers' attention and behavior as well as provide them with the energy needed to lead tasks to achievement.

Recommendations

1. Teachers should explore and use the teaching strategy to motivate preschoolers to be more determined and efficacious in learning basic science.
2. Teachers should adopt motivational teaching strategies such as curiosity, extrinsic, and intrinsic to improve preschoolers' academic performance.
3. Teachers should also make an effort to connect fundamental science ideas to students' own experiences, so that preschoolers can see how what they learn applies to their daily lives, making learning more meaningful and relevant.

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