

Perception of Teachers' Instructional Strategies, Time Management and Academic Performance of Secondary School Students in Cross River State, Nigeria

¹Melvina N. Amalu, Ph.D

melvinaamalu@gmail.com

¹Blessing Agbo Ntamu, Ph.D

¹Department of Educational Foundations

University of Calabar, Calabar

drntamuba@gmail.com



Abstract

This study sought to determine the influence of perception of teachers' instructional strategies, time management and academic achievement in chemistry among secondary school students in Calabar municipality, Cross River State. Two null hypotheses guided the study. The design of the study was survey design. 251 SS2 Chemistry students made up the sample for the study. Two instruments namely: Perception of Teachers Attitude to Work Questionnaire (PTAWQ) and Chemistry Achievement Test (CAT) were developed, validated and used for the study. The internal consistency reliability of the instruments were calculated using Cronbach Alpha procedure and reliability estimates of .77 and .76 were got for the PTAWQ and CAT respectively. Data obtained was analysed using one way Analysis of Variance which indicated that students' perception of teachers' instructional strategies and time management have significant positive influence on academic performance of students in Chemistry. It was thus recommended among others that academic conferences, seminars and workshops be organized periodically for teachers to learn and acquire new effective instructional strategies and time management skills.

Keywords: instructional, strategies, time, management, academic, achievement

Introduction

Education at all levels is seen as a tool by which a nation can achieve its goal of national development. Without a well-run school system, no nation can make adequate impact on national development and no nation can rise above the quality of its teachers. Amalu (2016) opined that teachers are largely responsible for translation and implementation of educational policies, curriculum or course offering, instructional material packages and assessment of learning outcome at all levels of learning. They are also the models that stand on a special relationship of trust to the children and community and also represent certain ideas, values that children must imitate.

Teaching therefore, is effective when the teacher is able to create an understanding in the students that enables them develop skills and competencies necessary for effective integration in the society.

Perception is an individual's unique interpretation of events or stimuli in the environment external to him. A person's perception can be changed, biased, coloured or distorted by his unique set of experiences. This implies that a student's perception can affect his self-perception and self-outlook. Where a student perceives a teacher's instructional strategies and time management as not effective, it can affect his academic performance in that subject because he may have negative thinking towards the teacher and the subject taught by the teacher.

Instructional strategies are techniques teachers use to help teachers motivate students to focus their attention, organize information for understanding and remembering, monitor and assess learning. In order for the method to be used in teaching to be effective, Adunola (2011) maintained that teachers need to be conversant with numerous teaching strategies to take recognition of the magnitude of complexity of the concept to be covered. Time management is a process of managing the time according to the needs and requirement of work and activities in order to utilize, save and not to waste the time. Time management includes the construction and implementation of time table, distribution of subjects, total number of periods taken by the teacher, lesson planning, regularity and punctuality of teachers in school and class, advance planning of class activities, counselling and guidance of teachers, time allocation to students individually, organization and preparation of co-curricular activities of students.

Various researchers have conducted studies on the influence of teachers' instructional strategies, time management on academic performance of students. Onweh and Akpan (2014) conducted a study on instructional strategies and students' academic performance in technical colleges in Akwa Ibom State, using four (4) intact classes from Four (4) technical colleges selected to give a sample size of 231. The finding of the study revealed that there were significant difference between academic performance of students taught with discussion and lecture method. Sharma and Ranjan (2018) carried out a research on the effect of instructional strategy on academic achievement in relation to cognitive styles and achievement motivation of secondary school level. A sample of 64 students was selected by using multi-stage sampling. The result showed significant triple interaction effect of cognitive achievement and instructional strategy. Tulbure (2012) researched on learning styles, teaching strategies and academic achievement of higher education. Participants were 182 students. The finding indicated that significant difference exists between the two categories of students used for the study. Jepketer (2017) carried out a research on influence of

teaching strategies on students' performance in academic achievement and co-curricular activities in public secondary school in Nandi County, Kenya. 481 respondents and 30 public secondary schools were used as sample. The finding showed that there was significant and positive relationship between the teaching strategies and students' performance. Nafees, Farooq, Tahirkheli and Akhtar (2012) research on effect of instructional strategies on academic achievement in a high school general science class. Fayombo (2015) researched on learning styles, teaching strategies and academic achievement among some psychology undergraduates in Barbados, West Indies using 171 Undergraduates. The finding indicated that utilizing different teaching strategies to accommodate different learning styles promotes students' academic achievement in Psychology. Shuaibu and Muhammad (2018) carried out a research on effect of multi-media instructional strategies on academic performance of students in technical college in Kano State; a sample of 40 technical college students participated in the study. The finding showed significant difference on effect of multi-media on academic performance of students.

Additionally, Kayode and Ayodele (2015) conducted a study on the impact of teachers' time management on secondary school students' academic performance in Ekiti State. The sample consisted of 500 secondary school teachers and 500 school registrars. The finding revealed that there is a significant relationship between time management and academic performance. In a similar research work, Nasrullah and Khan (2015) found out, in their work to determine the impact of time management on the students' academic achievement using 120 students of Qurtuba University of Science and Technology, Peshawar, that time management related significantly and positively to academic achievement.

Statement of the problem

Chemistry is the science of substances, their reaction, and their application in forming new substance. It is one subject that cuts across all sciences and pervades literally every field of human endeavour, and plays a fundamental role in the economic development of a country (Emendu, 2014). It improves an individuals' skill or human capital thereby increasing his employability, productivity and earning power. In spite of the relative importance of chemistry in the overall development of a country, students' achievement in it has been poor. The trend of poor achievement in chemistry has been confirmed by the WASSCE results for the years 2014 to 2019. For instance, the WASSCE result of 2014, 2015, 2016, 2017, 2018 and 2019 indicated that only 35%, 30%, 23%, 25%, 29%, 33% (Statistics from Secondary Education Board, 2019) of the candidates who sat for the examination obtained credits in chemistry. This has continued to create concern in the minds of teachers, parents, curriculum experts and evaluators.

A number of programmes, conferences and workshops have been organized with a view to addressing the problems of poor academic performance in chemistry. As a result, a number of strategies have been recommended for teaching so that students can develop interest and perform better in chemistry. These include training and retraining of science teachers, provision of instructional materials and building of new and modern laboratories/classrooms, prompt payment of teachers' salaries and science allowances, promotion and employment of chemistry teachers. Despite these efforts, chemistry performance at secondary school level of education in Calabar Municipality has not improved to a satisfactory level. Hence, this present study sought to investigate the influence of students' perception of teachers' instructional strategies, time management on their academic performance in Cross River State.

Purpose of the study

The main purpose of the study was to investigate the influence of students' perception of teachers' instructional strategies on academic performance of students in Calabar Municipality in Cross River State, Nigeria.

Specifically, this study sought to investigate the influence of:

1. Students' perception of teachers' instructional strategies on academic performance in chemistry.
2. Students perception of teachers' time management on academic performance in chemistry

Hypotheses

Ho1: Students' perception of teachers' instructional strategies does not significantly influence their academic performance in chemistry.

Ho2: There is no significant influence of students' perception of time management on their academic performance in chemistry.

Methodology

Descriptive survey research design was used. The study was limited to Senior Secondary Two (SSII) chemistry students in Calabar municipality of Cross River State. The population was 2,329 students and random sampling technique was adopted to obtain a sample of 251 SSII chemistry students.

The instrument for data collection used was Perception of Teachers' Attitude to Work Questionnaire (PTAWQ) comprising two parts; one part concerned the respondents' bio-data such as name of school, location and class of students, while part two contained items to measure the independent variables in the study which measures teachers' attitude to work in terms of instructional strategies and time management. The 10-item PTAWQ used a four point likert type scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) with corresponding scores of 4, 3, 2 and

1 respectively. The Chemistry Achievement Test (CAT) with 30 items was used to measure the dependent variable. Each correct option in the CAT was scored 1 while wrong option was scored 0.

The instruments were validated by three experts, one from Measurement and Evaluation and two from Educational Psychology, all from the University of Calabar. Cronbach Alpha method of reliability was used to determine the internal consistency to obtain a reliability of .77 and .76 respectively. Two hundred and fifty-one (251) copies of the questionnaire were administered on the students and later retrieved with a return rate of 100%. Data collected was analysed using one-way Analysis of Variance (ANOVA) to test the hypotheses at 0.05 level of significance.

Presentation of results

Ho1: There is no significant influence of students' perception of teachers' instructional strategies on their academic performance in chemistry.

The independent variable is students' perception of teachers' instructional strategies while the dependent variable is academic performance of students in chemistry. Students' perception of teachers' instructional strategies was measured with ten items on a four-point likert scale. Respondents that scored from 10-19 were classified as low in their perception of teachers' instructional strategies while those that scored from 20-29 and 30-40 were classified as moderate and high respectively. The hypothesis was tested using one-way Analysis of Variance in comparing academic performance of students in chemistry across their levels of perception of teachers' instructional strategies which was tested at .05 level of significance. The result is presented in Table 1.

Table 1: One-way Analysis of Variance for perception of teachers' instructional strategies and academic performance of students in chemistry

Perception of teachers' instructional strategies	N	Mean	SD		
High	102	16.72	2.02		
Moderate	85	13.56	1.92		
Low	64	12.53	3.99		
Total	251	14.58	3.19		
Source of variance	Sum of square	df	Mean Square	F-ratio	p-level
Between groups	821.489	2	410.745	58.964*	.000
Within groups	1727.587	248	6.966		
Total	2549.076	250			

*significant at .05 alpha level; $P < .05$

The result in Table 1 revealed that the mean score in academic performance in chemistry obtained by the 102 students who were high in their perception of teachers' instructional strategies was 16.72 which is greater than the mean score of 13.56 obtained by the 85 students who were moderate in their perception of teachers' instructional strategies and this is also greater than the mean score of 12.53 obtained by the 64 students who were low in their perception of teachers' instructional strategies. This implies that the higher the students' perception of teachers' instructional strategies, the better their academic performance in chemistry.

The result further revealed that the calculated F-ratio obtained was 5.964 with a p-value of .000 at .05 level of significance with 2 and 248 degrees of freedom. With the obtained result, the F-ratio was statistically significant and the hypothesis which stated that there is no significant influence of students' perception of teachers' instructional strategies on their academic performance in chemistry was rejected. Since academic performance of students in chemistry was significantly influenced by their perception of teachers' instructional strategies, the source of difference was determined using Fisher Least Significant Difference (LSD) Post Hoc Test multiple comparison analysis. The result is presented in Table 2.

Table 2: Fisher LSD Post Hoc Test for perception of teachers' instructional strategies and academic performance of students in chemistry

Perception of teachers' instructional strategies	N	Mean	Mean difference	P-level
High	102	16.72	2.88	.000
Moderate	85	13.56		
High	102	16.72	4.08*	.000
Low	64	12.53		
Moderate	85	13.56	1.20*	.000
Low	64	12.53		

* significant at .05 level; $p < .05$

The result of the Fisher LSD Post Hoc Test analysis as presented in table 2 revealed that the mean score obtained by the students who were high on perception of teachers' instructional strategies differ significantly when compared with the mean score of those who were moderate in their perception of teachers' instructional strategies ($MD=3.15$; $p < .05$) and when compared with the mean score of those who were low in their perception of teachers' instructional strategies ($MD=4.18$; $p < .05$). The result finally revealed that the mean score obtained by the students who were moderate in their perception of teachers' instructional strategies differ significantly when compared with the mean score of those who were low in their perception of teachers' instructional strategies ($MD=1.03$; $p < .05$). Based on these, the source of the difference was basically from all the various categories of students' perception of teachers' instructional strategies.

Ho2: There is no significant influence of students' perception of teachers' time management on their academic performance in chemistry.

The independent variable is students' perception of teachers' time management while the dependent variable is academic performance of students in chemistry. Students' perception of teachers' time management was measured with five items on a four-point Likert type scale. Respondents that scored from 5-9 were classified as low in their perception of teachers' time management while those that scored from 10-15 and 16-20 were classified as moderate and high respectively. The hypothesis was analysed using one-way Analysis of Variance in comparing academic performance of students in chemistry across their levels of perception of teachers' time management which was tested at .05 level of significance. The result of the analysis is presented in Table 3.

Table 3: One-way Analysis of Variance for perception of teachers' time management and academic performance in chemistry

Perception of teachers' instructional strategies	N	Mean	SD
High	95	16.57	2.30
Moderate	115	13.69	2.66
Low	41	12.49	3.87
Total	251	14.58	3.19

Source of variance	Sum of square	df	Mean Square	F-ratio	p-level
Between groups	646.796	2	323.398	42.161*	.000
Within groups	1902.280	248	1.670		
Total	2549.076	250			

* Significant at .05 alpha level; $p < .05$.

The result in Table 3 revealed that the mean score in academic performance in chemistry obtained by the 95 students who were high in their perception of teachers' time management was 16.57, which is greater than the mean score of 13.69 obtained by the 115 students who were moderate in their perception of teachers' time management and this is also greater than the mean score of 12.49 obtained by the 41 students who were low in their perception of teachers' time management. This implies that the higher the students' perception of teachers' time management, the better their academic performance in chemistry.

The result further revealed that the calculated F-ratio obtained was 42.161 with p-value of .000 at .05 level of significance with 2 and 248 degrees of freedom. With the obtained result, the F-ratio was statistically significant and the hypothesis which stated that there is no significant influence of students' perception of teachers' time management on their academic performance in chemistry was rejected. Since academic performance of students in chemistry was significantly influenced by their perception of teachers' time management, the source of the difference was determined using Fisher Least Significant Difference (LSD) Post Hoc Test multiple comparison analysis. The result is presented in Table 4.

Table 4: Fisher LSD Post Hoc Test for perception of teachers' time management and academic performance in chemistry

Perception of teachers' instructional strategies	N	Mean	Mean difference	P-level
High	95	16.57	2.88	.000
Moderate	115	13.69		
High	95	16.57	4.08*	.000
Low	41	12.49		
Moderate	115	13.69	1.20*	
Low	41	12.49		

* significant at .05level; $p < .05$

The result of the Fisher LSD Post Hoc Test analysis as presented in Table 4 revealed that the mean score obtained by the students who were high in their perception of teachers' time management differ significantly when compared with the mean score of those who were moderate in their perception of teachers' time management (MD=2.88; $p < .05$) and when compared with the mean score of those who were low in their perception of teachers' time management (MD=4.09; $p < .05$). The result finally revealed that the mean score obtained by the students who were moderate in their perception of teachers' time management differ significantly when compared with the mean score of those who were low in their perception of teachers time management (MD=1.20; $p < .05$). Based on these, the source of the difference was basically from all the various categories of students' perception of teachers' time management.

Discussion of the findings

The finding of this study revealed that students' perception of teachers' instructional strategies had significant positive influence on their academic performance in Chemistry. This implies that the higher the students' perception of teachers' instructional strategies, the better their academic performance in chemistry. This finding was as expected because instructional strategies meet all learning styles and the developmental needs of all learners. They enable the students to focus their attention, organize their learning materials for better understanding and also help teachers to provide suitable platform for strategic learning which in turn promotes academic performance. The finding is in agreement with Adunola (2011) and Fayombo (2015) who maintained that teachers need to be conversant with numerous teaching strategies that take recognition of the magnitude of the complexity of the concept to be covered. It then means that in order to bring desirable changes in students, strategies used by teachers should be the best for the subject matter.

The result of the second hypothesis indicated that students' perception of teachers' time management had significant positive influence on their academic performance in chemistry which came out as expected. The finding agrees with the finding of Kayode and Ayodele (2015) and Nasrullah and Khan (2015) who stated in their separate studies that time management has a significant relationship with students' academic performance. Time management which is a group of practices, skills, tools and systems that work together to help improve the quality of life enables teachers and students to have some choice in their teaching and learning strategies for successful accomplishment of education goals. Time management principles encourage proper classroom management through planning, organizing and reviewing teaching and learning techniques and situation and proffer solution, since the classroom is the teachers' clinic. It then implies that students who have positive perception of the teachers' time management will be able to prioritize their work and be able to figure out how much time they can put in studying chemistry for better performance.

Conclusion

The study concludes that perception of teachers' instructional strategies and time management significantly influence students' academic performance in chemistry. This is indicative of the fact that the students taught by the teachers with better instructional strategies and time management skills may show high academic performance in chemistry than their counterpart who had no opportunity to be taught by such teachers.

Recommendations

Based on the findings, the following recommendations were made:

- 1) Teachers should increase their knowledge of various instructional strategies in order to keep students engaged and motivated throughout the learning process.
- 2) Teachers should create an atmosphere conducive to learning in order to enhance the development of students' learning experiences.
- 3) Academic conferences, workshops and seminars should be organized periodically for teachers to learn and acquire new effective instructional strategies and time management skills.

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