TEACHER-STUDENT RELATIONSHIP AND CLASS SIZE AS DETERMINANTS OF STUDENTS ACADEMIC PERFORMANCE IN AGRICULTURAL SCIENCE

BY

MR. EMMAUEL OKON BASSEY
DEPARTMENT OF VOCATIONAL STUDIES
FACULTY OF EDUCATION
UNIVERSITY OF UYO, UYO

ABSTRACT

The study examined teacher-student relationship and class size as determinants of students academic performance in Agricultural Science. The population of this study consisted of all students that offer agricultural science in all public secondary schools in Eket senatorial district of Akwa Ibom State. The study adopted Expost-facto Research design while simple random sampling technique was used in selecting the respondents. The instrument for data collection which was tagged "teacher-student relationship and class size as determinants of students academic performance in agricultural science (TRCSDSAPAS)" was administered to the respondents and used for the study. The instrument was vetted by an expert in the field before the reliability test was conducted which produced the reliability coefficient of 0.76 proving the instrument to be reliable for the study. Data collected were analyzed using Pearson Product Moment Correlation analysis and independent t-test analysis. From the results of the data analysis, it was observed and concluded that teacher-student relationship contributes immensely to the students academic performance in agricultural science. Also, effective class size contributes immensely to good academic performance of agricultural science students. It was therefore recommended that for a greater learning and higher academic performance in agricultural science, teachers should create a good conducive environment to their students so that the students can have easy access to them when there is need for that.

Keywords: Teacher-student relationship, class size, academic performance, Agricultural science

INTRODUCTION

The schools provide most children the platform for healthy growth, physically, morally and most importantly emotionally. For physical growth, every school provides students opportunities for games and sports (football, handball, basketball, lawn-tennis, athletics), house sports and inter-school competitions, all these give students opportunities for healthy growth as well as creating effects on their performance. Onyia (2002) observed that moral training, religious and moral instructions and practices which are on the school time table as well as school rules and regulations provide the opportunities for training in leadership and in followership.

Ojo (1997) noted that classroom climate is how learners interact among themselves during the teaching-learning process. Johnson and Johnson (1988) observed that this has not yet received adequate attention by educational researchers, yet the way learners interact among themselves in the learning process has been found to have effect on the outcome of learning. Ojo (1992) observed that more emphasis is being placed on learning materials relative to how learners are organized in the learning process. It is essential to note that class size is one of the important factors that affects student's achievement at school. If the number of students assigned to a particular class is more than the specific size, it would definitely disrupt effective management of the class by the teacher. According to Witting (2003), too many students congested in a small classroom will affect negatively the performance of students in that class. One of the characteristics of a conducive learning environment is a small class size assigned for a teacher at a time. Psychologically, students feel free and comfortable when they sit with adequate class size (30 to 40 in number) of students and improve their listening skills without much distraction.

Teachers' daily behaviour is a key factor in his students' value formation as he is a model or an example for the students who look up to him as someone very special and to be trusted (Okam, 1998). The teacher who demonstrates good moral values in school and in the society, equally with hard work will exhibit the same values on his students. Thus, Huitt (2004) noted that the teacher should maintain an open classroom atmosphere where students are free to discuss without fear of sanction.

Statement of the Problem

The poor performance of our students in public examinations has been a source of concern to many teachers, parents and government. Many people lament that some teachers are no more custodians of students entrusted into their care. There are cases in which some teachers get involved in illegal collection of fees, extortion of money from students, sales of laboratory equipments and aiding all forms of examination malpractices and abandoning teaching. There have also been cases of poor student-student relationship in class. Some students decide to stay away from others. They feel their company with other students is not necessary to them except with selected few. When this happens, they cannot have group study with others and this creates adverse effect on their performance in school. This live-alone life habit is rather worse in the case of student-teacher relationship, in that it does not allow the said student to be free with the teacher during teaching in the class.

In most government owned secondary schools in the state and Uyo in particular, instructional materials, facilities and equipment such as water, electricity, library, laboratory, toilets, tables, chairs, etc are inadequate. These impede students from achieving the desired results in their various subjects including agricultural science. These factors constitute a serious threat to better academic performance in the schools. The problem of this study therefore centers on how these factors (poor student-teacher relationship and class size) contribute to the students academic performance in agricultural science in secondary schools in Eket senatorial district in Akwa Ibom state.

Purpose of the Study

This study examined the influence of school variables on the academic performance of student in agricultural science, the specific objectives of the study are as follows:

1. To determine the influence of teachers-students relationship and academic performance of students in agricultural science in secondary schools in Eket senatorial district in Akwa Ibom state.
2. To examine the influence of class size and students academic performance in agricultural science in secondary schools in Eket senatorial district in Akwa Ibom state.

Research Questions

The following research questions guided the study

1. What is the relationship between teachers-students relationship and the academic performance of students in agricultural science?
2. What is the influence of class size on students' academic performance in agricultural science in secondary schools in Eket senatorial district of Akwa Ibom state?

Hypotheses

The following null hypotheses were tested at 0.05 alpha level**: -**

1. There is no significant relationship between teachers-students relationship in secondary schools and students' academic performance in agricultural science.
2. There is no significant influence of class size on students academic performance in agricultural science in secondary schools in Eket senatorial district of Akwa Ibom state.

Literature Review

Teacher-Student Relationship on Students Performance

Good teacher-student relationship plays an important role in directing students into success and achievement of their goals for both elementary, secondary and higher institutions (Checkering and Gamsm, 2002). Given the importance of students learning, most of the research students in the area have emphasized students' involvement with the teacher. Personal or privately, students meet a teacher and complain academic issues that he or she was not opportune or there was no convenient time to ask the teacher in the class. Sometime, the student goes to the staff room to meet with the teacher at a leisure time. This way provides a great opportunity for the teacher to show a great concern and spend more time to explain a point of the lesson taught more clearer that was done in the general class. Sometime, teachers do interact with the students on other educational issues depending on how sound the student is academically. Frequently, it is done with the class captain (DeBerard and Spielmans, 2004).

Larmour and James (2000) noted that students who show closeness to the teachers are bold students. Such students always take a bold step and enthusiasm to approach the teacher for educational discussion. This sometime might happen when a student is ready to make a choice of career or choice of subjects. This platform sets the pace for the career counselling service with the students. It is not all or always that the school counsellor interact with the student. Teachers do counsel or instruct, advise the students on his subject and career choice. This avenue enables the teacher to advise the student to make choice of subject or career based on his areas strength

and weakness. This discussion could lead to acquiring more knowledge by the students on the usefulness of a particular subject in his choosing career. Further discussion may propel the student to perform well academically and motivate him to learn to actualize his choosing career in future.

Evidence has shown that the quality of student-teacher relation at school has a great effect positively on the student educational attainment. Effective learning demands that student from time to time should meet with their lesson teacher to discuss personal and academic weakness with him. In fact, some teachers do organize extra-curricular activities or lessons at home with the student or group of student as the need arises. This way makes the students pour out his personal challenges concerning his academics. In school system today, teachers treat students as his or their children. The teachers create time for students to lay their complaints to them when they are free (Umbach and Wawrzynski, 2005)

The schools are an extension of the home since socialization process starts in the home and continue in the school. During the early years of introduction of formal education in Nigeria, teachers were feared more by the students than their parents. Students who misbehaved at home were reported by their parents to the teacher and they were severely punished. At school, teachers were perfectly in control of the students who submitted themselves completely to them. Teachers on their part devoted themselves to teaching the students and regarded the success of their students as their primary concern. They were more concerned about their student's success than the students themselves because society would judge them by the student's performance.

According to Udofot (1995), teacher personality is a major factor in school achievement. The teacher's teaching style, his habits, language and his relationships with the learners and with his colleagues are essential components of the teacher's personality. A teacher who is academically sound, professionally competent and committed is able to command the respect of the learners through good teaching. Learners under him would enjoy teaching and would not like to be absent from class in order not to miss teaching. In the same way, learners would hardly respect a teacher who is unkempt and wears unclean clothes, who goes to class drunk and uses abusive words on his colleagues and on the learners.

Class size and academic performance of students

Class size is one of the significant factors that affect performance of students in school. According to Fin and Achilles (2005), there is currently a debate within the literature as to whether class size influences academic achievement or not. The debate was perhaps first sparked by a review of the literature by Achilles (2005). Using meta-a-analytic techniques, Achilles reviewed approximately 80 class-size studies conducted in 1998 aid the researcher concluded that reductions in class size resulted in increases in academic achievement. To achieve a significant increase in academic achievement however required a dramatic reduction in class size. Class sizes of 15 or few students according to Wags and Smith (2004) could be expected to increase achievement scores by approximately half a standard deviation.

The assertions made by Odden (2000) were challenged by the Educational Research Services (ERS) (1990), which maintained that many of the studies analyzed by Odden were methodologically faulty. The ERS pointed out that many of the performance gains were based on tutorials or extremely small classes. This implies that a class size or number of students that is more than 30 would result to less performance of the students in their total score of the studies

that have found smaller class sizes producing gains in student performance most are for the early primary grades (Robinson and Wittebols, 2003). They found that the effects for smaller class size decreased from grades 1-3, to 4-8, and were almost none existent for grades 9-12.

Supposes of this investigation was to examine the degree to which class size influences students' achievement. Students' achievement was measured by the lower test of basic skills (ITBS) and scores were reported in normal curve Equivalents (NCE). Achievement measures were also grouped according to content. The math score represents the mean NCE scores for three math or agric. Sc. Sub tests of the mean NCE score for the reading, vocabulary, and usage and expressions subtests of the ITBS. The amount of shared variance between these variables allowed for the creation of these combined scores. Attendance rate, math and agric. Sc. grades, English grades were also analyzed and their influence on performance was compared with class size (Kruieger, 2000).

Students in grades four through six were largely confined to a single home room so that the English and agricultural or math class sizes were equal. Students in the middle grades and high school were able to take a variable number of math and English classes to address the problem of multiple subjects, class size was averaged for those students who had taken more than on English or math class. In addition, final grades represent mean grades for students taking more than one math or English or agric. Sc. Class for grades four through six English and math grades were not available (Bay d-Zaharias, 2000).

Reisert (2001) asserted that the class unit is the basic unit of organization for instruction therefore class size information should be foundational knowledge for educators. That between the first edition of the Encyclopedia of Education in 1991 and its second edition in 2002 understanding of class size and its actual use have arguably seen both the greatest and the least change among the fundamentals of education. The analysis of student achievement produces a puzzling result regarding the effects of discussion /lab sections. As expected discussion/lab sections are beneficial to grades in science and mathematics or Agricultural Sc. Subjects, through this effect dissipates with large classes. However, in other courses, discussion/lab sections determine the grades. More research is needed to explain this finding (Wanglingkey, 2002). Large classes adversely affect both student performance and retention at Bringh-amton University. Substantially increasing class sizes would likely have a greater negative effect on retention roles than on students' performance.

Methods

Research Design

An Expost-facto design was used for this study. This design was being found fit for the study, as it attempted to find out the existing influence of the independent variable (school variables) on the dependent variable (students academic performance).

Area of the Study

The research area for this study was Eket senatorial district of Akwa Ibom State. Eket senatorial district is made up of 13 local government areas with Eket local government area as the capital.

Population of the Study

 The population of this study comprised all students that offer agricultural science in all public secondary schools in Eket senatorial district of Akwa Ibom State. They are 3312 in number (James. 2010).

Sample and Sampling Techniques

A simple sampling technique was used to draw the 420 students, being 12.68% of the population from the study area and used for the study in the following order. This was done by selecting 5 local government areas from the district. From each school 21 respondents were randomly selected and this gave a sample size of 420 as can seen in the following table 1.

Table 1

Distribution of the respondents in each secondary school used for the study.

L.G.A.	No of Schools	No of Respondent From each LGA	No of respondents from each school
IKOT ABASI L.G.A.	4	21	84
EKET L.G.A	4	21	84
ONNA L.G.A	4	21	84
ORON L.G.A	4	21	84
OKOBO L.G.A	4	21	84
Total	20		420

Out of the 420 respondents who received the questionnaires, 414 of them correctly filled in and returned the questionnaire. This yielded 98.5% retrieval rate of the questionnaires.

Instrumentation

The main instrument to be used in this study is questionnaire titled "teacher-student relationship and class size as determinants of students academic performance in agricultural science (TRCSDSAPAS)". It was made up of two sections part A and part B.

Validation of the Instrument

The instrument designed by the researcher passed through face and content validation by being vetted by the researcher's supervisor and one expert from test and measurement as well as agricultural science lecturers from the department of vocational education. The instrument was, vetted by my supervisors and a lecturer in test and measurement, in the Faculty of education.

Reliability of the Instrument

Test – retest reliability was used to determine the reliability of the instrument (SVSAPAS). In the trial testing, a total of 40 students who did not form part of the main study were randomly selected and the instrument administered on them. The same procedure was repeated on the same subjects after two weeks. The reliability test was performed using Crombach Alpha and from the reliability test, it was observed that the reliability coefficients ranged from 0.78 to 0.89, making the instrument useful and recommendable for the study.

Method of Data Analysis

The researcher subjected the data generated for this study to appropriate statistical techniques such as Pearson Product Moment Correlation analysis and independent t-test analysis. The test for significance was done at 0.05 alpha level. The result was considered significant if the calculated values were either equal to or greater than the critical value but non significant if the calculated values were less than the critical values.

Data Analysis and Results

Research Question One

The research question sought to find out the correlation between teacher-students relationship and academic performance of students in agricultural science, in secondary schools in Eket senatorial district of Akwa state. In-order to answer the research question descriptive analysis was performed on the data collected and the result presented in table 1

TABLE 1

The relationship between teachers-students relationship and students academic performance in agricultural science in Eket senatorial district in Akwa Ibom State. (n=414)

Variable	$\bar{x}$	SD	r	Remark
Teacher-student relationship	15.29	2.18		
			0.939	**Strong to perfect Relationship
Academic performance	62.13	10.23		

Source: Field Survey

The above table 1 presents the descriptive analysis of the relationship between teachers-students relationship and student's academic performance in agricultural science in secondary schools in Eket senatorial district of Akwa Ibom State. The two variables were observed to have strong to perfect relationship of 0.94. The result therefore means that there is significant relationship between teacher–student relationship and student's academic performance in Agricultural science of Eket Senatorial District of Akwa Ibom State.

Research Question Two

The research question sought to find out the influence of class size on the students academic performance in Agriculture Science in Secondary Schools in Eket Senatorial district of Akwa Ibom State. In-order to answer the research question, descriptive analysis was performed on the data collected (see table 2)

Table 2

The influence of class size on students academic performance in agricultural science in secondary schools in Eket senatorial district of Akwa Ibom state.

Variable	N	$\overline{X}$	SD	**Mean difference**
Small class size	249	66.17	10.54	
				10.15*
Large class size	165	56.02	5.78	

*Remarkable difference
Source: Field Survey

The above table 2 presents descriptive analysis of the influence of class size on student's academic performance in agricultural science in secondary schools in Eket Senatorial district of Akwa Ibom state. From the analysis it was observed that students in small class size performed better (66.17) than their counterparts in large class size (56.02), with the mean difference of 10.15. The result therefore means that class size has a remarkable influence on student's academic performance in agricultural science in secondary schools in Eket senatorial district of Akwa Ibom State.

Testing of Hypotheses
Hypothesis One

The null hypothesis states that there is no significant relationship between teacher-student relationship and academic performance in agricultural science in secondary schools in Eket senatorial district of Akwa state.

In-order to test the hypothesis, two variables were identified as follows:

1 Teacher–student relationship as the independent variable.
2 Academic performance as the dependent variable.

Pearson product moment correlation analysis was used to analyze the data in –order to determine the relationship between the two variables (see table 3).

Table 3

Pearson Product Moment Correlation Analysis of the correlation between teachers- students relationship in secondary schools on students academic performance in agricultural science in Eket senatorial district of Akwa Ibom State

Variables	$\sum X$ $\sum y$	$\sum X^2$ $\sum y^2$	$\sum Xy$	r
Teachers- students Relationship	6332	98804		
			402022	0.939*
Academic performance	25720	1641108		

*Significant at 0.05 level; df = 412; N=4.4; critical r= value =0.089

The above table 3 presents the obtained r- value as 0.939. This value was tested for significant by comparing it with the critical r- value of 0.089 at 0.05 level with 412 degree of freedom. The obtained r-value (0.939) was greater than the critical r-value (0.089). Hence, the result was significant. The result therefore means that there is significant correlation between teachers–students relationship and academic performance in Agricultural science in Eket Senatorial District of Akwa Ibom State.

Hypothesis Two

The null hypothesis states that there is no significant difference in the academic performance of secondary school students in small and large class in Eket senatorial district of Akwa Ibom State.

In order to test this hypothesis, two variables were identified as follows;

1. Class size as the independent variable
2. Academic Performance as the dependent variable independent T-test analysis was then used in comparing the means score of the two variables (see table 4)

Table 4
Independent t–test analysis of the difference in the academic performance of secondary school students in small and large class in Eket Senatorial district of Akwa Ibom State

Variables	N	X	SD	t
Small class size	249	66.17	10.54	
				11.287*
Large class size	165	56.02	5.78	

*significant at 0.05 level; df= 412; critical- r – value = 1.96

The above table 4 presents the t- test value as (11.287). This value was tested for significance by comparing it with the critical t- value (1.96) at 0.05 level with 412 degree of freedom. The obtained t- value 11.287 was greater than the critical t- value 1.96. Hence, the result was significant. The result therefore means that there is significant influence of class size on student's academic performance in agricultural science in secondary schools in Eket senatorial district of Akwa Ibom State.

DISCUSSION OF THE FINDINGS

The result of the data analysis in table 3 was significant due to the fact that the obtained r-value (0.939) was greater than the critical r-value (0.089) at 0.05 level with 412 degree of freedom. This result implies that there is significant relationship between teachers–students' relationship in secondary schools on students' academic performance in agricultural science in secondary schools in Eket Senatorial district in Akwa Ibom State. The significance of the result is in agreement with the opinion of Larmour and James (2000) who noted that students who show closeness to the teacher are bold students. Such students always take a bold step and enthusiasm to approach the teacher for educational discussion. The significance of the result caused the null hypothesis to be rejected while the alternative one was accepted.

The result of the data analysis in table 4 was significant due to the fact that the obtained t-value (11.287) was greater than the critical t-value (1.96) at 0.05 level with 412 degree of freedom. This result implies that there is significant influence of class size on students academic performance in agricultural science in secondary schools in Eket Senatorial district in Akwa Ibom State. The significance of the result is in agreement with the opinion of Reisert (2001) who asserted that the class unit is the basic unit of organization for instruction therefore class size information is the foundational knowledge for educators. It was also in agreement with the opinion of Mosteller (2003) who revealed that increasing class size has negative effects on students' achievement. The significance of the result caused the null hypothesis to be rejected while the alternative one was accepted.

Conclusions

Based on the findings of the research, it was concluded that teacher-student relationship contributes immensely to the students academic performance in agricultural science, meaning that the academic performance of agricultural science students in the urban schools differ significantly from that of their counterparts in the rural schools. Also, effective class size contributes immensely to good academic performance of agricultural science students while non-discipline in the class rather has adverse effects on the students.

Recommendations
Based on the findings of the study, the researcher wish to recommend that:-

1. For a greater learning and higher academic performance in agricultural science, teachers should create a good conducive environment to their students so that the students can have easy access to them when there is need for that.
   2. For effective academic achievement, class size should be reduced to between 30 to 40 students in a class

REFERENCES

Achilles, T. E. (2005). Effects of co-operative competitive and individualistic experiences on performance. *Journal of Psychology*, 6 (1), 31-34.

Bay, D. & Zaharias, W. S. (2000). *Administrative leadership in the elementary school: Improving the management of school plant and facilities*. New York: The Ronald Press Company.

Chickering, A. & Gamsm, Z. (2002). *Applying the seven principle for group learning among high school students*. San Francisco. San Francisco: Jossey – Bass Publication.

DeBerard, M. & Spielmans, A. (2004). *Teachers' relationship with students psychology of education* 6(2) pp 20 – 42.

ERS, (1990). A study of values and personality factors and predictors of administrative behaviour. *Dissertation abstract International*, 29 (3), 770-779.

Fin, Y. & Achillers, T. M. (2005). *The impact of college students*. San Francisco: Jossey-Bass Publishers.

Huitt, S. (2004) *The Educational process Norwood*: Nor wood press ltd.

James, E. U. (2010). *School quality and academic performance:* A case study of selected public and private secondary schools in Oredo Local Government Area in Benin city. Unpublished B. Ed. Project, Faculty of Education, University of Uyo.

Johnson, K. (1988). *Gender difference in the academic ethic and academic achievement* college student Journal, 39(3), 604 – 618.

Kruieger, C. (2000). *The Encyclopedia of management* (2nd ed).

Larmour, P. T. & James D. E. (2000). *'Nature and meaning of theory' in behavioural science and educational administration*. Chicago: National Society for the study of education.

Mosteller, L. (2003). *School administration and teacher performance*. Cambridge University Conference Paper, 10 (2), 30-43.

Odden, A. (2000). *Class size and students' achievement*: Research based policy alternative. Educational Evaluation and policy Analysis, vol.12, No. 2, pp.213 – 227.

Ojo, B. (1992). Audio-visual instruction media and method. 6th addition. P.2 *Mchraw Hill Book Company*, New York.

Ojo, E. (1997). *In how small size help Teachers do their best*, ed. Margret C. Wang Jeremy O. Finn, pp 65-98. Philadelphia: Temple University center for research in Human Development in Education.

Okam, P. (1998). *Students' partnership with instructors school*. Predictors of academic achievement. A. longitudinal study. *College student Journal*. 38 (1), 66-8.

Onyia, A. (2002). *What matters in school student's involvement relationship*. San Francisco Jossey Bass Inc publishers.

Reisert, T. (2001). *Pychopathology of ageing*. New York: Grance & straton Inc.

Robinson, G. & Wittebols, J. H.   (2003). *Class size research: A related cluster analysis for decision making*. Arhington, VA: Educational Research Service.

Udofot D. (1995). *Formal organization*. New York: Preyer publishers Inc.

Umbach, P. & Inlawrzynski   (2005) P*eer relationship do matter in schoo*l: The role of peer relationship in learning research in High school 153 – 184.

Wags, D. & Smith, F. (2004): *Work and nature of man:* New York: World Publishing Company.

Wanglingkey, O. (2002) *Education for modern man*. New York: Alfred Knoff.

Witting, A. (2003). *Instruction to psychology*. New York; megraw – Hill Book Company.