Teacher-student relationship and attitude as correlates of students' academic achievement in agricultural science in senior secondary schools

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ABSTRACT

This study was carried out on the need to provide empirical evidences and establish the relationship existing between teachers' attitude and students' achievement as well as the relationship between teacher-student and students' academic achievement in agricultural science in Abia State, Nigeria. Two specific objectives guided the study. Two research questions as well as two null hypotheses were formulated and tested at 0.05 level of significance. The study adopted correlational study design. The study was carried out in Abia state. The population of the study was 9,963 consisting of 9,690 students and 273 teachers of agricultural science (Abia State Secondary Education Management Board, 2020). The sample size of 330 respondents consisting of 30 teachers and 300 students were selected and used for the study. A multi-stage sampling (simple random-purposive-simple random) procedure was adopted for this study. The study made use of two instruments for data collection; a questionnaire titled; Teacher Relationship and Attitude Questionnaire (TRAQ) structured on 4-point scale of 4=Highly Utilized (HU), 3=Utilized (U), 2=Averagely Utilized (AU) and 1=Not Utilized (NU) and a standardized agricultural science achievement test (AAT) adapted from 2018 WAEC agricultural science paper 2. The instruments were validated by three experts, two from the Department of Agricultural/Home-science Education and one from Department of Measurement and Evaluation in College of Education, Michael Okpara University of Agriculture, Umudike. The reliability of the instrument for the study was determined using split-half method of reliability which gave a reliability coefficient of .82 and .88 for the two instruments respectively. 330 Copies of TRAQ and AAT were administered to the respondents but 312 copies of the administered instruments were retrieved representing 94.5% retrieval rate. The data collected were analyzed using Pearson Product Moment Correlation to answer research questions and linear regression to test the hypotheses at .05 level of significance. Based on the findings, it was recommended among others that teachers should know that their relationship with their students plays a vital role in the students' achievement. As a result, they should always create a good relationship with their students. Positive and negative reinforcement should only be utilized when and where necessary.

Keywords: Teacher-student relationship, teacher attitude achievement, agricultural science, secondary schools.

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INTRODUCTION

Two of the most essential types of social relations that students form and uphold in school are relations with peers and with teachers, and the former appear to be more constantly related to academic results from childhood to adolescence. Teacher-students relationship is very important in school as it aid students' success.

The interaction between teacher and student is essentially the elementary basis for teaching. A Good teacher-student relationship may be even more important for students with behaviour and learning challenges (Caballero, 2010). Correspondingly, a number of literatures reveal that strong relationship exists between the teacher's involvement and student's achievement. Rabinder in Abudu and Gbadamosi (2014) also believed in more humane relationship between teacher and student. The importance of such close relationship between student and teachers includes: removing the fear and stress from student's mind, developing a common language and mutual understanding, reducing the communication gap and providing a perfect environment for learning. An approach of support in the learning environment can positively affect academic outcomes. Educational dangers associated with the deficiency of a positive relationship between teachers and students according to Lucian (2003) include: high level of withdrawal of college students, low self-efficacy as well as low self-confidence. Teachers with positive relationship with students are the focal points of any educational system upon which devotion and quality as well as effectiveness of all educational arrangement must primarily depend. Undoubtedly, the type of relationship existing between a teacher and his/her student would to a great extent, reflect in the teacher's attitude.

Attitude is an important teacher variable. The teachers' attitude is an imaginary construct that indicates an individual's like and dislike towards a thing. Attitude is an approach, temperament, sensation, situation, among others with regard to a person or thing: leaning or course, particularly of the mind. Muellerleile (2005) argued that attitude is a way of looking at things. Attitude influence an individual to achievement that has some degree of reliability and can be appraised as being negative or positive (Tella, 2008). According to Cheung (2009), all science teachers regard the development of positive attitude in the direction of science subjects as his core responsibility. Although the positive behavior of the teacher permits him/her to build a positive connection with students, it also permits for the teacher to stay on the positive behavior of students as against the negative, taking on a reinforcing role as well Yavuzer in Mucella et al. (2011). However, Omah (2002) maintained that teachers are disrupting the endeavors of the government through their attitude towards their profession, which as a result has unfavorable effect on the academic achievement of the student.

Academic achievement is teachers' major concern as well as students, parents and guardians including other stakeholders in the education industry. A high academic achievement for any class of students is a sign of teaching/learning effectiveness while poor academic achievement, on the other hand, is an indication that the teaching/learning process is everything but ineffective. Aremu in Igberadja (2016) stressed that academic failure is not only exasperating to the parents and the students, its end products are equally grievous on the society in terms of the lack of manpower in all areas of the economy and politics. Bakare in Eze, Ezenwafor and Obi (2015) defined poor academic achievement as achievement that falls lower than the estimated standard. In the context of this study, the term academic achievement refers to the overall achievement of students in agricultural science evident in their scores in standardized examinations. However, students' academic achievement recently, in agricultural science in such standardized examination as WAEC is getting worst every year with little improvement.

Statement of the problem

Abia State is a state in the eastern part of Nigeria which is known with so many agricultural benefits and potentials such as oil palm production, among others. With no reasonable doubt, it would be the expectation of everyone that the young youths especially the secondary school students will enrol more and have greater achievement in agricultural science in order to exploit the agricultural benefits and prospects in the state. However, it has been observed by the researcher through a focus discussion with some teachers of Agriculture in Abia state that students' enrolment and achievement in agricultural science is reducing drastically every year. This state of affair was affirmed by the WAEC chief examiners report of 2018 in agricultural science. The current state of affair, if allowed to prevail, would definitely lead to lack of capable hands to take up agricultural roles in Abia State in the nearest future which could also affect the food security of Abia State indirectly. Meanwhile, researches have not been silent in order to curb this problem of poor students' achievement in agricultural science but seem silent on correlating teachers' attitude and teacher-student relationship with students' academic achievement in agricultural science in Abia state. The researcher in view of the identified gap, embarked on the present study.

Purpose of the study

The overall objective of this study is to examine the teacher-student relationship and attitude as correlate of students' academic achievement in agricultural science in secondary schools in Abia State. Specifically, the objectives of this study are to:

1. Determine if agricultural science teacher-student relationship correlates with academic achievement of agricultural science students in secondary schools in Abia State.
2. Find out if agricultural science teachers' attitude

correlates with academic achievement of agricultural students in secondary schools in Abia State.

Research question

The following research questions were raised:

1. Is there any correlation between agricultural science teacher-student relationship and academic achievement of agricultural science students in secondary schools in Abia State?
2. What is the correlation between agricultural science teachers' attitude and academic achievement of agricultural students in secondary schools in Abia State?

Hypotheses

The following hypotheses were tested for the study:

H_{01}: Significant correlation does not exist between agricultural science teacher-student relationship and academic achievement of agricultural science students in secondary schools in Abia State.
H_{02}: There is no significant correlation between agricultural science teachers' attitude and academic achievement of agricultural students in secondary schools in Abia State.
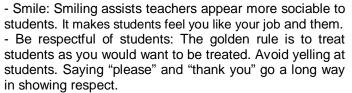

Theoretical framework

The theoretical framework of this study is based on the Self-Determination Theory (SDT).

According to Self-Determination Theory (SDT), human beings have three basic mental needs of competence, relatedness, self-sufficiency and they are essential to personality and cognitive growth and well-being (Deci and Ryan, 2000). Relatedness is exemplified by a state of being affectionate and caring for others. In a school setting, teachers can be understanding, warm and affectionate with their students when they devote psychological resources such as attention, energy and love to students (Reeve et al., 2004). This way, teachers can raise their students' relatedness and self-determined motivation. Relatedness in the classroom perhaps conceptualized as interpersonal association of teachers by creating opportunities for students to sense related and being in the right place. As a teacher, an individual can take the subsequent steps to augment interpersonal relationships with students (Buskist and Saville, 2001):

- Study and use student names: One of the easiest approaches to learn students' names is for students to wear name labels at the commencement of the year.
- Chat with students: study about students' curiosity, hobbies and objectives.

- Smile: Smiling assists teachers appear more sociable to students. It makes students feel you like your job and them.
- Be respectful of students: The golden rule is to treat students as you would want to be treated. Avoid yelling at students. Saying "please" and "thank you" go a long way in showing respect.
- Use humour: Humour aids students have more comfortable experience in class. Use jokes, but avoid irony or mockery.
- Be a lively listener: upholding eye contact, using non-verbal acts such as head nodding and facial looks and rephrasing what was said are indications of showing real interest in what the students are saying.

How a teacher relates with his/her students is mostly what the students perceive as the teacher's attitude. Teachers should know that positive relationship with the learners is one of the fundamental psychological needs of the learners which must be satisfied in order to motivate the learners towards better academic achievements. This theory is therefore significant to the present.

METHODOLOGY

The study adopted correlational study design. The study was carried out in Abia state consisting of three education zones namely; Aba, Umuahia and Ohafia. The population of the study was 9,963 consisting of 9,690 students and 273 teachers of agricultural science (Abia State Secondary Education Management Board, 2020). The sample size of 330 respondents consisting of 30 teachers and 300 students were selected and used for the study. A multi-stage sampling (simple random-purposive-simple random) procedure was adopted for this study. In the first stage, fifteen (15) secondary schools were selected with replacement from each of the three educational zones using simple random sampling technique. In the second stage, 5 secondary schools were drawn from each of the fifteen (15) secondary schools chosen for the study using purposive sampling technique. Purposive sampling technique was used in order to select schools with at least 2 agricultural science teachers. Lastly, 20 students and 2 teachers were selected from each of the 5 schools using simple random sampling technique. The study made use of two instruments for data collection; a questionnaire titled; Teacher Relationship and Attitude Questionnaire (TRAQ) structured on 4-point scale of 4=Highly Utilized (HU), 3=Utilized (U), 2=Averagely Utilized (AU) and 1=Not Utilized (NU) and an agricultural science achievement test (AAT) containing thirty (30) multiple choice test items ranging from A-D adapted from 2018 WAEC agricultural science paper 2. The instruments were validated by three experts, two from the Department of Agricultural/Home-science Education and one from Department of Measurement and Evaluation in College of Education, Michael Okpara University of Agriculture, Umudike. The

reliability of the instrument for the study was determined using split-half method of reliability which gave a reliability coefficient of .82 and .88 for the two instruments respectively. Ethically, the Abia State Secondary Education Management Board (ABSSEMB) was officially informed and approval was obtained. The teachers and students in the school involved were informed of the research and the option to participate. Only teachers and students who volunteered to participate were involved in the study and their personal information are kept confidential for academic purpose. Three hundred and thirty (330) copies of TRAQ and AAT were administered to the respondents. Re-visit was rescheduled to the respondents where on the spot retrieval was not possible. Three hundred and twelve (312) copies of the administered instrument were retrieved representing 94.5% retrieval rate. The data collected was analyzed using Pearson Product Moment Correlation to answer research questions and linear regression to test the hypotheses at 0.05 level of significance. The Pearson Product Moment Correlation analysis was used to determine the relationship of the variables such as teacher experience and students' academic achievement. The strength of relationship of the variables was decided or interpreted using Creswell (2008) correlation coefficient scale. Below or equal to ±0.20 =Very low relationship, ±0.21 – 0.40= Low relationship, ±0.41 – 0.60 = Moderate relationship, ±0.61 – 0.80 =High relationship, ±0.81 – 1.00 =Very high relationship. Similarly, for the hypotheses testing, any item whose p-value is greater than or equal to the alpha-value of .05 was accepted while any item with p-value less than the alpha value of .05 was rejected.

RESULTS

Table 1 indicates a correlation coefficient (r) of .58 which is positive and within the coefficient limit below or equal to ±0.41-.60. This shows that there is moderate positive correlation between teacher-student relationship and students' academic achievement on agricultural science in secondary schools.

Data in Table 2 shows a p-value of .010 which is less than the alpha value of .05. This means that there is a significant correlation between teacher-student relationship and students' academic achievement on agricultural science in secondary schools. Therefore, the hypothesis of there is no significant correlation between teacher-student relationship and students' academic achievement was not retained.

Table 1. Correlation matrix of teacher-student relationship and students' academic achievement (N = 29).

		TSR	SAA
TSR	Pearson correlation	1	.578
	Sig. (2-tailed)		.010
	N	29	29
SAA	Pearson correlation	.578	1
	Sig. (2-tailed)	.010	
	N	29	29

*TSR = Teacher-Student relationship, SAA = students' academic achievement, Correlation is significant at the 0.05 level (2-tailed), N = Number of respondents.

Table 2. Linear regression analysis of teacher-student relationship and students' academic achievement (N = 29).

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	16.700	1	16.700	14.081	.010[b]
Residual	33.205	28	1.186		
Total	49.905	29			

*df = Degree of freedom, F = F-calculated, Correlation is significant at the 0.05 level (2-tailed).

Data in Table 3 shows a correlation coefficient (r) of .44 which is positive and within the coefficient limit below or equal to ±0.41-.60. This indicates that there is moderate positivecorrelation between teacher's attitude and students' academic achievement on agricultural science in secondary schools.

Table 4 as well indicates a p-value of .038 which is less than the alpha value of 0.05. This means that there is a significant correlation between teachers' attitude and students' academic achievement on agricultural science in secondary schools. The hypothesis of the correlation between agricultural science teachers' attitude and academic achievement of agricultural students in secondary schools in Abia State was therefore not accepted.

Table 3. Correlation analysis of teachers' attitude and student's academic achievement.

		TA	SAA
TA	Pearson correlation	1	.438
	Sig. (2-tailed)		.038
	N	29	43
SAA	Pearson correlation	.438	1
	Sig. (2-tailed)	.038	
	N	29	29

*TA = teachers' attitude, N = number of respondents, SAA = students' academic achievement.

Table 4. Regression analysis teachers' attitude and students' academic achievement.

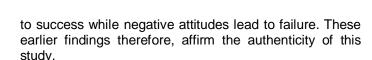| Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	9.588	1	9.588	6.659	.038[b]
Residual	40.317	28	1.439		
Total	49.905	29			

*df = Degree of freedom, F = F-calculated, Correlation is significant at the 0.05 level (2-tailed).

DISCUSSION

The result of the study on research question 1 and hypothesis 1 reveal that there is significant moderate positive correlation between teacher-student relationship and students' academic achievement on agricultural science in secondary schools. This result is in tandem with the expectation of the researcher that good teacher-student relationship would relatively lead to good student academic achievement. In affirmation, Timothy and Charity (2004) highlighted that, the better the relationship in terms of mutual respect, knowledge, trust, shared values and perspectives about education, life, time available, better will be the amount and quality of knowledge gained by the students. In any case, in contrast, Mohamed et al. (2018) conducted a research on the correlation between student-teacher rapport, student academic achievement and post-graduation plan, where it was found that low negative relationships exist between student-teacher rapport and academic achievement for 2 academic programs.

The results of the study on research question 2 and hypothesis 2 shows that there is a significant moderate positive correlation between agricultural science teacher's attitude and students' academic achievement on agricultural science in secondary schools. The implication is that the agricultural science teachers in senior secondary schools adopted positive teaching attitude that suits the teaching of agricultural science and as such an increase in the use of such attitude would definitely lead to an increase in the students' academic achievement. In agreement with the finding of this study, Abudu and Gbadamosi (2014) submitted that attitude of teachers teaching chemistry in our senior secondary schools have significant positive relationship on the achievement of students in chemistry as one of the science subject. The study thus, was carried out on relationship between teacher's attitude and student's academic achievement in senior secondary school Chemistry: A case study of Ijebu-Ode and Odogbolu local government area of Ogun state. The finding of the study is also in line with the report of Ekperi et al. (2019) who conducted a research on teachers' attitude as a correlate of students' academic performance, where it was found that a positive and significant relationship between teacher's attitude and student's academic performance exists. Similarly, Mucella et al. (2011) stressed that Positive attitudes lead to success while negative attitudes lead to failure. These earlier findings therefore, affirm the authenticity of this study.

CONCLUSION AND RECOMMENDATION

This examined teacher-student relationship and teacher attitude as correlate of student academic achievement in agricultural science in senior secondary schools in Abia State. Based on the result, teacher-student relationship of teachers and attitude was found to have significant moderate positive relationship with students' academic achievement. It was inferred thus, that teachers teacher-student relationship and attitude to moderate extent, contributes to students' academic achievement in agricultural science. Consequently, the following recommendations were made:

1. Teachers should understand that their relationship with their students plays a vital role in the students' achievement. As a result, they should always create a good relationship with their students. Positive and negative reinforcement should only be utilized when and where necessary
2. Teachers' attitude was found to have positive relationship with students' academic achievement on agricultural science in secondary schools. Notwithstanding, they should be encouraged to keep up the good work.
3. Students should build good relationship with their teachers so as to enhance their academic achievement in agriculture and other subjects.
4. Students should learn to understand their teachers' attitude at every point in time in order to avoid their dislikes and facilitate their cordial relationship and Academic Achievement.
5. Future researchers should conduct studies on the strategies to enhance teacher-students relationship for improving students' academic performance.

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