

INFLUENCE OF TEACHERS' CHARACTERISTICS ON STUDENTS ACADEMIC PERFORMANCE IN AGRICULTURAL SCIENCE IN SELECTED SENIOR SECONDARY SCHOOLS IN OYO METROPOLIS, OYO STATE, NIGERIA

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DOI: <https://doi.org/10.5281/zenodo.16882383>

ABSTRACT: This study aims to identify the characteristics of teachers as a predictor of agricultural science students' academic achievement in selected senior secondary schools in Oyo metropolis of Oyo state. Two research questions and two null hypotheses served as the study's guide. With a sample of 200 agricultural science subject teachers from 40 senior secondary schools spread over Oyo East, Oyo West, Afijio, and Atiba local government districts of Oyo state, the study used a correlational research methodology.

The Agricultural Science Subjects Teachers' Characteristics Questionnaire (ASSTCQ), a structured questionnaire developed by the researcher, served as the data gathering tool. Cronbach's Alpha coefficient was used to determine the questionnaire's reliability, and the instrument's total reliability index came out to be 0.88. Regression analysis and Pearson Product Moment Correlation (PPMC) were used to examine the study's data.

The findings showed that the academic success of agricultural science students at Oyo metropolis has a strong positive correlation with the age of the teachers, and that there is a strong positive correlation between the attitude of the teachers and the academic success of agricultural science students.

Therefore, it was suggested that policymakers and educational stakeholders give teachers' age top priority when hiring new teachers because it is thought to be a significant influence in raising students' academic performance in agricultural science classes. Additionally, it was suggested that the government enact laws that would provide incentives to educators in order to increase their morale and, consequently, the academic achievement of students studying agriculture.

Keywords: Agricultural science education, Regression analysis, Pearson product moment correlation (PPMC), Teacher motivation, Educational policy.

Introduction

Educational processes flourish through the creation of innovative programs and practices that promote teaching, learning, mentoring, and guidance, all of which must be executed carefully or diligently in order to impart knowledge, skills, and capacities on learners in an appropriate manner (Dogubo, 2024). These experiences would

make students more aware of the skills and information they would learn and internalize to sustain their livelihoods, careers, and vitality in order to continuously contribute to the anticipated advancement of society.

The success or failure of agricultural science primarily depends on the teachers, who have the power to make it an engaging subject in secondary schools. The teacher is the most crucial component of the overall educational system; they serve as the main conduit for the transfer of technical know-how and intellectual traditions from one generation to the next and contribute to the maintenance of civilization's flame (University of the People, 2019). The true success or failure of any technique, tool, apparatus, or process rests with the teacher. Teachers are the ones who can assess the extent to which the goals and objectives of instruction have been met.

The agricultural science teacher is particularly important because he interacts with both the present and recurring events and occurring of the world now, in addition to the accomplishments and failings of man in the past (Dauda et al., 2024). It is essential to comprehend the opinions of the teachers regarding the return of history to secondary education. According to Demirdağ and Efe (2023), teacher characteristics are the cognitive, emotional, and attitudinal traits and ideas that educators hold about several facets of their work, the teaching and learning process, and the educational environment.

Qualities that can be quantified or inferred from a teacher's academic performance for professional records are known as teacher characteristics. According to Priestley et al. (2015), a teacher's instructional behavior toward goal completion is referred to as their teacher characteristics. Teachers' academic credentials, content expertise, instructional quality, evaluation practices, and job satisfaction are among their attributes, according to Fehintola (2014). Shumous and Schmidt (2013) state that classroom management and subject-matter expertise are two traits of teachers. Similarly, Kurgad and Gordon (2014) pointed out that for the past year, the focus on teacher attributes has been on age, gender, attitude toward teaching and quality, and academic credentials, professional experience, and competence.

A teacher's qualification is a specific set of abilities, experiences, or information that qualifies someone to teach. All the abilities a teacher needs to instruct successfully can be included in their qualifications. According to Onebunne and Ikwuagwu (2017), these abilities include formal education, experience, subject matter expertise, pedagogy studies, training duration, certification/licensing, and professional growth. According to Usman (2012), a qualified teacher is one who has a teaching certificate, a state license, at least a bachelor's degree, and is highly qualified in their field of expertise. According to Onebunne and Ikwuagwu (2017), a teacher's qualifications are linked to seven indicators: formal education, education in teaching-related subjects (in-field preparation), pedagogical studies, length of preparation period, certification and licensing, years of experience, and professional development activity preparation. Ball (2017) found that higher levels of teacher education significantly impact pupils' academic performance.

The number of years a teacher has taught is referred to as their teaching experience. It may be considered a trustworthy indicator of a person's capacity to manage a certain task. Many professions acknowledge that years of experience such as pay scales, benefit plans, and promotions play a significant role in human resource policy. The theory is that workers' knowledge, abilities, and productivity are improved by accumulated experience over time.

According to Schlecher (2016), new teachers bring fresh perspectives and abilities to the classroom, which could intangibly have a positive impact on students' learning. Schlecher also emphasized that novice instructors are less

successful than seasoned educators, but their performance quickly increases in the first few years of teaching. Clack (2017) confirmed that professors who have been in the field for a long time create students who do well academically. Ary et al. (2018) observed that while the length of a teacher's experience has a substantial impact on students' performance scores, the expert's expertise has a large beneficial influence on the results of several standardized performance tests.

According to Albert et al. (2015), the experience of teachers significantly impacts pupils' performance in elementary and upper secondary schools. They also emphasized that seasoned educators are more receptive to criticism, less doctrinal in the classroom, and have a wealth of knowledge to draw from. They can also offer ideas and insights during the teaching and learning process.

Students' behavior in the classroom can be positively impacted by a positive teacher-student interaction (Maulana et al., 2013). Students' behavior will suffer if there is a lack of the basis for a positive interaction. If students feel that their teachers do not respect or regard them, they will oppose norms and procedures and neither trust nor listen to what they have to say (Cornelius-White, 2017). To restate the self-determination hypothesis, children must feel that their teachers are emotionally invested in them. In addition, children are less likely to skip school if they have a good relationship with their professors (Manral, 2014). Feeling like you belong significantly influences positive behavior and the development of positive relationships.

The evaluation result of formal education in a cognitive domain within a defined subject area that is explicitly taught is known as academic performance. It is frequently seen as a measure of students' knowledge at a specific time. According to Nilson (2016), academic grades and graduation or passing rates are two typical metrics used to assess academic success. Nilson further emphasized that because performance is often associated with achievement, it is not surprising that course grades are used as a gauge of academic adjustment and success. Academic performance refers to the level of achievement gained at the conclusion of an academic activity.

This might be understood as the degree to which learning has occurred and can be achieved. According to Green (2017), academic achievement can be defined as an individual's level of efficiency and knowledge following a learning experience. Benjamin (2008) conducted a study on the academic performance of California State University Social Science students. He discovered that when there are school facilities, instructional materials, lab equipment, and qualified teachers in every subject area, as well as when each subject is taught consistently and effectively, students are able to complete their assignments, pay attention to their teachers, and participate in school activities, they perform better academically. However, teachers have a direct responsibility to shape student academic achievement, and they are the most important school-based factor in their education.

Statement of the Problem

The academic performance of agricultural science in a few selected secondary schools in the Oyo metropolis has consistently been dismal, despite the field's efforts to provide students with useful knowledge for sustainable development and food security. Numerous elements, ranging from insufficient teaching resources to student disposition, have been studied, but teachers' traits are frequently disregarded.

The qualities of teachers, including their credentials, teaching experiences, subject-matter expertise, communication abilities, classroom management, and teaching attitude greatly influence students' learning performance. The poor performance of students in agricultural science is caused mainly by the huge variations in teacher quality found in various Oyo metropolis schools. Therefore, it is crucial to examine how teacher attributes

predict academic performance in agricultural science. Knowing how these traits relate to one another will help discover the particular traits of teachers that can help or impede learning achievement.

Aim and Objectives:

This study aims to investigate the characteristics of teachers as predictors of the academic performance of agricultural science students in selected senior secondary schools in the Oyo metropolitan area of Oyo State. In particular, the study focused on the following:

- i. The academic performance of agricultural science students and teachers' age.
- ii. Teachers' attitudes and agricultural science students' academic performance.
- iii. How student-teacher relationships impact the academic performance of agricultural science students.

Research Questions

- 1. How does the academic performance of agricultural science students in secondary schools in the Oyo metropolis relate to the age of their teachers?
- 2. How do teachers' attitudes and the academic performance of agricultural science students in the Oyo metropolis secondary schools relate to each other?
- 3. How did teachers' attributes relate to the academic performance of agricultural science students in secondary schools in Oyo metropolis?

Research Hypotheses

The following null hypotheses were adopted for the study:

- 1. The academic performance of agricultural science students in secondary schools in the Oyo metropolis is not significantly correlated with the age of the teachers.
- 2. In secondary schools in the Oyo metropolis, no significant relationship was found between the academic achievement of agricultural science students and the attitudes of their teachers.

Research Methodology

To establish the degree of relationship between two scores that reflect two factors, a correlational research design was used (Uzuagulu, 2011). This entails determining how closely the two variables being studied are related. All public secondary schools in the Afijio, Atiba, Oyo East, and Oyo West local government districts of Oyo State that provide agricultural science courses make up the study's target population. A total of 200 respondents make up the study's sample. A total of 200 teachers participated in the study using the sample technique, which involved selecting five agricultural science instructors from each of ten public secondary schools located in the local government areas of Afijio, Atiba, Oyo East, and Oyo West in Oyo state.

The researcher developed a structured questionnaire with the title "Agricultural Science Teacher Characteristics." There were two sections on the questionnaire (A and B). Section A asked for personal information about the respondents, including their age, gender, teaching experience, and qualifications, while Section B was split into three sections to gather comments on teachers' attitudes and interpersonal relationships.

The researcher carefully checked the questionnaire items to sure they were appropriate for measuring the variables defined in the theoretical framework that are required to address the research questions. The overall dependability index and Cronbach's alpha coefficient of the instruments were both 0.88.

After the questionnaire was administered with the help of research staff, the data were immediately and in-person collected from the respondents. Regression analysis and Pearson product moment correlation (PPMC) were used

to examine the study data. All study data were addressed using PPMC, and the null hypothesis was tested using regression analysis at the 0.05 level of significance.

The benchmarks outlined by Bowman et al. (2015) were used to determine the Pearson (r) direction for the relationship between two variables. A low correlation is indicated by $r = 0.10-0.29$ or $r = -0.10$ to -0.29 , medium correlation is indicated by $r = 0.30-0.49$ or $r = -0.30$ to -0.49 , and high correlation is indicated by $r = 0.50-1.0$ or $r = -0.50-1.0$.

Results

Table 1 indicates the relationship between the age of teachers and the academic performance of students in the Oyo metropolis of Oyo State. The result showed that the majority of the respondents accepted that the age of teachers is one of the factors that affect students’ performance in Agricultural Science.

They also accepted that:

- Teachers’ years of experience affect students’ academic performance in Agricultural Science.
- Older teachers possess more insight and ideas into the teaching and learning processes.
- Younger teachers are more innovative.
- Teacher effectiveness increases systematically with an increase in the number of years of teaching.
- Older teachers always deal with subject matter alongside a variety of classroom issues.
- Teachers’ years of teaching are related to the ability to create learning materials.
- Older teachers possess unmatched pedagogical skills compared to younger teachers.
- The age of the teacher influences the teacher’s activeness in the classroom.

However, they rejected the notion that older teachers are more receptive to criticism and less authoritarian in the classroom.

Table 1: Relationship between the Age of Teachers and the Academic Performance of Students in the Oyo Metropolis

S/N	ITEMS	MEAN	STD	REMARK
1	The age of teachers is one of the factors that affect students’ performance in Agricultural Science.	3.55	0.10	Accepted
2	The experience of teachers affects students’ academic performance in Agricultural Science.	4.56	0.03	Accepted
3	Older teachers possess more insight and ideas regarding the teaching and learning processes.	3.60	0.11	Accepted
4	Younger teachers are more innovative.	2.88	0.18	Accepted
5	Older teachers are more receptive to criticism and less authoritarian in the classroom.	2.05	0.20	Rejected
6	Teacher effectiveness increases with increase in the number of years of teaching.	3.45	0.12	Accepted
7	Older teachers always deal with subject matter with a variety of classroom issues.	3.78	0.10	Accepted

8	Teachers' years of teaching are related to the ability to create learning materials.	3.80	0.02	Accepted
9	Older teachers possess unmatched pedagogical skills compared with younger teachers.	3.17	0.12	Accepted
10	The age of the teacher influences teachers' activeness in the classroom.	4.35	0.03	Accepted
Grand Mean		3.52	0.10	Accepted

STD=standard deviation

Table 2 shows the relationship between the attitude of teachers and the academic performance of agricultural science students. The results revealed that the respondents accepted that teachers encourage student involvement in class, that the teachers have positive relationships with students, that teaching agricultural science is a passion of the teachers, that teachers use real-life to illustrate concepts, that teachers improve teaching by attending workshops/conferences, that teachers are involved in peer-mentoring or coaching of students, that teachers structured classroom management styles, that teachers have a clear plan for teaching their subject matter, and that teachers' attitude positively made students to relate freely with their teachers. However, the majority of the respondents rejected that teachers should provide individualized attention to students.

Table2: Relationship between teachers' and academic performance of Agricultural Science students

S/N	ITEMS	MEAN	STD	REMARK
1	Teachers provide individualized attention to students	2.11	0.35	Rejected
2	The teacher encourages student involvement in class	3.56	0.02	Accepted
3	Positive relationship between teachers and students	3.05	0.03	Accepted
4	Teaching agricultural science is the passion of teachers	3.45	0.08	Accepted
5	Teachers use real-life examples to illustrate concepts	3.55	0.01	Accepted
6	Teachers improve teaching by attending workshops/conferences	3.11	0.20	Accepted
7	Teachers are involved in peer-mentoring or coaching students	3.19	0.04	Accepted
8	Teacher-structured classroom management styles	2.55	0.30	Accepted
9	Teachers have a clear plan for teaching their subject matter	3.50	0.20	Accepted
10	The attitude of teachers positively made students relate freely with their teachers	4.23	0.02	Accepted
Grand mean		3.23	0.13	Accepted

STD=standard deviation

Table 3 indicates the Pearson product moment correlation for the test of correlation between teachers' age and agricultural science students' academic performance. The results revealed a correlation coefficient of 0.745 between the age of teachers and academic performance of agricultural science students. This implies that the relationship between teachers' age and academic performance of agricultural science students was positive and highly and significantly (0.001). The highly significant denoted that teachers' age plays an important role in determining the academic performance of agricultural science students.

Table 4.3: Pearson Product Moment Correlation for the Correlation Test between Teachers’ Age and Academic Performance of Agricultural Science Students

Variables	Academic Achievement	Teachers’ Age
Teachers’ Age	0.745***	1
Academic Achievement	1	0.745

***P < 0.001 = Very Highly Significant

Table 4 shows the Pearson product moment correlation for the test of correlation between teachers’ attitude and agricultural science students’ academic performance. The results revealed a correlation coefficient of one between the attitude of teachers and academic performance of agricultural science students. This indicates that the relationship between the attitude of teachers and academic performance of agricultural science students was positive, highly and significantly correlated. The highly significant implied that the attitude of teachers plays an important role in determining the academic performance of agricultural science students.

Table 4: Pearson product moment correlation for the test of correlation between teacher’s attitude and Agricultural Science students’ academic performance

Variables	Academic Performance	Teachers Attitude
Academic Performance	1	0.788***
Teachers Attitude	0.788***	1

***P < 0.001 = Very Highly Significant

Hypothesis 1: There is no significant relationship between age of teachers and the academic achievement of students of Agricultural Science

Table 5 shows the results of the regression analysis for the test of the significant relationship between the age of teachers and academic performance of students in agricultural science. The analysis showed that the significance criterion (Sig.) or P-value was 0.000, which is less than the 0.05 confidence level. The result highlighted a statistically significant relationship between teachers’ age and agricultural science students’ academic performance. Furthermore, the coefficient of determination (R²) was 0.867. This inferred that 86.7% of the variation in the academic performance of agricultural science students is related to the age of teachers.

Table 5: Regression analysis for the test of significant relationship between the age of teachers and academic performance in agricultural science students

Model	Unstandardized Coefficient (B)	SE	Standardized Coefficient Beta	R ²	T	Sig
Teachers’ Age	0.450	0.048	0.745*	0.867	16.234	0.000**
Academic Performance	3.243	0.0648			43.465	0.000

P = Highly Significant,* p = significant

SE = Standard Error, R² = coefficient of determination

Hypothesis 2: There is no significant relationship between the attitude of teachers and the academic performance of agricultural science students.

Table 6 depicts the regression analysis for the test of significant relationship between teachers’ attitude and academic performance of agricultural science students. The analysis revealed that the significant criteria (Sig.) or P-value was 0.000 which is less than confidence level of 0.05. The result highlighted that there is statistically significant relationship between teachers’ attitude and academic performance of agricultural science students. Furthermore, the result showed that the coefficient of determination (R²) was 0.758. This inferred that, (75.8%) of variation in students’ academic achievement in Agricultural Science subject is connected with teachers’ attitude.

Table 6: Regression analysis for the test of significant relationship between teachers’ attitude and academic performance of Agricultural Science students

Model	Unstandardized Coefficient (B)	SE	Standardized Coefficient Beta	R ²	T	Sig
Teachers’ Attitude	1.864	0.867		0.756*	16.756	.000**
Academic Achievement	0.05	0.147		0.758	4.656	.085

*P = Highly Significant, p = Significant
 SE = Standard Error, R² = coefficient of determination

Discussion

The current results on the relationship between age of teachers and the academic performance of students in Oyo metropolis indicated that the majority of the respondents agreed that on all the variables were in line with Gamaraja et al. (2024) who revealed that the academic achievement of students of agricultural entrepreneurial subjects in Niger state has a highly positive relationship with teachers' age and that the relationship between teachers' attitude and the academic achievement of students of agricultural entrepreneurial subjects in Niger State was positive and high. In contrast the recent findings of Nseabasi, (2025) on school variables and students’ attitude toward learning in secondary schools in the Urue offong/Oruko local government areas stressed the correlation between teachers’ attitude and age on students’ academic performance as a part of the factors that enhanced the academic outputs of the students and thus corroborated this current study on the prediction of attitude and age of the teachers on academic performance of agricultural students.

However, the relationship between attitude of the teachers and the academic performance of agricultural science students indicated that the majority of the respondents agreed that all the variables observed were similar to the findings of Gamaraja et al. (2024), Bambi (2020), Kenni et al. (2024), Akatwijuka, et al. (2024), Olayemi et al. (2016), Oludare (2023), Victor and Juliana (2019) and Suleiman (2022). Gamaraja et al. (2024) noted that the attitude of teachers affected the academic achievement of agricultural entrepreneurial students. Bambi (2020) reported significant high positive relationship between teachers’ attitude and students’ academic performance in financial accounting in senior secondary schools in Adamawa State Nigeria. Kenni et al. (2024) noted a significant positive correlation between teachers' readiness to teach and student's academic performance in science subjects. A significant positive correlation between communication attitude and academic performance of students and a

significant positive correlation was found communication attitude and academic performance of students and between prompt promotion of teachers and academic performance of the students in science subjects. Akatwijuka et al. (2024) claimed a strong relationship between teachers' motivation levels and student's academic performance, with schools with demotivated teachers registering persistently low passing rates over the last five years compared to over 60% in schools with motivated staff. Olayemi et al. (2016) affirmed a significant relationship between teacher qualification and student academic performance, with a significant relationship between capacity building workshops for teachers and student academic performance. Oludare (2023) showed that factors such as teachers' academic backgrounds and personality level impact students' academic success in computer science. The findings also indicated a correlation between children's academic success and between teachers' qualifications and students' academic success. Victor and Juliana (2019) depicted that many more factors account for students' academic achievement and that parents and guardians have a role to play in enhancing students' academic achievement to final examination because the school child spends only approximately lesser their time in school and much time at home and in the wider society.

Meanwhile, studies of Adams et al. (2023); Tajudeen et al. (2023) reported that funds inadequate for the teaching of agricultural science with inadequate learning facilities result to poor academic performance, revealed that, there is significant differences in students' academic achievement to the basis of conducive or unconducive learning environment among senior secondary school students, significant differences is found between academic achievement of senior secondary school students taught by teachers with different teaching skills in Jigawa state. The works of Sabitu and Nuradeen (2010), who reported that teachers' attitude easily predicted the students' academic performance in geography in secondary schools in Ondo state, Nigeria agreed with the findings of the current study.

CONCLUSION

The academic performance agricultural science students in senior secondary schools nationwide is a significant factor in the country's economic growth. This is because it is one way to accurately reflect on how well the educational activities in the classroom are being carried out. According to this study, teachers' qualifications, age, teaching experience, innovativeness, attitude, and interpersonal relationships are some of the aspects that influence the results. In this study, the factors and academic achievement of agricultural science students in secondary schools in Oyo State's capital city were found to be positively and significantly correlated. When basically, teachers are properly mature and have a positive attitude toward their work, the academic performance of agricultural science students in secondary schools in the Oyo metropolis is improves.

RECOMMENDATION

Based on the research findings, the following recommendations were made:

- i. The teachers should be inventive, build strong relationships with their students, and make use of the resources at their disposal to make their classes engaging.
- ii. All levels of government should hold regular conferences, seminars, and workshops to help teachers stay up to speed on their subject-matter expertise and cultivate the qualities that foster positive teacher-student relationships.
- iii. Since age is considered a significant influence in raising students' academic achievement in agricultural and entrepreneurial courses in schools, the federal and state education ministries of education ministries should

prioritize it when hiring teachers.

iv. To improve the academic performance of agricultural students, the Oyo State government should develop policies that will provide teachers incentives to boost their morale.

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