

Full Length Research

Relationship between Teacher Characteristics and Students' Academic Achievement in Agricultural Entrepreneurial Subjects in Senior Secondary Certificate Examination in Niger State

¹Daniel, Hassana Kefas, ²Gamaraja, Japari Dominic and ³Ijantiku, Charles Moses

¹Department of Vocational education, ModibboAdama University, Yola.

Email: hassanadaniel52@gmail.com, Phone: +234 8065560275

²National Examination Council, Minna, Niger State. Phone: +234 8061517056

³Ibrahim Babangida Library, ModibboAdama University, Yola. Corresponding author's Email: ijantiku@mau.edu.ng
Phone: +234 8032902318

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Abstract

The study investigated the relationship between teacher characteristics and students' academic achievement in agricultural Entrepreneurial Subjects in the Senior Secondary School Certificate Examination in Minna, Niger State. The study adopted a correlational research design. The target population of the study was all the 151 agricultural entrepreneurial subjects' teachers and the results of 44,182 students. The sample of the study was 532. There was no sampling for the agricultural entrepreneurial teachers because the population was manageable. Proportionate Sampling Technique was used in the selection of 381 results of students. A questionnaire titled "Agricultural Entrepreneurial Subjects Teachers' Characteristics Questionnaire (AESTCQ)" was used for data collection. Data was collected with the help of five trained research assistants. The data was analyzed using PPMC to answer all the research questions, while Regression analysis was used to test the null hypotheses at a 0.05 level of significance. Findings revealed, among which are: (1) the relationship between teachers' qualification and the academic achievement of students of agricultural entrepreneurial subjects in SSCE in Niger State is positive and high. (2) There is a high positive relationship between teaching experience and the academic achievement of students of agricultural entrepreneurial subjects in SSCE in Niger State. (3) Teacher's gender has a low positive relationship on the academic achievement of students of agricultural entrepreneurial subjects in SSCE in Niger State. Based on the findings, it was recommended that (1) the federal and state ministries of education should, as much as possible, insist on recruiting only people who hold a higher qualification to teach agricultural entrepreneurial subjects in senior secondary schools. (2) The Federal and State ministries of education should introduce a teacher exchange program in secondary schools across the country to broaden the experiential horizon of secondary school teachers. (3) The Federal and State ministries of education should not place any preference on teachers' gender in an attempt to enhance the academic achievement of students in agricultural entrepreneurial subjects in schools.

Keywords: Relationship, Teachers Characteristics, Students' Academic Achievement, Agricultural Entrepreneurial Subjects, Senior Secondary Certificate Examination.

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INTRODUCTION

Education is an important ingredient for the industrial and technological development of any nation": This statement emphasizes the crucial role of education in the progress of a country. According to the Harvard Business Review (2016), education plays a fundamental role in developing a skilled and knowledgeable workforce, fostering innovation and creativity, and promoting economic growth. The article highlights the importance of education in the progress of a country.

Nigeria, being a developing nation, in order not to be left behind among the comity of nations, has over the years come up with policies that are capable of moving her to the next level with respect to economic, industrial, and technological advancement. Based on the relevance of entrepreneurial education, the government of Nigeria took a major step by the introduction of entrepreneurial subjects into the senior school curriculum in 2011 (Ementa, 2013). Animal Husbandry and Fishery are the two agricultural entrepreneurial subjects introduced alongside 32 other entrepreneurial subjects in 2011.

The objective of entrepreneurial subjects, according to the Nigeria Education Research and Development Council (NERDC) (2009), is to stimulate and sustain students' interest and enable them to acquire basic knowledge and practical skills, thus preparing them for further studies and occupation in various entrepreneurial subjects such as Animal husbandry and Fishery. Alabi (2014) reported that the youthful stage has been noted as the best possible time for training in entrepreneurship for self-reliance. Alabi (2014) further stressed that entrepreneurship subjects are designed for the students to be equipped to break the facade of unemployment through the development of self as a precursor to a meaningful contribution to the development of society. As much as entrepreneurial skills are important to youths for the economic development of the nation, the role of the teacher who imparts the skills cannot be overemphasized. This is because a teacher is a person who helps students acquire knowledge, skills, attitudes, and ideas in any field of study. A teacher is someone who has undergone the necessary and recommended training in teaching and is charged with the full responsibility of managing the classroom in such a way that it enhances the learning behavior of the student. Schön (2017) stated that a teacher is ultimately responsible for translating policy on education into action in the classroom. One of the key factors that could influence a teacher's success in his job is his qualities, known in academic circles as teacher characteristics.

Teacher characteristics can be referred to as qualities that can be measured or derived from their academic or professional records. Priestley, Biesta, and Robinson (2015) defined teacher characteristics as instructional behavior exhibited by the teacher towards goal attainment. The teacher characteristic that was considered in this study includes teaching experience, gender, and teacher's qualification. Teacher qualification is a particular skill or type of experience or knowledge someone possesses to make him/her suitable to deliver instruction to students. Shea and Bidjerano (2018) reported that teacher qualification is the academic training received as a result of enrollment into an educational institution. Such skills include formal education, experience, knowledge of subject matter, pedagogy studies, duration of training, certificate, and professional development. Nevertheless, teachers' qualification is directly related to teachers' teaching experience.

Teaching experience is the knowledge and skills a teacher gets as a result of teaching a particular subject for a period of time. Clark (2017) affirmed that teachers with years of experience in the profession turned out students with high academic achievement. Teachers' teaching experience plays a vital role in the academic performance of students regardless of teachers' gender.

Teachers' gender refers to all the characteristics of male and female teachers which any particular society has determined and assigned to each sex. Gender is a specially constructed phenomenon that is brought about as society ascribes different roles, duties, behaviors, and mannerisms to the two sexes (Nixon, Campbell & Luft, 2016). Teacher gender has been noted to play a role in students' achievement.

Academic achievement is a measure of what a student has learned over a predetermined period of time. Sekaran and Bougie (2016) noted that students' academic achievement is dependent on several factors, namely teaching method, guidance, availability of facilities, methods of testing, background, organization, motivation, and opportunity. These factors, when properly attended to by the stakeholders involved, are capable of enhancing students' academic achievement, especially at the secondary school level.

A senior secondary school student is a learner who is enrolled in the upper part of the secondary school level of the Nigerian educational system. In order to graduate, a senior secondary school student is expected to spend three years after which he sits for an exit examination known as the Senior Secondary Certificate Examination (SSCE). In Nigeria, the SSCE is conducted by two main examination bodies: the National Examinations Council (NECO) and the West African Examination Council (WAEC). Most secondary schools in Niger state offer animal husbandry or fishery as an entrepreneurial subject. It is also one of the agrarian states with 85% arable land. Therefore, it is important to investigate the relationship between teacher characteristics and students' academic achievement in fishery and animal husbandry subjects.

Relationship between teacher characteristics and students' academic achievement is a topic of great importance in educational research. Several studies have been conducted to examine the impact of various teacher characteristics on students' academic performance. In the context of agricultural entrepreneurial subjects in the Senior Secondary Certificate Examination in Niger State, the relationship between teacher characteristics and students' academic achievement is worth exploring. One study that sheds light on this relationship is a research article titled "The Effect of Teacher Characteristics on Student Achievement: Evidence from Panel Data" by Hanushek, E. A. (1992). The author analyzed panel data from the High School and beyond survey conducted in the United States to examine the impact of teacher characteristics on student achievement. The study found that teachers' education and experience were important factors in determining students' academic outcomes. Teachers with higher levels of education and more experience were more effective in promoting student learning and achievement.

Statement of the Problem

In a bid to bring about educational development capable of fostering national development, huge resources have been spent on education, agricultural entrepreneurship subjects inclusive. Unfortunately, these efforts are yet to yield the desired outcome.

Since a teacher is the key implementer of the curriculum and controls what goes on in the classroom, it is of concern because good results are expected from students after investing heavily in secondary school education. According to Borgen and Hjardemaal (2017), students' academic achievement in agricultural entrepreneurial subjects is a function of the productivity of the teachers handling the subjects. Teacher characteristics such as qualification, teaching experience, and gender, among other things, determine their productivity. Therefore, the inconsistency in the academic achievement of students of agricultural entrepreneurial subjects in Niger state could be linked to teacher characteristics and is worth investigating. Hence, the problem of this study is to determine if there is a relationship between teacher characteristics and the students' academic achievement in agricultural entrepreneurial subjects in the senior secondary school certificate examination in Niger state.

Purpose of the Study

The study aimed to determine the relationship between teacher characteristics and students' academic achievement in agricultural entrepreneurial subjects in the Senior Secondary Certificate Examination in Niger State. Specifically, the study aimed to determine the relationship between:

1. Teacher's qualification and the academic achievement of students in agricultural entrepreneurial subjects in the SSCE.
2. Teaching experience of teachers and the academic achievement of students in agricultural entrepreneurial subjects in the SSCE.
3. Gender of teachers and the academic achievement of students in agricultural entrepreneurial subjects in the SSCE.

Research Questions

The study provided answers to the following research questions:

1. What is the relationship between teacher's qualification and the academic achievement of students in agricultural entrepreneurial subjects in the SSCE in Niger State?
2. What is the relationship between teaching experience of teachers and the academic achievement of students in agricultural entrepreneurial subjects in the SSCE in Niger State?
3. What is the relationship between the gender of teachers and the academic achievement of students in agricultural entrepreneurial subjects in the SSCE in Niger State?

Hypotheses

The study tested the following hypotheses at a 0.05 level of significance:

- HO1: There is no significant relationship between teacher's qualifications and the academic achievement of students in agricultural entrepreneurial subjects in the SSCE in Niger State.
- HO2: There is no significant relationship between teaching experience of teachers and the academic achievement of students in agricultural entrepreneurial subjects in the SSCE in Niger State.

HO3: There is no significant relationship between the gender of teachers and the academic achievement of students in agricultural entrepreneurial subjects in the SSCE in Niger State.

The theoretical framework found relevant to this study is the classroom teaching and learning theory by Mitzel (1969). The Mitzel's theory of teaching and learning was propounded in 1960. The theory postulated that the teaching and learning process focuses on four variables: presage, context, process, and product variables. Presage variables are attributed to the teacher and teacher characteristics. Mitzel revealed that the presage variable explains those factors and characteristics associated with a teacher, which may include personality, preparation, general characteristics, background, competencies and inadequacies, teacher education, experiences, and teacher properties. These characteristics define what a teacher is and their capabilities to teach a particular subject matter. The context variable describes the students and where the teaching and learning take place. This may include the classroom, school environments, and other facilities that facilitate learning processes such as workshops, libraries, laboratories, and school farms for agricultural students, among others. A friendly context positively impacts teaching and learning processes and results in positive outcomes, while an unfriendly context negatively impacts learning outcomes. The process variable describes the relationship between presage and context variables, indicating the interaction between teachers, students, and learning facilities within the learning environment. The product variable is the final category of variables in the theory, which is the outcome of the educational exchange in the process variables manifested in the Senior School Certificate Examination.

Mitzel revealed that the interaction between presage variables, which include a teacher's personality, preparation, general characteristics, background, competencies and inadequacies, teacher education, experiences, and teacher properties, the context variables, which include the classroom, school community, and other school facilities, and the process variables, which reflect what happens between the presage and context, largely affect the product variables, which is the student's academic achievement as reflected in their scores in SSCE agricultural entrepreneurial subjects. The contribution of this theory to this study is that the theory clearly points out, in a broader perspective, the characteristics of teachers that are believed to have a direct relationship with the outcome of learning processes, which is translated into students' performance. This guided the researcher in developing a research instrument that reflects specifically on teachers' academic qualification, teaching experience, and gender as sub-components of the presage variables of the theory. The relationship between teacher characteristics and the academic achievement of students of agricultural entrepreneurial subjects in the SSCE examination in Niger State is best explained by the theory as illustrated in the diagram below.

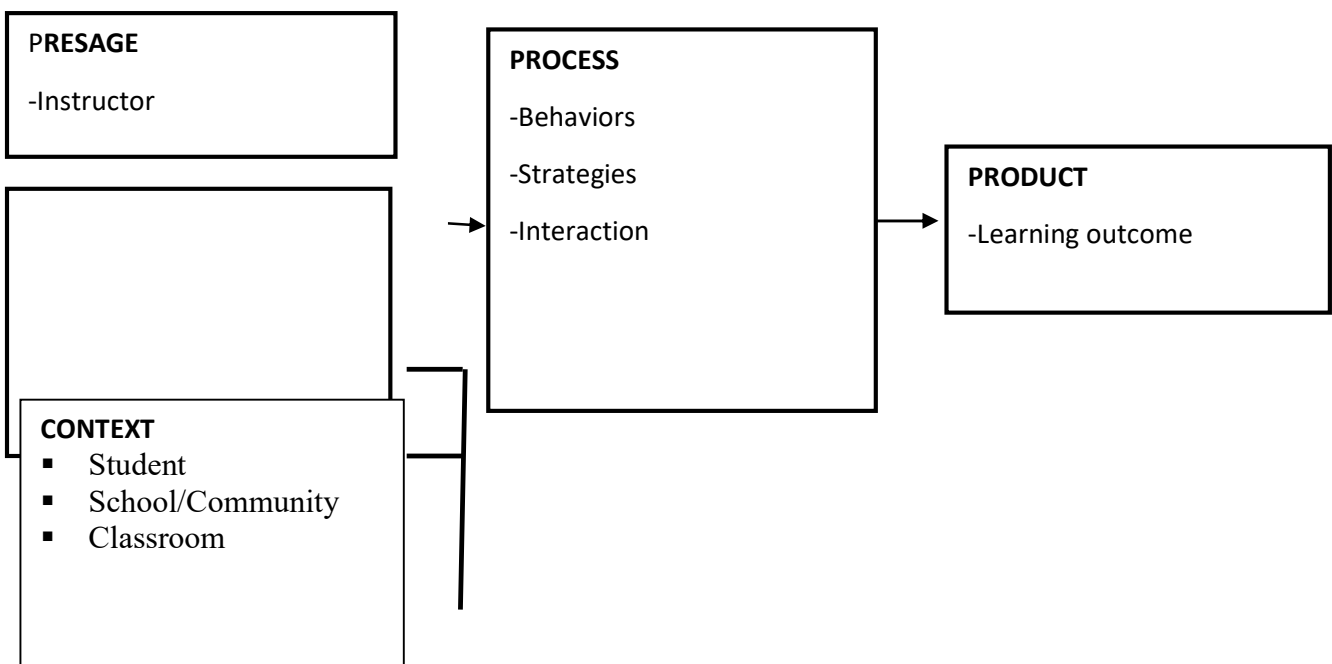


Figure 1: An Illustration of the Mitzel's Theory for Classroom Teaching and Learning.
Source: Miller (2016).

Teacher's Qualification and Students' Academic Achievement

Teacher's qualification is a particular skill or type of experience or knowledge that someone possesses to make him or her suitable to teach. Teacher's qualification can encompass all the skills a teacher requires to teach effectively. Such skills include formal education, experience, subject matter knowledge, pedagogy studies, duration of training, certification/licensing, and professional development (Onebunne & Ikwuagwu, 2017). Usman (2012) reported that a qualified teacher can be defined as one who holds a teaching certificate and/or is licensed by the state, possesses at least a bachelor's degree, and is well qualified in his/her area of specialization. Onebunne and Ikwuagwu (2017) associated teacher's qualification with seven indicators which are: teacher's formal education, teacher's education in the subject matter of teaching (in-field preparation), teacher education in pedagogical studies, duration of the preparation period, certification and licensing status, years of experience, and preparation in professional development activities. Ball (2017) observed that an increased level of teacher education has a significant effect on student outcomes. This study will investigate how teacher's qualification relates to students' academic achievement.

Teaching Experience and Students' Academic Achievement

Teaching experience refers to the number of years a teacher has taught. It can be perceived as a reliable predictor of a person's ability to handle a certain task. Many occupations recognize employees' years of experience as a relevant factor in human resource policies, including compensation systems, benefits packages, and promotion decisions. The idea is that experience gained over time enhances the knowledge, skills, and productivity of workers. Schleicher (2016) noted that novice teachers are a source of new energy and skills and therefore may contribute intangible benefits to student learning. Schleicher further stressed that new teachers are less effective than experienced teachers, but their performance improves rapidly during their first years of teaching. Clark (2017) affirmed that teachers with years of experience in the profession produce students with high academic achievement. Ary, Jacob, Irvine, and Walker (2018) conducted studies on the effect of teachers' experience and found that it has a significant positive effect on the scores of different standardized performance tests. The length of a teacher's experience has a significant effect on students' performance scores. Albert, Yungungu, and Osman (2015) reported that a teacher's experience has a significant effect on pupil performance in primary schools and at the upper secondary school level. They further stressed that experienced teachers have a richer background of experience to draw from and can contribute insight and ideas in the course of teaching and learning, and they are open to correction and are less dictatorial in the classroom.

Teacher's Gender and Students' Academic Achievement

Gender, according to Lahey (2003), is a psychological experience of being male or female. It has to do with personality and is a central component of self-concept. Neuendorf (2016) also defined gender as the sex of an individual, that is, male or female. In summary, gender can be defined as the stratification of human beings according to their capabilities as culture deems fit and with reference to their biological characteristics or sex, that is, male or female. Gender cultures are influenced by time, education, social activities, or needs arising from the group, which lead to changes in such cultures (Willis, 2017). Simmons (2017) reported that the gender of teachers has little apparent effect on the academic motivation and engagement of either boys or girls. He stressed that students value a teacher who is consistent and supportive regardless of their gender. Lim and Meer (2017) opined that matching the gender of teachers with students is associated with better student performance. Research on the effect of gender on the performance of students has been reported in different parts of the world and in various subjects over the years. Based on these reports, the current study aims to investigate the gender of the teacher as one variable of teacher characteristics in relation to students' academic achievement in agricultural entrepreneurial subjects.

Academic Achievement

The concept of academic achievement has been defined as the assessment outcome of formal instruction in a cognitive domain within a defined subject area that is explicitly taught and is often thought of as indications of students' knowledge taken at a particular point in time. Nilson (2016) outlined two common criteria used to determine academic achievement: academic grades and graduation or passing rates. Nilson further stressed that the use of course grades as a measure of academic adjustment and success is not surprising because typically successful students are considered to be those who perform well academically. Academic achievement is the degree of success attained at the

end of an academic exercise, which can be conceived to mean the extent to which one is able to accomplish after learning has taken place. Green (2017) reported that academic achievement can be seen as the level of efficiency and knowledge demonstrated by an individual after learning has occurred. Benjamin (2008) conducted a study on students' academic achievement in the trustees of the California State University on Social Science and Science. He found that students perform better academically when there is the availability of school facilities, instructional materials, laboratory equipment, qualified teachers in all subject areas, constant and effective teaching of each subject, students carrying out research, being able to do their assignments, paying attention to their teachers, and involving themselves in school activities. Teachers, however, have a direct responsibility to shape student academic achievement, and they are the most important school-based factor in their education. That is why it is important to examine which teacher characteristics may be related to students' academic achievement. With the introduction of the 9-3-4 system of education in Nigeria, students spend nine years in basic primary school, three years in Senior Secondary School (SSS), and four years in tertiary institutions. Secondary school, as a link between primary and tertiary institutions, provides adequate knowledge for effective citizenship and benefits to society. However, the National Council on Education (NCE) approved a new curriculum structure for the three years of senior secondary education, as released by the Nigerian Educational Research and Development Council (NERDC), known as curriculum 2007.

Entrepreneurship Education

Entrepreneurship education is a learning process that starts as early as elementary school and progresses through all levels of education (Gbemisola & Adeola, 2014). Bryman and Bell (2015) opined that entrepreneurship education seeks to prepare people, particularly the youth, to be responsible by immersing them in real-life learning experiences whereby they can take risks, manage results, and learn from the outcomes. Entrepreneurship education in a school curriculum ensures that each learner has a chance to become an entrepreneur, and each student is the architect of his/her fortune or destiny. With the knowledge of entrepreneurial action, students or potential entrepreneurs are able to understand how and what it means and takes to own a business, create ideas towards the achievement of desired goals and objectives, which will certainly improve the growth and development of a country's economy. With the growing number of students graduating from secondary school annually, if measures are not taken to occupy them and prevent them from restiveness, there is a tendency that the situation will escalate the rate of poverty, corruption, and other social vices like cultism, armed robbery, kidnapping, etc. It is expected that our educational institutions should become centers for inculcating the spirit of entrepreneurship rather than the spirit of passing examinations to get white-collar jobs.

Methodology

In this study, a correlational research design was employed to examine the relationship between teacher characteristics and student performance in agricultural entrepreneurial subjects. This methodology allows for understanding the extent of the relationship between these variables and shed light on the factors that may influence student outcomes in Niger State's Senior Secondary Certificate Examination.

Research Design

Correlational research design was used, which shows the extent of the relationship between two scores that represent two variables (Uzoagulu, 2011). An explanatory correlation design was used to establish the relationship between teacher characteristics such as qualification, teaching experience, and gender, and the performance of students in agricultural entrepreneurial subjects in the Senior Secondary Certificate Examination in Niger State.

Area of the Study

The study was conducted in Niger State, located in the North Central Zone of Nigeria, and occupying a land area of 74,244 square kilometers, which is about 10% of the total land area of Nigeria (Ikusemoran, Kolawole, & Adegoke, 2014). The choice of Niger State as the area for this study is based on the fact that Niger State is one of the agrarian states with 85% arable land, and most secondary schools in the state offer fishery and animal husbandry as trade subjects. Additionally, the proximity and convenience for the researcher to collect data were considered.

Population of the Study

The target population of the study was all 151 agricultural entrepreneurial subjects' teachers from a total of 217 Senior Secondary Schools in Niger State. The schools are spread across the seven education zones in the state, which include Minna, Bida, Kontagora, Suleja, Rijau, Borgu, and Kutigi. The population also included the results of the 44,182 students who sat for the SSCE examination in agricultural entrepreneurial subjects from 2014 to 2018.

Sample and Sampling Technique

The sample of the study consisted of all 151 agricultural entrepreneurial subject teachers in a total of 217 Senior Secondary Schools in Niger State, and a proforma of 381 results of students who sat for the SSCE examination in agricultural entrepreneurial subjects from 2014 to 2018. Purposive Population Sampling Technique was used to select the 151 agricultural entrepreneurial subjects' teachers in Senior Secondary Schools in Niger State because the population was manageable. Proportionate Sampling Technique was used to ensure adequate representation of each grade in the 381 results of students based on percentage. The selection of 381 results of students was based on the fact that a sample size of 381 holds the statistical power to represent a population of 44,182.

Instrument for Data Collection

A structured questionnaire titled "Agricultural Entrepreneurial Subjects Teachers' Characteristics Questionnaire (AESTCQ)" was developed by the researcher. Respondents were asked to tick or mark against the options that corresponded to their opinion.

Validation of the Instrument

Face validity of the instrument was established by experts in agricultural entrepreneurial subjects. Two lecturers of Agricultural Technology Education in the Vocational Education Department, Faculty of Education, ModdiboAdama University, Yola, Adamawa State, and a teacher of agricultural entrepreneurial subjects in a public secondary school in Minna, Niger State. Each validator was given a copy of the questionnaire and requested to review the items, identify ambiguities, and provide solutions for improving the instrument. Their observations and comments were used to improve the content of the instrument for the final draft of the questionnaire.

Reliability of the Instrument

The questionnaire items were trial tested in a small sample in Kaduna State consisting of 15 agricultural entrepreneurial subjects' teachers in Kaduna North and Kaduna South Local Government areas. The reliability of the questionnaire was calculated using Cronbach's Alpha coefficient, and the overall reliability index of the instrument was found to be 0.82.

Method of Data Collection

The data was collected with the help of three research assistants who were trained by the researchers on how to interact with the respondents for a positive result. Student's academic achievement scores (scores in animal husbandry and fishery at the Senior Secondary Certificate Examination) for five years in agricultural entrepreneurial subjects were collected from the National Examinations Council (NECO). To facilitate the study, a copy of an introductory letter was provided to the school principal upon arrival to ensure permission from the school authority to collect samples. The instrument was administered and collected using a wait-and-take technique to ensure a good return rate of the instrument.

Method of Data Analysis

PPMC was used to answer all the research questions, and regression analysis was used to test the null hypotheses at

a significance level of 0.05. The choice of PPMC was based on its appropriateness as a measure for establishing the strength of linear association between two variables measured on interval scales. Regression analysis, on the other hand, was employed to test the null hypotheses because it is a reliable method for estimating the relationships between a dependent variable and one or more independent variables. Additionally, it produces a regression equation where the coefficients represent the relationship between each independent variable and the dependent variable.

The decision regarding the research questions was based on the benchmarks proposed by Bowman, Alvarez-Jimenez, Howie, McGorry, and Wade (2015) for determining the direction and strength of the Pearson correlation coefficient (r) between two variables. Specifically, the following thresholds were used: $r = 0.10$ to 0.29 or $r = -0.10$ to -0.29 , indicating low correlation; $r = 0.30$ to 0.49 or $r = -0.30$ to -0.49 , indicating medium correlation; and $r = 0.50$ to 1.0 or $r = -0.50$ to -1.0 , indicating high correlation.

Regarding the hypotheses, decisions were made by comparing the significance value (p -value) with a significance level of 0.05. A p -value below 0.05 indicated a significant relationship, while a p -value above 0.05 indicated no significant relationship (Foster, Lane, Scott, Hebl, Guerra, Osherson, & Zimmer, 2018).

To enhance speed and accuracy, all statistical calculations were performed using the Statistical Package for Social Sciences (SPSS) version 23.

RESULTS AND DISCUSSION

Research Question One

What is the relationship between teacher's qualification and the academic achievement of students in agricultural entrepreneurial subjects in the SSCE in Niger State?

Table 1: Pearson Product Moment Correlation for the Test of Relationship between Teachers' Qualification and the Academic Achievement of Students' of Agricultural Entrepreneurial Subjects in SSCE in Niger State. NT = 151, NS = 381

Variables		Academic Achievement	Teachers' Qualification
Teachers' Qualification	Pearson Correlation	.795**	1
Academic Achievement	Pearson Correlation	1	.795**

Table 1 the correlation coefficient shown indicates the Pearson product moment correlation between teachers' qualification and the academic achievement of students studying agricultural entrepreneurial subjects in the SSCE in Niger State. The results reveal a correlation coefficient of 0.795, indicating a strong positive relationship between teachers' qualification and the academic achievement of students in this field. This finding suggests that teachers' qualification significantly influences the academic achievement of students studying agricultural entrepreneurial subjects in the SSCE in Niger State.

Research Question Two

What is the relationship between teaching experience of teachers and the academic achievement of students in agricultural entrepreneurial subjects in the SSCE in Niger State?

Table 2: Pearson Product Moment Correlation for the Test of Relationship between Teachers' Experience and the Academic Achievement of Students' of Agricultural Entrepreneurial Subjects in SSCE in Niger State. NT = 151, NS = 381

Variables		Academic Achievement	Teaching Experience
Teachers' Experience	Pearson Correlation	.771**	1
Academic Achievement	Pearson Correlation	1	.771**

Table 2 presents the Pearson product-moment correlation, which examines the relationship between teachers' teaching experience and the academic achievement of students in agricultural entrepreneurial subjects in the SSCE in Niger State. The correlation coefficient obtained for this relationship was .771. This value indicates a high positive correlation between teachers' teaching experience and the academic achievement of students in agricultural entrepreneurial subjects in the SSCE in Niger State. Consequently, it can be inferred that teachers' teaching experience has a positive influence on the academic achievement of students in agricultural entrepreneurial subjects in the SSCE in Niger State.

Research Question Three

What is the relationship between the gender of teachers and the academic achievement of students in agricultural entrepreneurial subjects in the SSCE in Niger State?

Table 3: Pearson Product Moment Correlation for the Test of Relationship between Teachers' Gender and the Academic Achievement of Students' of Agricultural Entrepreneurial Subjects in SSCE in Niger State. NT = 151, NS = 381

Variables		Academic Achievement	Teachers' Gender
Teachers' Gender	Pearson Correlation	.121	1
Academic Achievement	Pearson Correlation	1	.121

Table 3 presents the Pearson product-moment correlation coefficient, which assesses the relationship between teachers' gender and students' academic achievement in agricultural entrepreneurial subjects in the SSCE (Senior Secondary Certificate Examination) in Niger State. The results indicate a correlation coefficient of 0.121, suggesting a low positive relationship between teachers' gender and students' academic achievement in agricultural entrepreneurial subjects in the SSCE. Therefore, it can be concluded that teachers' gender has minimal influence on the academic achievement of students in agricultural entrepreneurial subjects in the SSCE in Niger State.

Hypothesis One

HO₁: There is no significant relationship between teachers' qualification and the academic achievement of students' of agricultural entrepreneurial subjects in SSCE in Niger State

Table 4: Regression Analysis for the Test of Significant Relationship between Teachers' Qualification and Students' Academic Achievement in Agricultural Entrepreneurial Subjects in SSCE in Niger State

Model	Unstandardized coefficient		Standardized coefficient	R square	T	Sig
	B	Std.error	Beta			
Teachers' qualification	.561	.035	.795	.629*	15.978	.000**
Academic achievement	3.666	.113			32.580	.000

Table 4 presents the regression analysis conducted to test the significant relationship between teachers' qualification and students' academic achievement in agricultural entrepreneurial subjects in the SSCE in Niger State. The test revealed a significant criterion as the p-value was 0.000, which is less than the confidence level of 0.05. The results indicate a statistically significant relationship between teachers' qualification and students' academic achievement in agricultural entrepreneurial subjects in the SSCE in Niger State. Therefore, we reject the null hypothesis that there is no significant relationship between teachers' qualification and the academic achievement of students in agricultural entrepreneurial subjects in the SSCE in Niger State.

Additionally, the results showed that the coefficient of determination (R square) was 0.629. This indicates that 62.9% of the variation in students' academic achievement in agricultural entrepreneurial subjects in the SSCE in Niger State can be attributed to teachers' qualification.

Hypothesis Two

HO₂: There is no significant relationship between teaching experience of teachers and the academic achievement of students' of agricultural entrepreneurial subjects in SSCE in Niger State.

Table 5: Regression Analysis for the Test of Significant Relationship between Teaching Experience of Teachers and Students' Academic Achievement in Agricultural Entrepreneurial Subjects in SSCE in Niger State

Model	Unstandardized coefficient		Standardized coefficient	R square	T	Sig
	B	Std.error	Beta			
Teaching experience	.432	.029	.771	.594*	14.773	.000**
Academic achievement	4.014	.099			40.55	.000

Table 5 presents the regression analysis examining the significant relationship between teachers' teaching experience and students' academic achievement in agricultural entrepreneurial subjects in SSCE in Niger State. The test revealed a significant criterion as the p-value was 0.000, which is lower than the confidence level of 0.05. The results indicated a statistically significant relationship between teachers' teaching experience and students' academic achievement in agricultural entrepreneurial subjects in SSCE in Niger State. Therefore, the null hypothesis of no significant relationship between teachers' teaching experience and the academic achievement of students in agricultural entrepreneurial subjects in SSCE in Niger State was rejected. Furthermore, the coefficient of determination (R square) was found to be 0.594, suggesting that 59.4% of the variation in students' academic achievement in agricultural entrepreneurial subjects in SSCE in Niger State can be attributed to teachers' teaching experience.

Hypothesis Three

HO₃: There is no significant relationship between gender of teachers and the academic achievement of students' of agricultural entrepreneurial subjects in SSCE in Niger State.

Table 6: Regression Analysis for the Test of Significant Relationship between Teachers 'Gender and Students' Academic Achievement in Agricultural Entrepreneurial Subject in SSCE in Niger State

Model	Unstandardized coefficient		Standardized coefficient	R square	T	Sig
	B	Std.error	Beta			
Teachers' gender	.156	.104	.121	.015*	1.494	.137**
Academic achievement	5.161	.163			31.744	.000

Table 6 presents the regression analysis for testing the significant relationship between teachers' gender and students' academic achievement in agricultural entrepreneurial subjects in SSCE in Niger State. The test results indicated that there was no significant relationship, as the p-value (.137) exceeded the confidence level of 0.05. Therefore, the null hypothesis stating no significant relationship between teachers' gender and students' academic achievement in agricultural entrepreneurial subjects in SSCE in Niger State was upheld.

Additionally, the analysis revealed that the coefficient of determination (R square) was .015, suggesting that only 01.5% of the variation in students' academic achievement in agricultural entrepreneurial subjects in SSCE in Niger State can be attributed to teachers' gender.

Major Findings of the Study:

The study's data analysis yielded the following findings:

1. There is a positive and high relationship between teachers' qualification and the academic achievement of students studying agricultural entrepreneurial subjects in the Senior Secondary Certificate Examination (SSCE) in Niger State.
2. Teaching experience has a high positive relationship with the academic achievement of students studying agricultural entrepreneurial subjects in the SSCE in Niger State.
3. Teacher's gender has a low positive relationship with the academic achievement of students studying agricultural entrepreneurial subjects in the SSCE in Niger State.
4. There is a significant relationship between teachers' qualification and the academic achievement of students studying agricultural entrepreneurial subjects in the SSCE.
5. There is a significant relationship between teaching experience and the academic achievement of students studying agricultural entrepreneurial subjects in the SSCE.
6. There is no significant relationship between the gender of teachers and the academic achievement of students studying agricultural entrepreneurial subjects in the SSCE.

Discussion of Findings:

The findings indicate a positive relationship between teachers' qualification and the academic achievement of students studying agricultural entrepreneurial subjects in the SSCE in Niger State. This supports previous research by Jega and Julius (2018) and Aslam et al. (2016), which found that students taught by highly qualified teachers achieve better results. Additionally, the positive correlation between teachers' qualification and academic achievement aligns with studies focusing on core sciences like physics (Owolabi & Adedayo, 2012).

The study also reveals a positive relationship between teaching experience and the academic achievement of students studying agricultural entrepreneurial subjects in the SSCE in Niger State. This is consistent with the findings of Yusuf and Dada (2016) and Bamidele and Adekola (2017), who observed improved student performance when taught by experienced teachers. Teaching experience provides teachers with greater exposure to subject matter, better navigation of the curriculum, and enhanced skills in adapting to examination patterns, leading to improved student outcomes.

Regarding teachers' gender, the findings suggest that it does not significantly influence the academic achievement of students studying agricultural entrepreneurial subjects in the SSCE in Niger State. This aligns with studies by Winklemann (2016) and Awodun et al. (2015), which indicate that teacher gender does not have a significant impact on students' academic growth or achievement.

CONCLUSION

The academic achievement of students studying agricultural entrepreneurial subjects in the SSCE is crucial for the economic development of the nation. This study establishes that teachers' qualification and teaching experience significantly influence students' academic achievement in these subjects. Therefore, to enhance students' academic performance, it is important to ensure that teachers possess higher academic qualifications and have substantial teaching experience.

RECOMMENDATIONS

Based on the study's findings, the following recommendations are made:

1. The federal and state ministries of education should prioritize the recruitment of teachers with higher qualifications for teaching agricultural entrepreneurial subjects in senior secondary schools.
2. Teacher exchange programs should be introduced by the federal and state ministries of education to expose secondary school teachers to diverse teaching experiences and broaden their horizons.
3. The federal and state ministries of education should not consider teachers' gender as a criterion for enhancing the academic achievement of students in agricultural entrepreneurial subjects in schools.

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