

# Cultural Background and Academic Performance of Agricultural Science Students in Secondary Schools in Akamkpa Local Government Area of Cross River State

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**Abstract** - The study sought to examine how cultural background influence the academic performance of Agricultural Science students in senior secondary schools in Akamkpa Local Government Area of Cross River State, Nigeria. A survey design was adopted for the study. Two hundred senior secondary two (SS2) Agricultural Science students were drawn by simple random sampling from four government owned schools in the council area. Three objectives and three hypotheses were formulated to guide the study. Data were collected using constructed questionnaire. The instrument was validated by academic experts from the Department of Agricultural Education. A pilot study was conducted and a reliability coefficient of 0.78 was obtained using the Cronbach's alpha method. The data collected were analyzed using the independent t-test of analysis at 0.05 level of significance. Findings of this study revealed that all the factors considered in the study which include cultural belief, gender relation and parental involvement all had impact on student academic performance. It was recommended that teachers should help to relate cultural concepts in Agricultural Science to learners need and experience, government should develop a curriculum for use in integrating cultural concepts in its instruction and that parent's should assist in their background environment to support in teaching their wards at home to reinforce work done in school.

**Keywords:** Cultural background, Academic performance, Agricultural Science, Students.

## 1. Introduction

A person's cultural background refers to the environment and surroundings in which an individual grow up in. It is the collection of influence in a person's life and involves more than just a geographical location. Cultural background constitute many aspect of society such as the ethnic, religious, racial, gender, linguistics, age, tradition or other socio-economic factors and values that shape an individual's upbringing. A cultural background can be shaped at the

family, societal or organizational level. It is an important way to define an individual's identity. Often, people of different cultural background may have to interact with each other. Such interaction may lead to a strong relationship that helps to build diverse communities capable of achieving great goals even in education.

Agricultural science is one of the most important core-subject in vocational sciences which play an important role in the day to day activities of man. It enable learners to understand the world around them. The importance of agricultural science in making the world worth living are too numerous to mention. Agriculture contributes to a nation's economic development, hence, the need to be taught well if it is to meet the educational and economic development of our country.

However, it is disheartening to note that despite agriculture key role to our nation, it is beset by persistent low enrolment in our higher institutions due to mere cultural perceptions that its study revolves round farming of which many parents will not encourage their ward to pursue. It could be perceived that a major cause of low enrolment may be traced to the influence of misconception which students bring to the classroom from their traditional background. Research has revealed that students' explanation of scientific phenomena is controlled by what they perceived from their cultural background [1], [2].

It is opined that learning is known to be culture dependent [3] and equally it has been very difficult to explain most natural occurrence and issues in African life using scientific knowledge; because most of the people belief have been crowded with mythology and superstition [4]. This has resulted to divergent between students daily experience in classroom and the scientific world with most of the students having great difficulties in describing, understanding, interpreting and predicting natural phenomena [5]. According to [6], science educators are now conscious of the need to relate science more closely to the students' cultural

environment in order to minimize the possible conflicts that might arise from their view of the world and that of science. This could be done by carefully considering the traditional point of view that has good relation to scientific concepts. It is argued that construction of new knowledge in a study is strongly influenced by previous knowledge that is gained prior to the new learning [7]. Therefore, since Agricultural Science is a core subject of study in vocational sciences in secondary schools which relate to the environment, there is the likelihood of cultural background having impact in its study and learning. It is then pertinent that Agricultural Science teachers assist their students to use their knowledge in a manner that draw on their cultural background for good learning to be achieved.

### 1.1 Statement of the problem

Poor students' enrolment into agricultural programmes has been blamed on lack of motivational incentives and misconception which students bring to the classroom [8], [9]. Studies have shown that students understanding of scientific phenomena are controlled and influenced by what they perceived from their cultural setting. It is noted that, scientific knowledge and explanation have not been an integral part of Nigerian life, rather the people cultural life are means of providing explanations and reasons for natural occurrences [10].

Agriculture is a very rich profession for a developing nation like Nigeria, but the young ones tend not to see any potential in it. Based on cultural setting, the youths including students in institutions of learning see agricultural practices as inferior, unfulfilling and very difficult to execute. Therefore, there is an urgent need to address this issue and change the negative view of learners toward agriculture and encourage them to embrace it as a vocational study. It is against this background that this study examines the influence of cultural background on the academic performance of agricultural science students in secondary schools in Akamkpa Local Government Area of Cross River State.

### 1.2 Objective of the study

The general objective of the research is to examine the influence of cultural background on the academic performance of Agricultural Science students' in secondary schools in Akamkpa Local Government Area of Cross River State. The specific objectives of the study are to:

- 1) Determine how cultural belief influences the academic performance of Agricultural Science students in secondary schools.
- 2) Examine the extent to which gender relation impact on academic performance in Agricultural Science students in secondary schools.

- 3) Investigate the influence of parental involvement on the academic performance of Agricultural Science students in secondary schools.

### 1.3 Research hypotheses

The following research hypotheses were postulated for the study:

- 1) There is no significant relationship between cultural belief and students' academic performance in Agricultural Science in secondary schools.
- 2) Gender relation has no significant impact on students' academic performance in Agricultural Science in secondary schools.
- 3) Parental involvement has no significant influence on the academic performance of agricultural science students in secondary schools.

## 2. Literature Review

### 2.1 Cultural belief and academic performance

According to [2], personal experience and opinion are related to cultural factors prevalent in the society. This is because cultural situation at home give room for conflicting traditional beliefs and superstition which causes misconceptions that lead to underachievement in the related subject where misconception are held. Studies have found that students cannot learn new concepts if alternative models that give explanation about a phenomenon exist in their mind except a platform is made available to them to comfort their misconceptions, reconstruct and internalize their knowledge [11].

In a study of cultural belief and values on secondary school students understanding of atmospheric related physics concepts [6], showed that there was significant influence on the belief of students in cultural concepts and academic performance in physics because majority of the students performed below average. This is an indication that the misconception held by students has negative influence on their academic performance in physics. [1] opined that learners who have had themselves established on their cultural belief are likely to find the study of science mystifying because of the likely conflict between their cultural view of the world and the mechanistic view presented in science. [4] And [12] also found that the cultural environment in which science is taught significantly affect their learning. This implies that misconceptions from cultural belief brought into physics class by students greatly affect their learning of physics [6]. It is reported that a major cause of underachievement students bring to science classroom has been traced to the influence of misconceptions due to cultural belief from the environment

they grow [13]. Research studies have equally shown that students' explanation of scientific phenomenon is controlled by what they perceived from their cultural beliefs [1], [2].

Cultural context has several components that determine and shape young people's attitude toward science and even their achievement in science. In a study of socio-cultural background of students [4] reported that in African culture, socio-cultural background influence students' attitude towards science because they possess unscientific knowledge that is opposite to their cultural beliefs such as taboos and witchcrafts. The author's concluded that different cultures impact differently upon science and science related careers like medicine, forensic science and agriculture.

### 2.1 Gender relation and academic performance

The influence of gender on learning and achievement has remained a tropical issue amongst educationist and psychologist. Nigeria like other nations of the world, gender issues abound in all spheres of the society. In various parts of our nation, the cultural setting cultural and traditional responsibilities of men and women vary and this has effect in the upbringing of boys and girls.

Considering gender roles in an African society it has been observed that cultural provision for male students make them fit and able to cope with task requiring high intellectual challenges, computation and rigor. This phenomenon is further compounded where sex-roles is so pervasive that from birth, society fixes gender tasks and condition males to play and act within the confines of intellectually and physically challenging jobs like construction, agriculture and fishing. Women on the other hand are confined to the kitchen and related domestic chores [15]. Traditionally, females are seen as less intelligent in activities that involve muscular exertion. In a study of gender difference in Agricultural Education Students in Agricultural Education courses, it was reported that male students were superior in tasking activities where masculinity was expressed while female students excel more better in theoretical courses [16], [17]. Gender bias equally promulgates a myth within subject areas. For instance, in subjects like mathematics, science and technology there are difference participation pattern for girls and boys. Girls who succeed in these subject areas highlighted are said to be due to hard work, not their intelligence whereas boys' success is credited to their natural talent [18].

Parents have different attitude towards their sons and daughters in many African cultures. Daughters are brought up for female roles such as child bearing while sons have a whole working life to career building. Parents believe that females do not have qualities of independence, initiative and assertiveness [19]. As a result few efforts and resources are spent on girl's

education as they are expected to be married to husbands who will speak for them.

### 2.2 Parental involvement and academic performance

A parents' background environment in a child's education can affect the child's attitude towards school, classroom conduct, self-esteem, absenteeism and motivation. According to [20], parents background interest in and support of their children in school help to reinforce their sense of belonging to the school and identification with teachers and other personnel. It is equally observed that when parents initiates contact with their children's school, it help to strengthen identification with their teachers [21].

In examining the interaction among parental involvement, teachers support and students' sense of belonging to school, students whose parents environment enable them to be involved and interested in their school activities are better able to take advantage of the benefits of supportive teacher or school environment for their academic performance [22]. The authors' added, parental involvement not only enhances academic performance but it also has a positive influence in students' attitude and behavior.

Studies have shown that children who are deeply involved with their families tend to "persistently ask questions to continually observe and participate in the nature activities of their communities". That is, such students adopt strategies like looking, reading and manipulating to repeatedly explore and exhibits which help them increase their performance in class [23].

## 3. Methodology

The research design adopted for this study is the survey research design which is also descriptive in nature. The design was considered appropriate because it sought to obtain information that discloses existing phenomena by asking respondents about perceptions, attitude and belief on the subject matter to be investigated.

The area of the study is Akamkpa Local Government in Cross River State, Nigeria. The area is located in the Southern Senatorial District of the State and lies within Latitude 4025' and 6055' North of the Equator and Longitude 7050' and 9028' East of the Greenwich Meridian, with a geographical landmass of 4,930.04Km<sup>2</sup> and a population of 151,125 residence as at 2006 National Census [24]. There are many public and private secondary schools and a tertiary institution in the area but this study is concerned only with the public owned secondary schools.

The study population consists of students studying agricultural science in Senior Secondary Two (SS2) in all the public owned schools in the council area. The selection of this level of students for the study was based on the fact they would respond to the instrument to be administered correctly.

Simple random sampling was used to select the schools and the sample size. Four schools were randomly chosen and in each school, fifty (50) students of both sexes were selected making a total of 200 students. The questionnaire consisting of two parts A and B was used to obtain information from the respondents. Section A; sought information on biographical data of respondent, while section B consisting of 15 items was designed to examine respondents knowledge on cultural background issues. All the items had a four point response option of Strongly Agree (SA4), Agree (A3), Strongly Disagree (SD2) and Disagree (D1).

The instruments were validated (content and face validity) by two experts in the field of Agricultural Education of the College, and was field tested in two Senior Secondary Two Schools not chosen for the study. A reliability of the instruments was ascertained through Cronbach’s Alpha and a Coefficient of 0.78 was obtained.

Copies of the questionnaire were distributed by the researchers and with the school subject teacher assistants to a sample of 200 students in four schools. Researchers’ presence during administration in each of the schools enhances better understudying of the items in the instrument. Copies of the questionnaire were retrieved immediately after completion by the researchers. Data generated were used to examine the null hypotheses formulated at 0.05 level of significance using t-test statistics.

#### 4. Results and Discussion

##### 4.1 Results

##### Test of hypotheses

**Hypothesis I:** There is no significant relationship between cultural belief and students’ academic performance in Agricultural Science in Secondary Schools. The result is presented in Table 1.

**Table 1: Independent t-test analysis of the influence of cultural belief on academic performance**

Cultural belief	N	Mean (Academic performance)	SD	DF	t-cal.	t-crit.	Decision
Cultural belief of boys	100	11.58	2.24	198	21.8	1.97	Significant
Cultural belief of girls	100	5.14	1.94				

N = Number of respondents, SD = Standard deviation, DF = Degree of freedom, P<0.05

From Table 1 revealed that the calculated t-value of 21.8 is greater than the critical t-value of 1.97 at 0.05 alpha significant levels and 198 degrees of freedom. Therefore, the null hypothesis is rejected, meaning that there are differences in the opinion of Agricultural Science students on the influence of cultural belief in their academic performance. Specifically, the result showed that male students are more influence ( $\bar{x}$ =11.58) by their cultural belief than their female counterparts ( $\bar{x}$  =5.14).

**Hypothesis 2:** Gender relation has no significant impact on the academic performance of agricultural science students. The result is presented in Table 2.

**Table 2: Independent t-test analysis of the influence of gender relation on students’ academic performance**

Gender relation	N	Mean (Academic performance)	SD	DF	t-cal.	t-crit.	Decision
Male	100	8.40	2.82	198	3.16	1.97	Significant
Female	100	7.22	2.46				

N = Number of respondents, SD = Standard deviation, DF = Degree of freedom, P<0.05

The result in Table 2 showed that the calculated t-value of 3.16 was found to be greater than the critical t-value of 1.97 at 198 degrees of freedom and 0.05 Alpha significant levels. With this result, the null hypothesis is rejected. It therefore means there exist a significant influence of cultural gender relation on the academic performance of Agricultural Science students. Specifically, the result showed that based on cultural gender, male students perform better ( $\bar{x}$  =8.40) than those of the female students ( $\bar{x}$  =7.22).

**Hypothesis 3:** Parental involvement has no significant influence on the academic performance of agricultural science students. The result is presented on Table 3.

**Table 2: Independent t-test analysis of the influence of parental involvement on students’ academic performance**

Parental involvement	N	Mean (Academic performance)	SD	DF	t-cal.	t-crit.	Decision
Parents participation	112	8.41	2.29	198	7.33	1.97	Significant
Non-parents participation	82	6.04	2.22				

N = Number of respondents, SD = Standard deviation, DF= Degree of freedom, P<0.05

The result in Table 3 showed that the calculated t-value of 7.33 was found to be greater than the critical t-value of 1.97 at 198 degrees of freedom and 0.05 Alpha significant levels. With this result, the null hypothesis is rejected. It therefore reveals that there exists a significant influence of cultural background when parents are involved in the academic activities of their children in schools. Specifically, the result showed that students from schools whose parents participate in their school activities perform better ( $\bar{x}$  = 8.41) than those

whose parents does not participate in their school affairs ( $\bar{x} = 6.04$ ).

#### 4.2 Discussion of findings

The findings in research hypothesis one showed that cultural belief significantly influence the academic performance of agricultural science students. Specifically, the result showed that male students are better in their cultural belief ( $\bar{x} = 11.58$ ) than their female counterparts ( $\bar{x} = 5.14$ ). This result is in line with findings obtained by [1], [2], who in their research reported that students explanation of scientific phenomenon are controlled by what they perceived from their cultural beliefs. The finding is also in agreement with the findings of [14] who investigated the correlate of the socio-cultural background of Botswana Junior Secondary School Students and their attitude toward achievement in science. The result showed that different cultures impart differently on the learner depending on the course of study. The finding is in contrary to the study by [10] who investigated the influence of cultural practice-related beliefs on achievement among biology students in Benue State Zone C, Nigeria. The result revealed that there was a great difference between mean achievement scores of male and female students in favour of the female students.

The findings of research hypothesis two of this study showed that there exist a significant relationship of cultural gender relation and academic performance of Agricultural Science students. Specifically, the result showed that based on gender, male students perform better ( $\bar{x} = 8.40$ ) than the female students ( $\bar{x} = 7.22$ ). The result of this study is in corroboration with the findings obtained by [25] and [18] who opined that cultural background on gender bias influence the academic performance of agricultural science students. The authors upheld that male students have positive attitude and higher efficiency in science and practical related course like agricultural science which help them to perform better than their female counterpart. The study is also in agreement with [26], [27] and [19] who asserted that in most African societies, family development efforts including schooling are invested more on boys than the girl child because families hoped that boys will achieve in the world of technology whereas girls position will end them at home to maintain family livelihood. These assertion held within learners traditional background often lead to variation in academic achievement between boys and girls.

The result of hypothesis three of this study revealed that when parents in their background environment are involved in learners school activities, it significantly influence their academic performance. Specifically, the result showed that students whose parents are involved in their school work

perform better ( $\bar{x} = 8.41$ ) than those whose parents are less involved ( $\bar{x} = 6.04$ ). This result is consistent with [20], [21], [22] and [28] that parents' involvement in a child learning programme has been found to have positive impact on their learning performance and adjustment in school. The study equally is in consonant with [29] who opined that academic performance is positively related to having parents who enforces rules at home. By this, it means parents' involvement in learners' cultural environment improves their educational output through daily school attendance, motivation and achievement.

#### 5. Conclusion and Recommendation

Based on the findings obtained from the test hypotheses that guided the investigation, the following conclusions were made. The cultural belief and gender relation of the learner exert great influence on their academic performance in school. That is in African societies, sex roles are so pervasive that from birth, society impact belief system and forces gender tasks and condition male to act within the confines of intellectually and physically challenging tasks while their female counterparts are saddle with less challenging domestic chores. On the issue of parents' involvement in their wards learning outcome, the study showed parents who are engaged in their children school activities help to influence their attitude and behavior towards academic issues in school.

Based on the findings of the study, the researchers recommends as follows:

- 1) Identified cultural beliefs and related misconceptions should be used by authors of agricultural science to illustrate some concepts as to sufficiently explain them and greatly advance learning in our school system.
- 2) Teachers should help to relate concepts in agricultural science to learners' needs, experience and surrounding environment.
- 3) Government should developed an enrich curriculum integrating cultural concepts in the instruction.
- 4) There is need for public enlightenment and sensitization of the importance of agriculture in order to induce positive view on parents to encourage their wards, male or female to choose agricultural science as a discipline.
- 5) Irrespective of one's background environment, parents should support the study of their children in such a way as monitoring their progress and communicating with them at home to reinforce work done in school.

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