# Characteristics of students taking agricultural science in Ondo State secondary schools and their participation in agricultural education activities

A. ADEGBOYEGA JIBOWO

*Department of Extension Education and Rural Sociology, University of Ife, Ile-Ife.*

## Abstract

To determine the relationships between some personal, social and economic characteristics of students and their participation in Agricultural Education, responses were obtained from 271 students taking Agricultural Science as a subject in 20 Secondary Grammar Schools which were selected from the 17 Local Government Areas of Ondo State between September and December, 1977.

Analysis of data showed statistically significant relationships between age, attitudes towards agriculture as a profession, rural or urban background, participation in social organisations, father's possession of farms and participation. No statistically significant relationship was found between sex, father's education, father's income, farming or non-farming occupation and participation in Agricultural Education. Awareness of these categories of factors could assist teachers of Agricultural Science in encouraging increased student participation in the subject and in selecting students who could take it and be expected to perform well.

## Introduction

Agricultural Education is taught in Nigerian Secondary Grammar Schools as Agricultural Science. The introduction of this subject into the curricula of these schools took place less than a decade ago. After that, its teaching was limited to forms three to five. For example, in Oyo State 59 schools taught the subject from forms three to five during the 1975/76 session (Martins, 1977). With the introduction of "Operation Feed the Nation" (OFN) programme, which aimed at increasing food production in the country in April, 1976 by the Federal Government, teaching of agriculture in all Nigerian Secondary Grammar Schools became a national policy. A greater number of the schools than hitherto started to teach the subject and even extended its teaching to all the school classes

Participation in an educational programme such as Agricultural Education could be determined quantitatively, through the activities in which the students were engaged. Johnstone (1963) determined the educational participation of American adults through their involvement in lecture series, discussion groups, private lessons, and similar activities. There is an obvious paucity of data in Nigeria on determining the participation of students in Agricultural Education. This attempt therefore based participation on the various activities in which the students were engaged in a variety of learning situations in Agricultural Education. The variables included were attendance at theory classes, treatment of laboratory topics, performance of field operations, use of

leisure for agriculture-related activities, submission of assignments, participation in tests and holding group discussions on the subject.

The use of the above variables is theoretically justifiable based on the elements of the teaching-learning situation. Klausmeier and Goodwin (1966) identified seven main groups of variables which affect efficiency of learning in a group setting. They were (i) physical characteristics of facilities such as space and teaching materials; (ii) the subject matter such as its meaningfulness; (iii) factors affecting the students such as their homes; and (iv) those affecting the entire setting such as school administrative concerns and community support; (v) the teacher characteristics such as knowledge, skill and attitude; (vi) the learner and teacher behaviour as shown in their interactions, teaching methods and learning process; (vii) finally, the learner characteristics such as cognitive, affective and psychomotor abilities which are the knowledge, feeling and skill characteristics, respectively. The learner's health, age, and sex are also important characteristics which influence efficiency of learning.

Apart from a number of the factors discussed above, some other characteristics of the students which could influence how efficiently they learn the subject are their rural or urban background, participation in social organisations, and some characteristics of the parents such as occupation, income, possession of farms, and other factors.

In addition to determining the magnitude of participation, this study also examined the relationships between some personal, social and economic characteristics of the students and participation. As there was no previous empirical justification for setting a directional hypothesis, it was postulated that there was no relationship between student participation in Agricultural Education and each of their personal, social and economic characteristics previously identified. Through an understanding of these relationships it might be possible to enhance and predict participation in and efficiency of learning Agricultural Science among Secondary School students.

**Methodology**

Students and school records, unstructured interview with Agricultural Science teachers, and structured interviews with students constituted the sources of data. These were collected between September and December, 1977 from 271 students of Agricultural Education randomly selected from 20 Secndary Grammar Schools in Ondo State. The schools were chosen from a list of 200 schools in the State, which was obtained from the Chief Education Officer. At least, one school from each of the 17 Local Government Areas of the State was included in the study. A minimum of two students offering agricultural science were interviewed in each of classes one to five. This sample of 271 students constituted 3 percent of the total population. However, the sample was representative enough to make the findings useful.

Participation score was derived from each respondent by adding the scores of the several indices used to measure the variable. These

(96.9%), ridging (95.2%), fertilizing (80.4%), spraying with insecticides (40.6%) and mulching (8.5%). Most respondents held two theory classes per week. Of the 19 topics listed in the West African Examinations' Council's syllabus to be covered during the laboratory practical classes, 55.4% covered "recognition of common hand tools", while 51.3% covered "use of common hand tools". Majority of the students did not indicate covering the remaining topics.

The majority of the students (52.8%) were 14-16 years old; the mean age was 16. Most of the students (88.1%) were of Ondo State origin. Also, the majority (74.9%) were males, while 25.1% were females. While 17.3% grew up in villages, 82.7% grew up in towns. Most of them (93%) had positive attitudes towards agriculture as a profession. They scored 46-75 out of a maximum score of 75, and a minimum of 15. Most of them (84.1%) would like to undergo further training in Agricultural Schools if admitted after graduating from their high schools. About 25% scored 4-6 in organisation participation, while about 15% scored 10 and above: Less than half of them (42.7%) scored 1-3. The mean social participation score was 5.17, the standard deviation was 3.58. Majority of the students (66.4%) had represented their schools in various activities such as games and debate. Many students (62%) held no appointed post in their schools, while 38% held posts such as prefects, club chairmen, and secretaries. Majority of the students (53.1%) were sponsored at school by their fathers; 31% by their fathers and mothers; 8.5% by mothers only, while the rest (7.4%) by other relations such as the extended family.

The mean years of schooling of their fathers was 3.76, while 60.50% had no formal schooling. The mean income of fathers was N2,260.93, while majority of them (69.5%) earned over N2,000 per annum. Most students (69.4%) indicated that the main occupation of their fathers was farming, while a larger percentage (81.2%) stated that their fathers possessed farms. The mean size of farms was 2.98 hectare.

## Correlations between student's and father's characteristics and participation in Agricultural Education.

The data in Table 1 show that the more favourable the attitude of students towards agriculture as a profession, the greater their participation in agricultural education. The correlation co-efficient, r of 0.266 showed a significant relationship between the two variables.

TABLE 1: CORRELATIONS BETWEEN SOME CHARACTERISTICS OF STUDENTS, THEIR PARENTS AND PARTICIPATION IN AGRICULTURAL EDUCATION

| *Characteristics* | *Correlation co-efficient,* | *Decision* |
|---|---|---|
| Attitude towards agriculture as a profession | 0.266 | Supported |
| Age | 0.248 | Supported |
| Organisational participation | 0.284 | Supported |
| Father's income | 0.010 | Not supported |
| Father's years of schooling | 0.044 | Not supported |

The r value of 0.248 between age and participation was also significant. This shows that the older the respondents, the greater their participation in the subject activities. Similarly, the r value of 0.284 between participation in social organisations and in the subject was significant, showing that the greater the degree of organisational participation among the students the greater their participation in the subject. However, no significant association was found between each of father's income (r = 0.010), father's education (r = 0.044) and participation in Agricultural Education.

Background, sex, father's occupation, father's possession of farms and participation in Agricultural Education

The data in Table 2 show that there was a significant relationship between background of student and participation. The chi-square value of 7.29 which was significant at 0.05 level supported this claim. Detailed analysis showed that a high percentage of students with rural back-

TABLE 2: SUMMARY OF THE RESULTS OF RELATING BACKGROUND OF STUDENT, SEX, FATHER'S OCCUPATION AND POSSESSION OF FARMS TO STUDENT PARTICIPATION IN AGRICULTURAL EDUCATION

| *Characteristics* | *Chi-square value* | *Degree of freedom* | *Decision* |
|---|---|---|---|
| Background of student | 7.29 | 2 | Significant at 0.05 level |
| Sex | 2.19 | 3 | Not significant at 0.05 level |
| Father's possession of farms | 15.28 | 2 | Significant at 0.001 level |
| Father's occupation | 1.9 | 2 | Not significant at 0.05 level. |

Similarly a significant relationship was found between possession of farms by fathers of students and participation. The chi-square value of 15.28 which was significant at 0.001 level supported this decision. A higher percentage (18.18%) of students whose fathers possessed farms than those whose fathers did not (3.92%), had high participation scores. However, most of the students whose fathers possessed farms (68.64%) and those whose fathers did not (66.67%), were medium participants, scoring 14-36.

No significant relationship was found between father's occupation and participation. A chi-square value of 1.9 which was not significant at 0.05 level justified this decision. Therefore fathers' major occupation was not a discriminating factor in participation. Detailed analysis showed that 17.55% and 10.84% of farmers' and non-farmers' children respectively, were high participants; while 67.02% and 71.08% respectively, were medium participants in Agricultural Education.

In addition, no significant relationship was found between sex and participation. The chi-square value of 2.19 which was not statistically

significant at 0.05 level justified this claim. Detailed analysis showed that the highest concentration of males (41.87%) and females (48.53%) were in the medium participation group, scoring 18-30.

**Discussion**

There was adequate participation in Agricultural Education activities among the students who took Agricultural Science in Ondo State Secondary Grammar Schools. Total participation magnitude was considerable among many students. In addition, many of them took part considerably well in the specific activities used as measures of participation. They did many assignments from their homes on the subject, took many tests in their classes, held group discussions on Agricultural Science topics and studied the theoretical aspects of the subject in their class-rooms. They carried out planting, weeding, harvesting, ridging, fertilizing, spraying crops with insecticides and mulching on their school farms. However, most of them did not engage themselves actively in activities related to the subject during their leisures. Similarly, many of them were not involved in laboratory practical sessions on the subject. This latter finding is similar to the situation which existed in Oyo State Secondary Grammar Schools (Martins, 1977).

While the significant associations between age, attitude towards agriculture as a profession and participation imply that maturity and favourable dispositions are important factors determining student participation in the subject, participation in social organisations is also as important as in many other forms of socio-economic activities. The degrees of making effective responses to training and furthering the attainment of Agricultural Education goals are likely to increase with higher degrees of organisational participation.

The significant relationship between background of students and participation implied that students who grew up in rural areas might have had early exposures to farming, and hence employed such an advantage to participate more in Agricultural Education than those who grew up in urban areas. The significant association between possession of farms by father and participation could mean that the early farming experiences of those with rural background were obtained mainly on their fathers' farms. This variable could also be used to predict potential participation of aspiring students in Agricultural Science. That is, students whose fathers possessed farms could be expected to participate more in the subject than those whose fathers did not. However, experience has shown that some students who did not possess these characteristics still performed well in the subject. These might be regarded as exceptional cases.

Contrary to expectation, there was a lack of significant relationship between father's occupation and participation, because it was reasonable to expect students whose fathers were farmers to participate more than those whose fathers engaged in other major occupations. As comparable percentages of both student categories had similar participation magnitudes, the early farm experiences of students might

have been gained on farms of fathers whose main occupation was not necessarily farming. Some might have gained experiences from part-time farmers also.

The lack of significant relationship between sex and participation showed that males as well as their female counterparts had similar participation magnitudes.

Lack of significant relationship between father's education and student participation indicated that the former is not a determining factor of the latter. This was expected in a state where majority of the students' parents had no formal schooling. Absence of significant relationship between father's incomes and participation indicated that students whose fathers were well-to-do financially and those whose fathers were not, had similar participation magnitudes. This might be because most of the fathers were fairly well-to-do financially. In fact this is an encouraging finding because those whose fathers were not rich could enhance the financial positions of their families if they develop their appreciable participation in the occupation in youth to becoming successful career and scientific agriculturists, later in life.

**Conclusions**

1. With the appreciable participation magnitude of Agricultural Education and favourable dispositions of students towards agriculture as a profession revealed in this study, the future of agricultural development in the State looks bright if some of these students are encouraged to engage in professional and scientific agriculture.
2. As student participation in laboratory practical work was negligible, their learning efficiency could well be enhanced if this aspect of the teaching-learning situation is given greater emphasis by the teachers and the students than hitherto has been the case.
3 As student characteristics such as age, attitude towards agriculture as a profession and organisational participation, were significantly and positively correlated with participation in Agricultural Education, while others such as sex, father's education and father's income were not, these findings could be useful in designing and implementing high school programmes for improving the teaching of Agricultural Science. Mature students with good dispositions towards agriculture as a profession and who took part actively in social organisations, having farm background and whose fathers have farms would be expected to perform well at school in activities related to agriculture, regardless of their fathers' education, incomes, occupations and sex of the students. In addition, teachers of Agricultural Science could be patient with young students and make additional efforts to encourage them; encourage the students to develop positive attitude towards the occupation, for example, by constantly stressing its importance and giving them satisfying learning experiences. They could also improve participation by encouraging their students to take part in social and professional organisations such as the Young Farmers' Club. The practice of giving both males and females equal chances of involvement in Agricultural Education activities in Secondary Schools should be continued as both sexes had similar participation magnitudes.

4. Future studies could focus on other elements of the teaching-learning situation which have not been included in this study. Some of these are the characteristics of the teacher, characteristics of physical facilities such as space and other teaching materials, and the teaching methods employed. Examining these dimensions should present a broader perspective of how these factors influence student participation in Agricultural Education.

## References


Abiri, J. O. 1976. "Nigerian Student-Teachers' Attitudes to teaching as a career". *Nig. J. Psych.* 1:1, 20-29.

Guilford, S. P. 1956. *Fundamental Statistics in Psychology and Education,* New York: McGraw Hill Book Company, p.145.

Johnstone, W. C. 1963. "Volunteers for Learning: A Study of the Educational Pursuits of American Adults". National Opinion Research Center, University of Chicago, p. 8.

Klausmeier, H. J. and Goodwin, W. 1966. *Learning and Human Abilities: Educational Psychology,* Second Edition. Harper and Row, Publishers, New York and London, p. 2-10.

Martins, A. O. 1977. "A Study of the Teaching-Learning Situation in Relation to Agricultural Science in Oyo State". B.Sc. Agric. (Hons.) dissertation, Faculty of Agriculture, University of Ife, Ile-Ife, p. 27.