

Gender Differences in Academic Performance of Agricultural Education Students in Agricultural Education Courses

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Abstract: The study examined differences in performance of male and female agricultural education students in the Federal College of Education (Technical), Omoku, Nigeria. Data for the study was obtained from 40 students in the department of agricultural education. It was found that there was no significant difference in the performance of female and male students in the department of agricultural education.

Key words: Gender differences, performance, agricultural education

INTRODUCTION

Performance is an individual endeavour and varies from person to person. According to Naylor (1972) there are real and pervasive differences between people in addition to differences in ability. The issue of differential participation of the sexes in academic endeavour however, is a long debated one (Naylor, 1972). Traditionally, females were seen as less intelligent in mostly muscular activities. The females were seen to be less active in masculine endeavour. Sex (gender) differences were found to exist in academic endeavours but the results if such studies vary from one field of study to another. In the applied sciences where agriculture fits it, there may also be a different result. In view of the myriad of findings about differential participation of genders in academics, this study examines the relationship between gender differences and performance of students in the Department of Agricultural Education of Federal College of Education (Technical), Omoku, Nigeria. Specifically the study determines the level of performance between male and female students involved in the study; determines whether significant differences exist between performance of male and female students; determines whether significant difference exists between performance of male and female students in education courses.

MATERIALS AND METHODS

The population for this study was 66 NCE students of the 1991/92 set in the Department of Agricultural Education in Federal College of Education (Technical),

Omoku. During the 1991/92 academic sessions, scores for 66 students were available. In the 1993/94 session scores for 48 students were available. For consistency, scores for 40 students (20 males and 20 females) were used for the study. The data for this study were got from both primary and secondary sources. The primary data comprise students performances in courses offered in the department of Agricultural education and some offered outside the department (that is, courses in education). The secondary data on the other hand were obtained from available literature. Students' raw scores relating to courses offered in agricultural education department and some courses offered from school of education were used for the study. Four courses were chosen from NCE I viz. (GSE 101; Languages and Communication, ED 112; Child Development AGE 116; Introduction to soil science and AGE 117; Practical Agriculture. This consist of two courses in education (GES 101 and ED 112) and two courses in Agricultural science (AGE 116 and AGE 117). Also, four courses were chosen for the same group of students when they were in part II (NCE II). Two courses in Education (ED 211 and ED 223) were used and two in Agricultural Science (AGE 216 and AGE 226) were used. In the same vein, four courses were chosen for the group of students when they were in part III (NCE III). Two courses in Education (ED 311 and ED 313) were used and two in Agricultural Science (AGE 317 and AGE 322) were used.

In all 12 courses were used for the study. The list of students was got from the Department of Agricultural Education. The list of those students who were admitted into the department in the 1991/92 session was used because it was the only set that had a complete three-year

record of performance. In the first year, that is, when the students were in NCE I there were 66 students. In the next session (1992/93), there were 54 students and in the final year (1993/94 session) there were 48 students. For consistency, the researcher decided to use the scores of 40 students only. In NCE III there were 20 female students and 28 male students. The 48 students on the NCE III list were grouped into males and females and their previous performances in NCE I and NCE I were used for the research. So the researcher used scores for only students who started the course in the 199/92 session and ended in the 1993/94 session. Hence the sample size for this study was 40 students of the Department of Agricultural Education.

Data were analyzed using arithmetic mean and T-test. The means were used to determine the level of performance for both genders for the three academic sessions under investigation. The T-test was used to test whether a significant difference existed in the performance of both genders. It was determined at the 5% level of significance, with 38 degrees of freedom and a critical T-value of 2.042.

RESULTS AND DISCUSSION

The data in Table 1 shows the mean scores in each of the course. The table shows that each gender has a low pass in AGE 116. Introduction to soil science (low pass is a mean ranging from 40 to 49) both genders have moderate pass in ED 112: Child development (that is mean score ranging form 50 to 59). Also, both genders have high pass in AGE 117: Practical Agriculture. Though performance in GSE 101 was poor the female students in NCE I performed relatively better compared to the male students. This is in line with Erinoshos’s (1994) assertion, but in ED 112 male students performed relatively better than female students. The course is an applied science so the performance of male student being better compared to that of female students in the course conform with pervious studies of Orheruata (1990). It can be said however, that though performance of NCE I students in education is low/moderate, male students performed just as well as female students. In courses in Agricultural science, male students performed relatively higher

Table 1: Gender mean scores in four courses in NCEI

Courses	Gender	N	Total score	Mean score
GSE 101	Male	20	970	48.50
	Female	20	978	48.90
ED112	Male	20	1027	51.35
	Female	20	1016	50.80
AGE 116	Male	20	911	45.55
	Female	20	936	46.80
AGE 177	Male	20	1502	75.10
	Female	20	14.80	74.00

Table 2: Mean scores in four courses in NCE II

Courses	Gender	N	Total score	Mean score
Ed211	Male	20	1136	56.80
	Female	20	1132	56.60
ED223	Male	20	1024	51.20
	Female	20	882	44.10
AGE 216	Male	20	1268	63.40
	Female	20	1230	61.50
AGE 226	Male	20	1101	55.05
	Female	20	11005	50.25

than females. This agrees with previous studies (Orheruata, 1990; Ikeotuonye, 1986) that noted males as being superior in tasky activities where masculinity is expressed. The course AGE117 (Practical Agriculture) involves physical exertion/manual labour and it is expected that males should perform better than females. But the performance of the female student is also encouraging since it shows that they have scores in proximity with those of the male counterparts. In AGE116 (Introduction to soil science) female students performed relatively well compared to male students. This is in contrast with student by Ogunlade (1973) and Okunrotifa (1976) who found superior performance in favour of males. It can therefore be inferred that female students of Agricultural Education Department performed just as well as male students of the same department in courses in Agricultural science in NCE I.

The data in Table 2 shows that male students performed slightly better than female students in ED 211: Philosophy of Education. Also male students performed moderately better than female students in ED 223: Measurement and Evaluation. A reason for males having a better score could be the stereotypic belief that males perform better in Mathematics-related abilities, than females. Studies by Ikeotuonye (1986) and Erinoshos (1994) confirm this.

In AGE 216: Practical Agricultural, male students performed better than female students, though relatively. This may be because it is generally believed that males perform better in activities involving muscular exertion. Also in AGE 226: Farm Management, male students performed better than female students. This is not too surprising because the course contains a reasonable amount of mathematics-related topics. It can be concluded that male students performed better than female students in Agricultural science courses.

On a general note, male students in NCE II performed better (relatively) than female students in both courses in Education and courses in Agricultural science.

From Table 3 it can be seen that male students performed better in EDU 311: Comparative Education) than female students. Also male students performed better than female students in ED 313: Guidance and

Table 3: Mean scores in four courses in NCE III

Courses	Gender	N	Total score	Mean score
EDU 311	Male	20	1166	58.30
	Female	20	1129	56.45
ED313	Male	20	1115	55.75
	Female	20	1065	53.25
AGE 317	Male	20	1174	58.70
	Female	20	1182	59.10
AGE 322C	Male	20	1147	57.35
	Female	20	1140	57.00

Table 4: T-test results NCE I

Courses	Gender	N	Mean score	Std. dev.	T-value
GSE 101	Male	20	48.50	15.40	-0.09
	Female	20	48.90	12.31	NS
ED112	Male	20	51.35	12.15	0.14
	Female	20	50.80	13.57	NS
AGE 116	Male	20	45.55	14.93	-0.31
	Female	20	46.80	9.99	NS
AGE 177	Male	20	75.10	18.71	0.25
	Female	20	74.00	5.20	NS

Counselling. It can be said that male students of the Agricultural Education department performed better than female students in Education courses (EDU 311 and ED 313) at the NCE III level. However, female students performed better in AGE 317. Land survey and Farm Planning, than male students. Male students performed better, than female students in AGE 322C: Crop Products Technology, although performance of male students was relatively better than that of female students. It can be inferred therefore that male and female students in NCE III Agricultural Education department performed moderately well.

From Table 4 it can be seen that there is no significant difference between performance of male students and that of female students in courses in Education and courses in Agricultural science in NCE I. Since the calculated T-value is less than the tabulated (critical) T-value of 2.042 male students' performance is just as well as female students' performance in courses in Education and courses in Agricultural science in NCE I.

From Table 5, it can be seen that there is no significant difference between performance of male students and that of female students in courses in Education (ED 211) and in course in Agricultural Education (AGE 216 and AGE 226) in NCE II. Since the calculated T-value it can therefore be concluded that male students' performance is just as well as female students' performance in courses in Education and courses in Agricultural science in NCE II. Apart from ED 223 in which female students' performance was relatively poor, the general performance was moderately good.

From Table 6, it can be seen that there is no significant difference in the performance of male students and the performance of female students in course of Education (EDU 331 and ED 313) and in NCE III. Since the

Table 5: T-test results NCE II

Courses	Gender	N	Mean score	Std. dev.	T-value
GSE 101	Male	20	56.80	11.54	0.04
	Female	20	56.60	13.89	NS
ED112	Male	20	51.20	11.09	2.03
	Female	20	44.10	11.07	NS
AGE 116	Male	20	63.40	10.40	0.69
	Female	20	61.50	6.42	NS
AGE 177	Male	20	55.05	7.34	2.03
	Female	20	50.25	7.63	NS

Table 6: T-test results NCE III

Courses	Gender	N	Mean score	Std. dev.	T-value
EDU 311	Male	20	58.30	9.81	0.70
	Female	20	56.45	6.55	NS
ED313	Male	20	55.75	9.75	0.88
	Female	20	53.25	8.15	NS
AGE 317	Male	20	58.70	8.39	-0.16
	Female	20	59.10	6.95	NS
AGE 322C	Male	20	57.35	7.55	0.16
	Female	20	57.00	5.93	NS

calculated (obtained) T-values are less than the critical T-value of 2.042, it can therefore be inferred that male students' performance is just as well as female performance in course in Education and courses in Agricultural science in NCE III. There was moderate performance in all cases.

DISCUSSION

Mean scores for both genders were moderate in both courses in education and agricultural sciences. This confirms a previous study by Ihiegbulem (1992). It could be that the students were exposed and taught by their teachers under similar conditions, as was noted by Enene (1993). But looking at the mean scores closely, reveals a superior performance in favour of male students in nine out of the twelve courses used for the study, even though the superior performance involved only a slight difference. Orheruata (1990) stated that moderate passes in the performance of male and female students may have been due to female expectation which limits their intellectual interest and ambition in area that requires masculine activities.

Females performed relatively better in GSE 101 (Language and Communication) than males. It has been a laid down trait and there has ever been that belief that females perform well in the arts courses like language, communication, French and so on. Ikeotuonye (1986) had found in a study of abilities of boys and girls that girls performed well in courses related to verbal and abstract reasoning. Also, in AGE 116 (Introduction to Soil Science), females performed relatively better than males. This could also be linked to a fact that the females put in more efforts to overcome the inferior image ascribed with them as being less capable of performing well in

masculine tasks. The superiority in favour of females show a challenging role being played by the females. This could be related to FAO's (1981) study as quoted by Orheruata (1990) that women were responsible for at least 50% of all food production. This could also be related to Mead cited in Archer that sex roles in New Guinea tribes showed females as being the dominant partner and managers of business.

In ED 223 (Measurement and Evaluation) males performed better than females. This reinforces the stereotypic image of males being superior of tasks involving calculations. ED 223 involves considerable calculation related topics. Males have therefore made the assertions by previous authors about their (male) performance being superior to that of females. Orheruata (1990), Onibokun (1980) and Ikeotunonye (1986) have all found this to be true in their different studies. The same explanation holds for AGE 226 (Farm Management) which involves some mathematical operations.

On the other hand, females performed better than males in AGE 317 (Land Survey and Farm Planning). This could be seen in the light of the traditional belief that females are good planners. If females continue to be better planners they could be in a better position to assist their male counterparts by giving them useful advice to help boost development. But surprisingly, males performed better in ED 313 (Guidance and Counselling). It would have been the place of females to perform better in this area that involves giving assistance, help and advice. But Guidance and Counselling also involves giving direction. It could be said that the males still have considerable superiority in terms of guiding or directing their female counterparts in problem-solving endeavours. A reasonable level of performance was found in AGE 322C (Crops Products Technology). Female performance can be said to be encouraging. Since females had superior performance in AGE 317. It could be that they applied their knowledge of planning to crop products technology to perform almost as well as male students. The t-test result shows that there is no significant difference in the performance of males and females in agricultural education.

CONCLUSION

Male and female students performed moderately in both agricultural courses and education courses and there was no significant difference in the performance of males and females. It is impressive that females are living up to expectations as the gender disparity that has bedeviled the system for a long time seem to be closing up. More awareness programmes for females is hereby encouraged.

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