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Gender Disparities and Socio-Economic Factors on Learning Achievements in Agricultural Science in Rural and Urban Secondary Schools of Ogbomoso North Local Government Area of Oyo State, Nigeria.

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Abstract
To contribute to the realization of the Millennium Development Goal (MDG) by the United Nations on the promotion f gender equity, the researchers sought to empirically verify the existence or otherwise of gender inequality in the agricultural • science achievement of urban and rural, male and female students in Ogbomoso North Local Government area of Oyo State, Nigeria; and whether parental socio-economic status and school location, taken independently, are significant factors in the achievement of the students. By simple random sampling, 240 students (50% males, 50% females) were selected from three schools each in urban and rural settings of the secondary schools and a 30-itrm four option multiple choices agricultural science achievement test (ASAT) was constructed and administered. Two validated instruments were used to collect the data while descriptive and t-test statistics were employed for data analysis. The findings indicated that gender, schools location and socio-economic status have effects on students' performance in agricultural science as a subject. A major implication of this study is that collective efforts of the governments and other educational stakeholders should be put in place.

INTRODUCTION

Gender equality and impact of socio economic differences in provision of learning opportunities are some of the major concerns in educational development in many developing countries. Of particular concern is unequal or the disadvantaged position of women as compared to men and by extension girls as compared to boys in educational participation and performance, and impact of poverty on households' schooling choices and levels of learning achievements (Maiko, 1998).

According to the goals of Education for All (EFA) and Millennium Development Goals (MDGs), many countries were faced with challenges of eliminating gender disparities in primary and secondary education by 2010 and achieving gender equality in education by 2015. With specific focus on ensuring girls' full and equal access to, and achievement, in basic education (UNESCO, 2003). To achieve these targets, informed strategies to improve participation of both male and female citizens in various socio economic activities, including education are necessary. In most developing countries, gender differentials in education are more pronounced in terms of participation and internal efficiency and. in cognitive performance, with girls being the most affected. While enrolment rates to some extent do not differ greatly, more boys than girls complete schooling, especially at primary school (IMF 2005).

The total population of Nigeria is over 100 million, with approximately 75% of people living in rural agricultural communities. Agriculture has been the mainstay of economic development in Nigeria since independence in 1960. With the first development plan (1962-1968) and the second development plan (1970-1974), the agricultural sector accounted for two thirds of the national gross revenue. From 1975, oil revenue exceeded that of agriculture and became the main source of Nigeria's revenue. However, current government policy has shifted again towards the agricultural sector. Within this context, it is not surprising that agricultural science occupies a central place within school curricula in Nigeria,

The school agricultural science curriculum is structured around the three major concepts of production, protection and economics, with topics classified as basic concepts, crop production, animal production, agricultural ecology and systems, agricultural engineering and agricultural economics. Despite agricultural science's pride of place, research has suggested that Nigerian students often have negative attitudes to the study of agricultural science and low levels of achievement in it (Idiris, 1988, 1990). The effects of socio-economic status cannot be overemphasized because there is a marked or keen difference between students in urban schools and rural schools. In terms of educational materials; like textbook, laboratory equipment and materials, enough personnels are available in urban schools than rural schools and there are facilities for the teaching and learning of Agricultural science (Olaitan, 1984).

Academic performance or achievements of the students are the expected outcome after teaching expected to effect a change in the behavior of learners. The aim of the study was to evaluate gender disparities and socio-economic factors on learning achievements in agricultural science in Rural and Urban area of

Ogbomoso North Local Government Area of Oyo State.

Research design and Methodology

Design of the study

The descriptive and expost-facto research design was adopted in this study. In this kind of study, the researcher is just interested in knowing the influence of the independent variables on the criterion variable without necessarily manipulating the independent variables.

Population for the study

The population of the study comprises students in Junior Secondary School III in Ogbomoso North Local Government Area of Oyo State which include male and female from both the urban and rural schools for the purpose of easy collection of data. Six- schools in this local government were involved. Therefore, two hundred and forty students in JSS III of the sampled schools were used.

Sample and sampling technique

Six public secondary schools (three in urban and three in rural area) were randomly selected from nineteen (19) public secondary schools in Ogbomoso North Local Government Area of Oyo State. Fourty (40) junior secondary school III students were randomly selected from each of these schools; making a total of two hundred and forty (240) students in all. Of this number, one hundred and twenty (120) were males, while the remaining one hundred and twenty (120) were females.

Research Instrument

Two main instruments were used to carry out this research. These are: Student's attitudinal questionnaire and Student's achievement scores in agricultural science. Questionnaire designed by the researcher was used in collecting data for this study. The scale has two sections. Section A was designed to obtain demographic data such as Name of the student, location of school, age, sex and place of birth while Section B of the scale contains Socio-Economic status index like structure of the family, father and mother occupation, highest qualification, status at work etc; measured the socio-economic status. These were fill-in the gap type and multiple choice type of questionnaire. The higher the total score in the scale, the higher the socio-economic level. The validation was done with the assistance of some experts in the field. The scale has interval test-retest reliability co-efficient of 0.73. The interval was two weeks; and 240 participants were used.

A forty-five minute, thirty (30) item multiple choice Agricultural science Achievement Test (ASAT) of four options, A to D, was constructed by the researcher based on the prescribed junior secondary III curriculum to cover the basic areas of animal science, plant science and economics. The ASAT covered the level of cognitive domain; knowledge, comprehension, application and thinking. ASAT consisted of thirty questions that comprised 9, 6, 6 and 9 questions from the levels of cognitive domain respectively. Students were expected to encircle the option bearing the answer.

Procedure for data collection

The instrument was personally administered by the researcher on each of the participants in their various schools after taken permission from the schools principals; and was collected back immediately from them. This resulted to 100% retrieval of the instrument administered.

Data Analysis

Descriptive statistics (percentage, mean and standard deviation) and inferential statistics (t-test and analysis of variance (ANOVA) using the procedure of SAS (2009) were used to analyse the data. Analysis of variance (ANOVA) was utilized to determine the extent and strength of relationship between the independent and the criterion variable, t-test statistic was equally employed to determine the value that made the most significant contribution to the prediction

Results

Table 1: Summary of t-test of students' gender difference

Gender	N	Mean	Standard deviation	Df	Tcal
Female	**120**	**20.6667**	**7.1700**	**119**	**1.658***
Male	**120**	**22.1589**	**8.3327**	**119**	
Total	**240**				

The result on table 1 shows that there is a significant difference between male and female scores since the mean of the female students = 22.1489 is slightly higher than the mean score of male students =20.6667 but the difference is not statistically significant. This implies that the sex of the students does not significantly predict students' performance in agricultural science in urban setting.

Table 2a: Descriptive statistics on the effect of rural and urban students' academic achievement.

Location	N	Mean	Standard deviation	Sum	Variance
Rural	**120**	**17.20**	**5.6168**	**688.00**	**31.55**
Urban	**120**	**25.89**	**7.4186**	**1035.00**	**55.04**

The table 2a reveals that students residing in the urban area had the better academic performance according to their mean score 25.89 compare to that of their counter parts in the rural area with mean score of 17.20.

Table 2b: The t-test on the effect of rural and urban area on students' academic achievement

Location	N	Mean	Standard Deviation	Df	tcal
Rural	**120**	**17.20**	**5.6168**	**119**	**1.658***
Urban	**120**	**25.89**	**7.4186**	**119**	

Table 2b shows there was a significant differences between the effect of urban and rural areas on students academic achievement.

Table 3: Socio-economic status of male and female students in Agricultural science

Variable	Level	Gende	N	x	SD	Df	Tcal
Parental	**High**	**Male**	**120**	**13.92**	**2.40**	**2.38**	
socio		**Female**	**120**	**13.48**	**2.53**		
economic	**Low**	**Male**	**120**	**12.08**	**2.35**	**238**	**3.921***
status		**Female**	**120**	**11.06**	**2.45**		

Table 3 shows the socio-economic status of male parent and female parent students in agricultural science while the achievement of rural male and female students differ only for those in low socio-economic bracket.

Table 4: Effect of socio-economic status of students in rural and urban settings

Variable	Level	Gender	N	x	SD	Df	Tcal
School	**Urban**	**Male**	**120**	**13.02**	**3.55**	**2.38**	**2.722***
location		**Female**	**120**	**12.05**	**3.48**		
	Rural	**Male**	**120**	**13.98**	**3.40**	**238**	
		Female	**120**	**3.32**	**2.45**		

***P<0.05**

The effect of socio-economic status of students parent in rural and urban setting was shown in Table 4. The achievement of rural male, and female students based on school location was only differ for those in the rural setting.

Discussion

Interest in gender-achievement relationship among rural students stems from the fact that these students are in the majority in Nigeria as a heavily populated developing nation in Africa. The first finding revealed the existence of significant gender achievement gap in favour of the rural males. This corroborates popular research findings in gender literature (Ezeameyi 2002; Howes, 2002). Nurture in Nigeria tends to favour male dominance over the feminine gender. Environmental provision for male students makes them fit and able to cope with tasks requiring high intellectual challenge, computation and rigour. This phenomenon is further compounded in Africa where sex-stereotyping is so pervasive that from birth, society fixes gender roles and conditions males to play and act within the confines of intellectually and physically more challenging tasks like construction, moulding, football, palm wine tapping, climbing, agriculture, fishing and the like. Women on the other hand, are 'sentenced' to the kitchen and related domestic chores, including child-rearing.

By extension, female students in the school tend to opt for subjects like, Home Economics and at most Biology. Chemistry, Physics, Agricultural Science, Mathematics and Further Mathematics are male-dominated zones (Graham, 2001). In school, one hears female students saying that science subjects are for the boys and this low motivation may further widen the gender gap in agricultural science achievement (Mutemeri and Mygweni, 2005).

In fact, a typical informal survey in the Nigerian classroom will readily show a greater proportion of female students opting for non- science subjects if given the opportunity. This may explain why agricultural science should be made compulsory in both primary and secondary schools. Yet, till date many students still

offer the subject not by conviction of its significance but on the basis of the compulsion.

The result also showed that school location has significant effect on student academic performance in agricultural science. This is in line with Isiugo-Abanihe and Labo-popoola (2004) findings that students in urban areas performed significantly better than those in rural areas and also this is in support of school location playing a significant role in academic performance of students.

The hypotheses on socio-economic revealed that parental socio-economic status (SES) and student's agricultural science achievement are only partially gender sensitive. That is, whereas there is no significant achievement difference between male and female Agricultural science students from the high socio-economic parents, significance is established for the achievements of male and female students from the low socio-economic parents. Also, whereas, male and female students exhibit heterogenous agricultural science ability in the urban schools, there is a significant difference in the ability of the male and female students from the rural schools. All cases of significance favour the male students. This was in line with the finding of Yoloye, (1998) on students' gender and science achievement.

These phenomena could be justified by the fact that students of high socio-economic parents enjoy such motivational intervention as extra home coaching, enriched home environment with tutorial disks and programmes available in video, good library and better state of mental health. Their less fortunate counterparts are highly stressed and exploited at home through engagements in domestic tasks leaving little time for studies. Urban schools on the other hand are characterized largely by effective teaching, good instructional supervision and the other advantages of small-scale operation and more manageable teacher-pupil ratio (Njabili et al., 2005) in Tanzania.

The consequence is that learner inadequacies including gender defect is over shadowed by strengths from other sources, thus bridging gender gap. This cannot be said of rural schools. It is very likely therefore that the environmental disadvantage, coupled with persistent sex-stereotyping typical of African cultures tends to keep the girls below the boys in Agricultural science achievement.

Conclusion

It is concluded that there exists significant gender differences in urban and rural students' Agricultural science achievement and parental socio-economical status in Ogbomoso North Local Government Area of Oyo State, Nigeria.

Recommendations

A lot needs to be done to bridge the observed gender gap in the urban and rural students' Agricultural science achievement and their parental socio-economical status in Ogbomoso North Local Government Area of Oyo State, Nigeria.

- Guidance machinery in the school should be energized to encourage more women participation in effective agricultural science learning. The female students should be informed that agricultural science could be studied and passed just like other subjects, and that the subject is an essential tool, a prerequisite for further education in a host of vocations. Failure in agricultural science is therefore a serious set-back in capacity building and human development.
- The current poverty alleviation programme in Nigeria should be sustained and made practically more effective to bridge the gap between the rich and the poor. This will improve child education and foster national development.
- Greater collaboration in school funding should be pursued by the government at all levels so that the rural schools which are so poorly funded could improve their capacity for productivity. The government should apply itself to the United nations prescribed minimum budgetary allocation for education.
- Agricultural science teaching and evaluation strategies should be gender bias-free. This way, males and females will tend to see themselves as equals, capable of competing and collaborating in classroom activities.

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