

Analysis of Gender Performance in Physics in Colleges of Education, Nigeria

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Abstract

The paper employed descriptive survey study of male and female performance in physics in four Colleges of Education in Kwara state, Nigeria. One hundred students were sampled for the study. Pearson Product Moment Correlation Coefficient, frequency counts and percentages were used to analyse the data collected. The results showed no relationship between male and female performance and male students performed better than female in physics. The paper concluded that Students' performance in physics in College of Education is no gender bias; however, male students are better in performance than female students. Some recommendations were suggested at the end of the study.

Keywords: Gender, academic performance, science enrolment

Introduction

Physics is perceived to be a difficult course because of its abstract nature (Adeyemo, 2010). Physics is a subject students usually performed poorly in all level of the educational system. As observed by Akanbi (2003) that the trend in the enrolment and performance of secondary school students in science subjects, especially Physics assumed threatening and frightening dimension.

There are many reasons for this poor performance, in the opinion of Akanbi (2003) poor performance in Physics may be due to a number of fundamental reasons, which could be due to shortage of science teachers in quality and quantity, inadequate laboratory equipment and facilities, shortage of suitable Physics textbooks and other factors. Bamidele (2004) observed lack of interest in physics by students due to preconceived idea that physics is a difficult subject has affected the enrolment and performance of students in physics.

The poor performance physics is no gender exception it cut across both male and female but it is very important to find out the level of failure between male and female so as to proffer adequate solution to it. Effect of gender on school science cannot be overemphasised as observed by Bello (2002) that gender difference is characterised by female underrepresentation and underachievement in science.

This study is necessary because of gender disparity in science enrolment and also in job placement in Nigeria. Abdullahi, Kalejaiye-Matti, Garba and Balogun (2007) agreed that socialization patterns in Nigerian and most African setting, place enormous restrictions on the female gender and demand from her a higher input of daily domestic labour than from the male. This perception automatically scheme female out from any consideration for serious professional discipline even in cases where the female appears to be more brilliant than their male counterpart. Mari (2005) believed that gender discrimination in employment is one of the factors contributing to gender inequality in pursuit of science, technology and mathematics education. He said many employers of labour, sometimes including female employers prefer employing men to women. Okafor and Okoye (2004) observed that there are more men in civil and other technological courses than women. It is very necessary to compare students' performances in physics based on gender to know if male performance in physics is better than that of female which may result into having more male in physics enrolment than female or make male to be more in any job relating to physics.

Some people even believed that male performed better than female in any course that deal with calculation as observed by Awoniyi (2000) that male candidates performed better, relative to female in subjects requiring quantitative ability. He said male show superiority in science, statistics and accounting.

Raimi and Adeoye (2002) in their research on gender differences among college students as determinants of performance in integrated science revealed that there is a significant difference between males and females in terms of their attitude towards Integrated science in favour of male, and this may result into the better performance of the male in integrated science cognitive achievement.

Research questions

Which of the gender performed better in physics in colleges of education?

What is the distribution of students' performance in physics in colleges of education?

Research hypothesis

There is no significant correlation between male and female performance in physics in colleges of education.

The study employed descriptive survey method of research where students' scores in physics were collected and analyzed for the purpose of the study. The sampled population comprises of four colleges of education in kwara state where student combined physics with chemistry, computer, integrated science or mathematics.

The research instrument used was a pro forma for collecting students' results in physics from year 1 to year 3 (final year) of the students in the four colleges.

Permission was sought from the head of physics departments of the colleges to collect student scores in physics from the college examination units.

Research questions were answered using frequency count and percentages because it is used for organizing and describing the characteristics of educational variables in concise and meaningful quantifiable terms (Daramola, 2006).

Hypothesis was tested using Pearson Product Moment Correlation Coefficient because it is used to determine the degree of relationship between two sets of variables (Okoro, 2002), this could also be supported by Owie (1996) that, correlation coefficient method is used to compute the strength of association between variables.

Results

From table 1 correlation coefficient (r) is .221. The correlation is perfect but very weak. Testing for the significant was done at alpha level 0.05. The calculated correlation is less than the table correlation i.e. $r_{cal} < r_{tab}$. The null hypothesis which stated that there is no significant correlation between male and female students' performance in physics in colleges of education is hereby accepted.

From table 2 the mean score and standard deviation of male performance are 52.7600 and 9.95205 while that of female are 50.2200 and 11.10486 from these it shows that male students' performed better than female.

From table 3 and chart 1 the distribution of performance shows that 6% of male had distinction while female had 2%, 20% of male had very good while female had 16%, 44% of male had good while female had 34%. Male students had higher percentage at an upper grade while female had higher grade in lower grade. The percentage that failed was higher in female than in male.

Discussion

From the result it was revealed that there is no significant correlation between male and female performance in physics. This implies that performance of any of the gender can in no way affect the performance of the other. It means one could not predict the performance of female students from male students or vice versa; they are independent of one another. This conforms to Daramola (1983) that gender difference has no influence on students performance in Basic Physics Test.

The results of the study revealed that male performed better than females in physics, this confirmed the submission of Awoniyi (2000) that, male candidates performed better, relative to female in subjects requiring quantitative ability. He said male show superiority in science, statistics and accounting.

This might also account for gender discrimination in employment as confirmed by the submission of Mari (2005) that, there is gender discrimination in employment where many employers of labour, sometimes including female employers prefer employing men to women. This result also support the low enrolment of female in sciences as against that of female as opined by Ahmed (2000) that, there is low participation of female in Sciences, Technology and Vocational education because these areas are exclusively meant for men. This result is not surprising due to female attitude to things of life apart from academic. For instance, female spend a lot of time in dressings, make-up and plaiting of hair. They waste precious time meant for studies on this trivial matters.

Wudu and Getahun (2009) said girl often encounter violence in tertiary institutions; according to him females are sexually abused and harassed by male classmate and sometimes the teachers, this affect the female performance and may lead to dropout of such student from school.

The opinion of Hanish in Raimi and Adeoye (2002) is in line with the result of this study that male tends to perform better than females student especially in task relating to numerical problems.

Belief of many women that their primary role is in the home (Oyewo, 2001) is not unconnected with their attitude toward learning, which eventually made male performed better than female in schools as revealed in this study.

A word of Bakari (2001) that, retention and achievement within education system of female students is affected by lack of interest of uneducated parent on female education is confirmed by this study.

The result of this study also revealed that male students had better grade than female. This is true because male students had more time for their studies as against the female students who are always distracted by domestic assignment as opined by Olarewaju (2006) that, cultural setting does not encourage the girls to learn science

like the boys; boys goes out freely to explore and learned outside but girls are kept at home doing domestic work.

Conclusion and recommendations

Students' performance in physics in college of education is no gender bias; however, male students are better in performance than female students.

Based on the results of this study the following recommendations are suggested.

There should be special attention to female students by the teacher with the aim of making them to be more committed to their work. They should be monitor to ensure they do their assignments, attend practical classes and take part in group project works.

Government, school management and individual should also encourage female students who performed well in physics by given them scholarship or bursary award as it is been done in some colleges through awards like Provost and Deans' awards or any other special awards.

Automatic job should be provided for any female physics student who excels in physics. For instance, female student who made distinction grade should be given job immediately they finished their programme in school or made to further her education according to her choice.

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Table 1: Correlation between male and female performance in physics

variables	N	df	r-calculated	r-table
male	50	48	.221	.249
female	50	48	.221	.249

Table 2: Frequency table of male and female students 'performance in physics

Grade	Male	(%)	Female	(%)
A	03	06	01	02
B	10	20	08	16
C	22	44	17	34
D	08	16	15	30
E	04	08	05	10
F	03	06	04	08

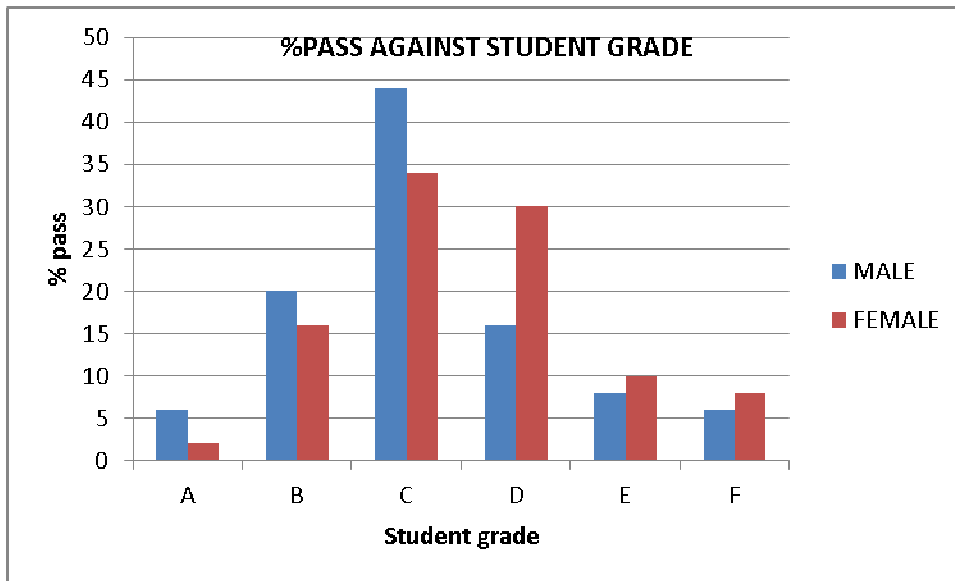
Table 3: Mean scores of male and female students

	N	Minimum	Maximum	Mean	Std. Deviation
Male	50	18	70	52.7600	9.95205
Female	50	13	71	50.2200	11.10486

Table 4; Grade distribution of male and female

Grade	Percentage (%)	
	Male	Female
A	06	02
B	20	16
C	44	34
D	16	30
E	08	10
F	06	08

Chart of grade distribution of male and female



Key to the grade

A= Distinction

B= Very good

C= Good

D= Fair

E= Pass

F= Fail

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