Effect of students’ gender, school environment and teachers on the students’ learning outcomes in basic technology in secondary schools in Lagos state in Nigeria

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Abstract
This study examined the effect of students’ gender, school environment and the teachers on the students’ learning outcomes in secondary schools in Lagos State in South West Nigeria. Four research questions were used in this study. A random sampling technique was used to select the sample of 121 Junior Secondary school (JSS 2) students made up 59 males and 62 female students and ten (10) teachers from Surulere Local Government Area. Data was obtained by the use of a structured questionnaire and students’ achievement scores were also obtained. It was found that students’ gender in the studied schools has no significant influence on their learning outcomes in Basic Technology. The gender difference in Basic Technology achievement was in favour of the girls but not statistically significant. Girls had more positive attitude than boys and this impacted on girls having relatively better achievement in Basic Technology than boys. It was recommended that teachers and other stakeholders in education system should organize periodic seminars and workshops for students, parents, teachers and school administrators designed to promote positive attitudes toward Basic Technology. Head of institutions and department should encourage both males and females by providing learning materials as these will promote students’ learning in the secondary schools. Parents should treat children equally irrespective of their gender. Teachers should get students informed that their attitude determines their altitude, therefore they should develop good attitude toward their education to excel in life. They should endeavor to make Basic Technology teaching interesting, taking into consideration individual differences in ability, background and attitudes.

Keywords: Education, Gender and Learning outcomes

1.0. Background of the study
Education is the primary agent of transformation towards sustainable development. It increases people’s capacities to transform their visions for society into reality. All countries strive for quality education for their sustainable development. The issue of poor
academic performance of students in Nigeria has been of much concern to all and sundry. The problem is so much that it has led to the widely acclaimed fallen standard of education in Lagos State and Nigeria at large. The issue of gender is an important one in Gender refers to the social meanings associated with being a male or a female, including the construction of identities, expectations, behaviours and power relationships that derive from social interactions (Ambe-Uva, Iwuchukwu and Jibrin 2008). Science education especially with increasing emphasis on ways of boosting manpower for technological development as well as increasing the population of females in science and technology fields (Ogunkola and Bilesanmi-Awoderu, 2000). In Nigeria, and perhaps the whole of Africa, gender bias is still very prevalent (Arigbabu and Mji, 2004). This is a view to which Onyeizugbo (2003) has also alluded in pointing out that sex roles are somewhat rigid in Africa particularly in Nigeria, gender differences are emphasized. It is common place to see gender stereotypes manifested in the day-to-day life of an average Nigerian. Certain vocations and professions have traditionally been regarded as men’s (medicine, engineering, architecture) and others as women’s (nursing, catering, typing, arts). Typically, parents call boys to wash cars, cut grass, fix bulbs, or climb ladders to fix or remove things. On the other hand, chores such as washing dishes, cooking, cleaning and so on, are reserved for the girls. In a nutshell, what are regarded as complex and difficult tasks are allocated to boys, whereas girls are expected to handle the relatively easy and less demanding tasks. As a result of this way of thinking, the larger society has tended to see girls as the "weaker sex". Consequently, an average Nigerian child goes to school with these fixed stereotypes. Gender issues, both on the part of the teachers and students, have been documented to affect achievement generally (Erinosho, 2005; Kennedy, 2000; Ogunkola, 1999).

Many studies have been conducted to determine the factors that influence students’ academic achievement. Baker and Maclyntyre (2003), Kissau (2006) and Bosede (2010) assert that sex and location of school influence students' academic achievement in some subject areas. Conflicting results in gender-related research should, however, be expected as studies vary in their learning contexts. These include the methodology, populations, geography, research tasks, and classroom settings. There are no longer distinguishing differences in the cognitive, affective and psychomotor skill achievements of students in respect of gender (Arigbabu&Mji 2004; Bilesanmi-Awoderu 2001, 2002, 2004, 2006; David & Stanley 2000; Din, Ming, & Esther, 2004; Freedman, 2002; Sungur&Tekkaya 2003). Girls are being encouraged and sensitized into developing positive attitudes towards science. However, some researchers still found that there are still significant differences in the cognitive, affective and psychomotor skill achievements of students in respect of gender (Aguene&Uhumniah (2008); Billings (2000); Croxford (2002); Eccles, Lord, Roeser, Barber, & Jozefowicz, 1997; Hyde & McKinley, 1997; Kolawole, 2007).

The issue of quality in education goes beyond the curriculum or subject content but includes learning environment and school factors. It is the view of Obayan (2003) that classroom learning environment and school factors exerts some dominant influence on learner’s achievement. To account for the school fees collected and to maintain appreciable number of students in their schools, the school proprietors strive to provide enabling environment for effective teaching and learning to thrive. A high quality assurance in schools entails providing most of the factors that enhance effective teaching and learning which ultimately affect students’ academic achievement. These factors as enumerated by Postlethwaite (2007) include but not limited to teacher-variables, environment/family-variables and school-variables. Of all these factors, the ones that are touted to exact most influence on the learning outcome are the “teacher-variables” as the teacher is the ultimate implementer of the curriculum (Postlethwaite, 2007).

1.2. Statement of the problem
Learning outcomes of students in Nigeria particularly the students from the study area, on the average has witnessed a steady decline in recent times. This can be attributed to a number of factors such as the students’ gender, school environment and the teachers, which have in one way or the other contributed to the students’ learning outcomes even in Basic Technology. This study sought to find the effect of students’ gender, school environment and teachers on the students’ learning outcomes in Basic Technology in secondary schools in Lagos state in Nigeria.

1.3. **Purpose of the study**
1. To determine the influence of the students’ gender on their performance among secondary school students in Basic Technology
2. To evaluate the teachers’ assessment of the difference in the male and female students learning outcomes in Basic Technology
3. To find out the responses of the male and female students to their lessons by their teachers
4. To find out the impact of the school environment on the students’ learning outcomes

1.4. **Research questions**
1. What influence does students’ gender have on their performance among secondary school students in Basic Technology?
2. What is the teachers’ assessment of the difference in the male and female students’ learning outcome in Basic Technology?
3. What is the response of the male and female students to their lessons by the teachers?
4. What impact does the school environment have on the students’ learning outcomes?

2.0. **Methodology**
The descriptive survey design was adopted for the study.

2.1. **Population of Study**
The targeted population of the study comprised of all the students in the four Secondary schools in Surulere Local government area chosen.

2.2. **Sample and Sampling Technique**
Simple random sampling technique was used in selecting the sample of this study. And the sample comprised of five secondary schools (Prestige Private College, John Kennedy International School, Glory-land International School, Hirose College and Shadol Private College) consisting of one hundred and twenty-one (121) students from JSS 2 and ten (10) teachers from these schools were used.

2.3. **Instrument for data collection**
Research instrument for this study comprises twenty (20) items to be answered so as to elicit information related to the four research questions of the study. Four likert scale questionnaire as modified by the researchers was used with the weightings of the responses as follows: Strongly Agree= 4 points; Agree= 3 points; Disagree= 2 points and strongly Disagree = 1 point

2.4. **Validity of the instrument**
The instrument was validated by three experts in the school of Technical Education. The instrument was reviewed based on their recommendations.

2.5. **Reliability of the instrument**
The reliability of the instrument was determined by using cronbach’s alpha whose value was 0.602

2.6. **Data analysis technique**
Frequency, mean and independence t-test statistics were used to analyse the data collected from respondents on the research questions.

3.1. Data Analysis and result presentation

The data collected were analyzed statistically, they were collected with questionnaire.

3.1.1. Research Question one: what influence does students’ gender have on their performance among secondary school students in Basic Technology?

Table 1: Showing students’ performance according to gender from the students’ response

<table>
<thead>
<tr>
<th>Students’ Gender</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>59</td>
<td>59.02</td>
<td>16.348</td>
<td>2.128</td>
</tr>
<tr>
<td>Female</td>
<td>62</td>
<td>59.65</td>
<td>16.778</td>
<td>2.131</td>
</tr>
</tbody>
</table>

From table 1 above mean achievement score of the female students (59.65) was higher than that of the male students mean achievement score (59.02). This implied that the female students have higher achievement score than the male students in this study.

Table 2: Showing the independent samples t-test for the students’ responses

<table>
<thead>
<tr>
<th>Levene’s Test for Equality of variances</th>
<th>t-test for Equality of means</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>ACHIEMENT</td>
<td></td>
</tr>
<tr>
<td>Equal variances assumed</td>
<td>0.202</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>-0.209</td>
</tr>
</tbody>
</table>

From table 2 above it was discovered that the p-value 0.835 was greater than alpha of 0.05. Therefore the null hypothesis was accepted. Although the female students have higher achievement score (mean= 59.65; Standard deviation= 16.778) than male students (mean= 59.02; standard deviation= 16.348) there is not a significant statistical difference in these averages. Therefore, the null hypothesis is accepted.

3.1.2. Research Question two: what is the teachers’ assessment of the difference in the male and female students’ learning outcome in Basic Technology?

Table 3: Showing the standard deviation and mean rating score of teachers’ responses on the difference between the learning outcomes of male and female students

<table>
<thead>
<tr>
<th>S/N</th>
<th>ITEMS</th>
<th>SD</th>
<th>REMARK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Female students perform better than male students</td>
<td>2.64</td>
<td>1.084</td>
</tr>
<tr>
<td>2</td>
<td>Male students have confident that they can perform well in Basic Technology</td>
<td>3.08</td>
<td>1.008</td>
</tr>
<tr>
<td>3</td>
<td>Male students like Basic Technology</td>
<td>2.91</td>
<td>1.018</td>
</tr>
<tr>
<td>4</td>
<td>The grade of female students is low in Basic</td>
<td>2.38</td>
<td>1.072</td>
</tr>
</tbody>
</table>
Female students have little confidence in education. But at a mean rating score below 2.50, it was revealed that the grade of female students was low in Basic Technology.

3.1.3. Research Question three: what is the response of the male and female students to their lessons by the teachers?

Table 4: Showing the standard deviation and mean rating score of teachers’ responses on assessment of the students by gender to their learning outcomes

<table>
<thead>
<tr>
<th>S/N</th>
<th>ITEMS</th>
<th>SD</th>
<th>REMARK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Male students are easily distracted during the lesson</td>
<td>2.77</td>
<td>1.120</td>
</tr>
<tr>
<td>2</td>
<td>Female students are more intelligent</td>
<td>2.72</td>
<td>1.116</td>
</tr>
<tr>
<td>3</td>
<td>Male students study their books after school hour</td>
<td>2.54</td>
<td>1.112</td>
</tr>
<tr>
<td>4</td>
<td>Female students always attend classes in the school workshop</td>
<td>2.77</td>
<td>1.120</td>
</tr>
<tr>
<td>5</td>
<td>Male students ask questions during lessons</td>
<td>2.96</td>
<td>0.923</td>
</tr>
</tbody>
</table>

From table 4 at mean score rating above 2.50, it was revealed that male students are easily distracted during the lesson, though female students appeared to be more intelligent than their counterpart. Male students studied their book after school hour and ask questions during the lessons, yet the female students always attend classes in the workshop.

3.1.4. Research Question four: What impact does the school environment have on the students’ learning outcomes?

Table 5: Showing the standard deviation and mean rating score of relationship between school environment and students’ learning outcomes

<table>
<thead>
<tr>
<th>S/N</th>
<th>ITEMS</th>
<th>SD</th>
<th>REMARK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>There are enough classroom in my school</td>
<td>3.48</td>
<td>0.758</td>
</tr>
<tr>
<td>2</td>
<td>My school has a standard workshop</td>
<td>2.85</td>
<td>1.104</td>
</tr>
<tr>
<td>3</td>
<td>My school environment is conducive for learning</td>
<td>3.36</td>
<td>0.855</td>
</tr>
<tr>
<td>4</td>
<td>Students with good attitude learn better</td>
<td>3.55</td>
<td>0.776</td>
</tr>
<tr>
<td>5</td>
<td>Teachers’ behavior influences students’ learning outcomes</td>
<td>2.99</td>
<td>1.098</td>
</tr>
</tbody>
</table>

From table 5 at mean score rating above 2.50, it was discovered that there was enough classrooms in the schools with standard workshop. It was also revealed that the school environment was conducive for learning; students with good attitude learn better and teachers’ behavior influence students’ learning outcomes.

3.2. Discussion of results

The result showed that the mean achievement score of the female students (59.65) was higher than that of the male students mean achievement score (59.02). This implied that the female students have higher achievement score than the male students in this study, which agreed with the study carried out by Babajide (2010). It was discovered that Female students perform better than male students, Male students have confident that they can perform well in Basic Technology, This agrees with the study of Clark and Gorski (2002) who found that female do not perform well in science because of their low level of confidence and not their ability level. Male students like Basic Technology and Female students have little confident in education. This agrees with the study of Clark and Gorski...
(2002). But at a mean rating score below 2.50, it was revealed that the grade of female students was low in Basic Technology.

It was revealed that male students are easily distracted during the lesson which agreed with the work by Sullivan, Joshi and Leonard (2010), though female students appeared to be more intelligent than their counterpart. Studies conducted elsewhere have shown that girls in single sex classes were actually more likely to act outside of traditional gender roles exploiting their potential (Ferrara, 2005). However, this agreed with the study carried out by Booth and Nolan (2009) girls environment plays an important role in explaining why she chooses not to compete. Girls from single-sex schools behave more competitively than do girls in coeducational schools. Male students studied their book after school hour and ask questions during the lessons, it is in consonant to the work carried out by Shabi and Udofia (2009) noted that active learning from books is better than passive learning such as watching televisions and playing games. Yet the female students always attend classes in the workshop.

It was discovered that there was enough classrooms in the schools with standard workshop. It was also revealed that the school environment was conducive for learning, this agreed with the study carried out by Fareo and Okotoni(2009) that classroom environment exert more dominant influence on effective learning. Students with good attitude learn better and teachers’ behavior influence students’ learning outcomes.

3.3. Implication of the study
The implication of this study is that parents, teachers, the school authorities and policy makers are expected to work together in order to promote students’ learning outcomes through provision of good learning environment and given equal treatment to the students’ gender without biases.

3.4. Conclusion
This study concludes that teachers, students’ gender and good learning environment have a way to boost students’ learning outcome in Basic Technology in the secondary schools.

3.5. Recommendations
Based on the findings of this study, the following recommendations are made:-

- Teachers should avoid being gender biased in their appraisal of students’ performance in secondary schools.
- School administrators and heads of department should encourage both male and female students by providing needed learning materials as these will promote students’ learning in the secondary schools.
- Parents should treat their children equally irrespectively of their gender.
- Teachers should inform the students that their attitude determine their altitude, they must develop good attitude toward their education in order to excel in life.
- School environment should be made conducive for learning in order to motivate the students toward better performance.
- Teachers should endeavour to make teaching of Basic Technology interesting, taking into consideration individual difference of the student in their ability, background and attitude

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