Effect of English Language on Academic Performance in Physics and Computer Science among College of Education Students

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Abstract: Graduating students of 2012/2013 session of college of education (T) Lafiagi who combined Physics with computer science were sampled to find out effects of English language on physics and computer science. These students’ results in physics, computer science and general English were collected using Analysis of Variance (ANOVA) and Pearson Product Moment Correlation Coefficient to analyze the results. Finding reveals that English language had no influence on students’ performance in physics and computer science and there was correlation between students’ performance in physics and computer science. Recommendations were suggested after the study in line with the findings of the study.

Keywords: academic performance, classroom instruction, ICT, achievement

I. Introduction

English language as the only medium of classroom instruction in Nigerian schools has affected students’ academic performances greatly because the language is foreign to the students. Student who has problem in communication skill may likely not do well academically [5] that is why English language is very important in Nigerian educational system.

The world today is craving for Information and Communication Technology [ICT]; this might not be possible if performance of students in physics and computer science is not very good. [4] in his paper on integration of ICT into Physics learning to improve students’ academic achievement stressed the importance of physics to ICT. [21] observed that high proficiency in English contributed to a better performance in computer science and ICT. Research has shown that academic performance in science is positively related to students’ proficiency in English language [5] that is why this research is very important.

English language in Nigeria has afforded the country a great deal of opportunities of having contact with the international world. This is not in a bit to worship English language than any of the indigenous languages in Nigeria but to unfold that English language is a providential colonial linguistic legacy in Nigeria. [14] averred that its position is such a ubiquitous one that almost every human pursuit beyond the self requires of the use of English in a sense.

[20] argued that English by virtue of the political power of its native speakers has become the world’s international language per excellence. To him, it is the world’s predominant language of information, dissemination, diplomacy, trade and so on. [8] who affirmed that apart from the introduction of English to indigenous people of British colonies that has led to existence of numerous independent states like Nigeria or Ghana, he also asserted that in the British colonies, English has become:

1. The instrument of colonial power.
2. The medium for commerce and education.
3. The common means of communication
4. A vehicle for benevolent Victorian enlightenment.

It is in line with the above thought located in the argument of [8] that [10] opined that English language has become our lingua franca since it is our official language of communication. It is the language of politics, religion, education, science and technology. He further posited that English language has been made a pre-requisite for admission into all tertiary institutions in Nigeria for without a credit pass in English; no candidate would be offered admission in any of the existing university in Nigeria.

[12] also dispelled that English language is very crucial to the Nigeria education system. It is not only the medium of instruction especially at the upper primary, secondary and tertiary level of education but also the language of text-books. It is through the vehicle of English language that student accesses knowledge in other subject areas.
In view of the aforesaid, English language is a language without which there could not have been an entity called Nigeria [15]. Yet, the academic performance of students both at secondary school and post-secondary school is worrisome. To [1] she admitted that the matter is serious because of the effect that English has on all the other subjects of the curriculum at the secondary school level as the only language of instruction. This stems from the notion that students’ academic performance in English is low, but government gives more attention to science oriented subjects forgetting that English is the language with which all these sciences are taught and studied. For this reason, [16] asserted that poor reading ability in students is a major catalyst towards the general poor performance of students in schools as he relates this controversial debate on falling standard of education to be centered on the English language. Yet, the academic performance of students both at secondary school and post-secondary school is worrisome. This [2] pin-pointed that there is indeed a lot wrong with the performance in English even among University students and graduates for that matter. [11] also confirmed that even among the Arab students, students perform poorly in General English which compound their reading comprehension difficulties. This is further buttressed in the yearly released of West African Senior School Certificate Examination (WASSCE) results based on English language of 1990 to 1998 which are evidences of these sad state of affairs and the percentage of those that got grades A1-C6 as seen below;

<table>
<thead>
<tr>
<th>Years</th>
<th>No. of Candidates</th>
<th>A1-C6 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>197012</td>
<td>6.2</td>
</tr>
<tr>
<td>1991</td>
<td>299,323</td>
<td>10.2</td>
</tr>
<tr>
<td>1992</td>
<td>369964</td>
<td>11.4</td>
</tr>
<tr>
<td>1993</td>
<td>5010491</td>
<td>13.3</td>
</tr>
<tr>
<td>1994</td>
<td>524282</td>
<td>14.3</td>
</tr>
<tr>
<td>1995</td>
<td>464270</td>
<td>12.4</td>
</tr>
<tr>
<td>1996</td>
<td>516196</td>
<td>11.3</td>
</tr>
</tbody>
</table>

Source: Analysis of WAEC Result (2000)

Table 1: Performance of candidates in English language in SSCE 1990-1996

Notwithstanding, [7] interestingly averred that all stakeholders in the Nigeria system (parent, guardian, teachers, counselor, etc.) are so much concerned about students’ academic performance in relation to academic standard. This is as a result of the notion that academic performance is a virile instrument to the national development of any nation but it is pathetic to know that students’ academic performance in Nigeria is not encouraging and most especially in English language.

To this effect, proficiency in the English language is essential not only for academic success alone but to perform in life as various individuals. However, there is low proficiency in English language and this to a very large extent resulted in under-achievement among Nigeria senior secondary school students and those at the higher institutions. This shameful failure [6] axiomatically noted in the public’s unhappiness which becomes more prominent following the annual release of the WASSCE results, since the student outcomes do not match the government and parental investments both at the senior secondary schools and tertiary institutions. Nevertheless, it is obvious that students’ academic performance in English language is abysmally low.

It is pertinent to reveal at this juncture that students’ academic performance in General English in our Colleges of Education is a naked fact of shameful deteriorating performance. To this effect, Nigerian youths are not faring well in English with naivé proficiency in English language. No wonder [9] averred that it is no more a hidden fact in Nigeria that students admitted into our universities and other tertiary institutions are quite deficient in the use of English. [18] while quoting the Chief Examiner for English reported concerning English language that the performance of candidates was awfully poor which further solidified the earlier on the woeful academic performance of students in English or General English in Colleges of Education in Nigeria.

II. Methodology

The study adopted descriptive survey method where scores of thirty students in general English, physics and computer science were collected for analyzes. These were the only graduating students of 2012/2013 academic session who combined physics with computer science.

All final year students of this academic session formed the population for the study while the sampled populations were students who combined physics with computer science.

The instruments for this study were scores of students in general English, physics and computer science. The instrument needs no validation because all examination papers of the college had been moderated by experts in universities and other colleges of education.

The following null hypothesis and research question will guide the study:

H01: There is no significant influence of English language on students’ academic performance in physics and computer science.
Q1: Is there any significant relationship between students’ academic performance in physics and computer science?

Statistical analysis found suitable for this study was Analysis of Variance (ANOVA) and Pearson Product Moment Correlation Coefficients because it is used to determine the degree of relationship between two sets of variables [17], this could also be supported by [19] that, correlation coefficient method is used to compute the strength of association between variables.

The major purpose of the study is to find out the influence of English language on students’ academic performance in physics and computer science. The study will also find out the relationship between students’ performance in physics and computer science.

### III. Findings

Table 2: ANOVA

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1764.967</td>
<td>28</td>
<td>63.035</td>
<td>1.261</td>
</tr>
<tr>
<td>Within Groups</td>
<td>50.000</td>
<td>1</td>
<td>50.000</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1814.967</td>
<td>29</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3: correlation between Physics and Computer science

<table>
<thead>
<tr>
<th>Physics</th>
<th>Computer sci.</th>
<th>N</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physics</td>
<td>1</td>
<td>30</td>
<td>0.582</td>
</tr>
<tr>
<td>N</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer sci</td>
<td>0.582</td>
<td>30</td>
<td>1</td>
</tr>
<tr>
<td>N</td>
<td>30</td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

From table 2, the calculated value of $f$ is less than the table value ($f_{cal} < f_{tab}$) therefore hypothesis H01 which says there is no significant influence of English language on students’ academic performance in physics and computer science is hereby accepted.

Table 3 shows that correlation coefficient between physics and computer science is 0.582, this implies there is positive correlation between physics and computer science thereby answered the research question.

### IV. Discussion

The finding of this study that there was no significant influence of English language on students’ academic performance in physics and computer science does not agree with the earlier submission of [5] that student who had problem in communication skill may likely not do well academically. The finding is also in contrast to [1] that English language has effects on all the other subjects of the curriculum at the secondary school level because it is the only language of instruction. However, the finding may not be surprising because the effect of English language on the two subjects were not considered separately; probably if the study was on each of the subject separately there may be significant influence.

The finding also established positive correlation between physics and computer science which agreed with [3] that students who combined Physics with computer science had a higher correlation than any other combinations.

The implication of this is that any student who is not doing well in physics may not equally do well in computer science since they are significantly related.

### V. Conclusion and recommendations

This study shows that there was no significant influence of English language on students’ academic performance in physics and computer science when combined together as a course of study. The study further revealed that there was significant relationship between students’ academic performance in physics and computer science.

In the light of this conclusion, the following recommendations are hereby suggested:

- Students should always be properly guided in the choice of subjects combination in College of education as this may have a serious implications on their academic achievement.
- There are many countries of the world that are not using English language medium of instruction in school yet advancing scientifically and technologically; therefore let there be less emphasis on English language in our educational system.
- Nigerian languages should be introduced as a medium of classroom instruction in our schools to compliment English language that is foreign to the students.

### Acknowledgements
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