

## Upshot of Intelligence Quotient on Students' Academic Performance in English Language

Adenike Aderogba Onojah<sup>\*1</sup>, Amos Ochayi Onojah<sup>1</sup> & Adekola Musiliu Aderoju<sup>1</sup>

\* Corresponding author:

temiladeadenike2015@yahoo.com

1. University of Ilorin, Ilorin,  
Nigeria

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### ABSTRACT

Education is a precondition for the significant and sustainable coast-to-coast economy but intelligent quotient of students could influence their academic performance. This research scrutinized the upshot of intelligence quotient (IQ) on learners' academic presentation. The study was an experimental research. Sample comprised of 150 secondary school students in Oyo state. To address the research questions data was analyzed using frequency count and a basic percentage, while inferential statistics such as t-test and PPMC were used to test the research hypothesis. This study established that the academic performance of secondary school pupils in English was found to be ordinary, with an average score of 56 percent. It was deduced that there was no significant difference in IQ between male and female academics in favor of female pupils. The study clinched that intelligence quotient influences the students' academic performance irrespective of their gender. The study concluded that the students with high IQ often perform better than the those with low IQ. It was consequently endorsed that educational authorities and the school system should encourage students with high IQ, this could enhance students learning.

### KEYWORDS

Upshot; intelligence quotient; students' academic performance; learning; gender

## INTRODUCTION

The moot routine limits the forthcoming goals and purposes of every scholar. For every development expected in any society, it must correlate with their academic revolution. Education, according to Sanni et al. (2017), is a collective intermediate and development of acquiring necessary knowledge, artistry, posture, and reflexes for surviving in a changing world. The engraining of suppositional knowledge, skills, capableness and expertise amongst the personalities is heightened through scholarship and erudite recital. There exist abundant influences that donate a significant partway in ornamenting the academic concert of learners in secondary schools. Therefore, Intelligence of students and study habits are associated with opposite effects on change over the grade of an academic year (Quilez-Robres et al, 2021). Education is a precondition for the significant and supportable national budget. No society can grow beyond the superiority of its sophisticated citizen. Thus, the determination of education is to support entities to exploit their capacities for most efficient self and coast-to-coast expansion (Gambari & Yusuf, 2015). Pupils' entire academic achievement cannot be accurately judged without taking into account their emotional intelligence and general intelligence. Furthermore, students' academic progress in the classroom is a reflection of a variety of elements, some of which are connected to EI, classroom management, and a variety of factors that are related to the unique characteristics of the environment (Al-Qadri & Zhao, 2021).

Academic performance of scholars is a crucial chin in the field of education (Rono, 2013). It is the midpoint about which the unabridged education structure spins. Academic performance is the degree to which a pupil, instructor or establishment has attained their rapid or long-term educational aspirations. Academic performance of scholars governs the triumph or catastrophe of any academic foundation. Extensive researches by Singh, Malik and Singh (2016) contends that academic performance of pupils have an unswerving impression on the socio-economic expansion of a nation. Therefore, if you want positive development in any society, then you need to invest positive in the education of such society. Similarly, Farooq et al. (2011) asserted that students' academic achievement serves as a foundation for information acquisition and skill development.

According to Telg and Irani (2012), unaccompanied skills are insufficient, and trainers must adapt their teaching method as they practice how to operate or at least grasp the motions of the equipment they are using. To ensure operative use of technology for learning, vicissitudes in administrative structures, tactics, and trials, improved methodological assistance for instructors, and in-service training for staff will surely be required. However, the it should be of interest to know that all students learn at different rate. While some students learn fast other students learn at different pace of acquisition. Thus, intelligence quotient (IQ) which refers to the extent of mental ability over its chronological capability could influence students learning.

Intelligence is an integral part to how learners meet the significant challenges they face. The intelligence quotient (IQ) is one of the predictors of a student's school success since it determines their academic progress (Akubuilu et al 2020). The need to develop self-regulation

and executive functioning in addition to social and emotional skills is imperative. Executive functioning and self-regulation are the psychological procedures that empower students to plot, motivate devotion, reminisce directives, and manipulate manifold responsibilities efficaciously (Center on the Developing Child, 2011). Intelligence assists in launching and upholding vigorous and worthwhile associations on the basis of collaboration and confrontation to unsuitable communal compression, and assist with the knowledge of seeking help when needed. A research study conducted, by Fernandez, Salamonson and Griffiths (2012), found that acquiring intelligence aids were important features in the accomplishment and test performance in height school and college learners.

George and Barnabas (2015) stated that, gender is a societal paradigm and the term signifies communally and customarily strongminded transformations among men and women as contrasting to biological alterations strongminded by factors which are chromosomal, functional, hormonal and psychological. According to Ogunlade et al. (2015), there was no significant difference in internet usage between male and female respondents. Furthermore, according to Maxwell and Maxwell (2014), males are more likely to use apps like internet surfing, data analysis, and programming than females. Ilo and Onyejesi (2021) stated that cademic motivation plays a role in students' success and academic performance as IQ alone does not account for the differences in academic performance among students.

### **Purpose of the Study**

The foremost purpose of this research was to investigate the upshot of intelligence quotient on students' academic performance. Specifically, the study;

- attained performance of students in previous exam from class teachers,
- conducted intelligence quotient tests for the students,
- examined the effect of the intelligence quotient test on students' performance,
- determine whether male and female pupils have different intelligence quotients,
- determined whether or not male and female students perform differently.

### **Research Questions**

Answers to the following research questions were found in the study:

- What is the English Language academic achievement of secondary school students?
- What is a high school student's Intelligence Quotient?
- How does IQ test influence the student academic performance?
- What is the difference between the IQ measured from the male and female students?
- What is the difference between male and female students' academic performance?

### **Research Hypotheses**

- $H_{01}$ : In English Language, there is no significant difference in academic achievement between male and female students.
- $H_{02}$ : There is no discernible difference in IQ between male and female students.
- $H_{03}$ : There is no link between a student's IQ and his or her academic success.

## METHODOLOGY

This research is on the upshot of intelligence quotient on students' academic performance and questions were set based on the Intelligence Quotient of the students. The selection of the sample was done using systematic random sampling. A sample of 30 respondents were designated from the five senior secondary schools making a total of 150 respondents. In an organized specimen, only the first element is carefully chosen randomly and the residual units of the sample are designated at static intermissions. The researcher adopted this sampling method because it is a calmer and less expensive technique of sampling and can be expediently adopted even in circumstance of huge populaces. In this study, male and female pupils attending public and private secondary schools in Ogbomoso North local government in Oyo State were randomly selected.

The instrument used in this study is a self-created IQ test with questions about the impact of intelligence quotient on academic achievement in pupils. The IQ test questions are divided into two categories: Agree (A) and Disagree (D). There are four portions to the questions (A and B). Section A contains the demographic information of the respondents, such as their age, gender, and marital status. Section B contains IQ test questions about the impact of intelligence on secondary school student academic performance, which respondents are encouraged to fill out based on their own experiences. In constructing the instrument, adequate care was taken to ensure that it covered the perceived areas of research with the help of experts in the field of English Language and was given due accreditation. The IQ test were administered personally to the respondents. The purpose is to elicit responses and opinions on the subject matter. The respondents were requested to respond sincerely based on their experiences and their response will be strictly used for the purpose of the research. The completed copies of the IQ test questions were then gathered together for analysis and evaluation. The data obtained were subjected to both descriptive and inferential statistics. Mean and Standard Deviation, T-Test and PPMC were used to present the analysis of the respondents' data.

## RESULTS AND FINDINGS

### Research Question One

What is the academic performance of secondary school students in English Language?

Table 1 shows the results of an investigation of the academic achievement of secondary school pupils in the English language. It showed that secondary school students in English scored 53 percent in the first school, 61 percent in the second school, and 59 percent in the third school. Table 1 lists the others. However, the respondents' overall academic achievement in English in secondary school was 56 percent on average. This revealed that secondary school pupils' English academic achievement was average.

**Table 1.** Performance of Students in English Language

S/No	Groups	Frequency	Mean Score
1	School 1	29	53%
2	School 2	30	61%
3	School 3	27	59%
4	School 4	28	62%
5	School 5	28	44%
	Total	142	56%

**Research Question Two**

What is the Intelligence Quotient of secondary school student?

**Table 2.** The Intelligence Quotient of secondary school student

S/No	Groups	Frequency	Mean Score
1	School 1	29	66%
2	School 2	30	76%
3	School 3	27	70%
4	School 4	28	80%
5	School 5	28	49%
	Total	142	68%

Table 2 shows the results of an investigation on the intelligence quotient of secondary school students. The result showed that the average IQ of secondary school student in the first school was 66%, IQ of secondary school student in second school was 76%, IQ of secondary school student in the third school was 70%, IQ of secondary school student in fourth school was 80% while the IQ of secondary school student in the fifth school was 49%. However, the general IQ of the respondents was at an average of 68%. This established that the IQ of secondary school student was high.

### Research Question Three

What is the effect of the IQ test on the student academic performance?

**Table 3.** Effect of IQ Test on Students Academic Performance

S/No	Groups	F	IQ Test	Performance	RankA	RankB
1	School 1	29	66%	53%	4	4
2	School 2	30	76%	61%	2	2
3	School 3	27	70%	59%	3	3
4	School 4	28	80%	62%	1	1
5	School 5	28	49%	44%	5	5
	Total	142	68%	56%		

The impact of the IQ exam on secondary school pupils' academic performance was evaluated, and their replies are given in Table 3. Their respective mean scores were presented across each group. The rank order indicated that IQ test had positive influence on the student academic performance as the increase in students IQ increases their academic performance and vice versa.

### Research Question Four

What is the difference between the IQ measured from the male and female students?

**Table 2.** Influence of gender on Students' IQ

Gender	N	IQ score	Gain
Male	64	64%	
Female	78	72%	8%
Total	142	68%	

The difference in IQ between male and female pupils was calculated and displayed in Table 4. It said that the average male IQ test score was 64 percent, while the average female IQ test score was 72 percent. Gender influences student IQ tests in favor of male pupils, according to the mean difference of 8%.

### Research Question Five

What is the difference in the academic performance of the male and female students?

Table 5 shows the differences in academic achievement between male and female pupils. The average male academic performance score was 53 percent, while the average female academic performance score was 59 percent. The mean difference of 6% indicates that there is a

difference in academic achievement between male and female students, with female students performing better.

**Table 3.** Influence of gender on Students' academic performance

Gender	N	Score	Gain
Male	64	53%	
Female	78	59%	6%
Total	142	56%	

### Hypothesis One

Ho<sub>1</sub>: There is no significant difference between the academic performance of male and female students.

The t-test was used to test the hypothesis at the 0.05 significant level in order to see if there was a significant difference between male and female students' academic performance in English language in Oyo state.

**Table 4.** t-test on significant difference between the academic performance of male and female students in Oyo State.

S/N	Gender	N	Mean	Std. Dev.	Df	T	Sig. (2tailed)	Remarks
1.	Male	64	53%	.096				
					140	-.198	0.655	Not Significant
2.	Female	78	59%	.078				
	Total	142						

$t(140) = -.198, p = 0.7$ , according to Table 6. This indicates that the null hypothesis was accepted as presented. This was due to the fact that the t-value of .20 resulted in a significance value of 0.66, which was higher than the 0.05 alpha value. It was deduced that there was no substantial difference between male and female students' academic performance.

### Hypothesis Two

Ho<sub>2</sub>: There is no significant difference between the IQ of male and female students in English Language.

The hypothesis was tested at the 0.05 significant level using an independent t-test to see if there was a significant difference in IQ between male and female pupils.

**Table 5.** *t*-test on significant difference between the IQ of male and female students.

S/N	Gender	N	Mean	Std. Dev.	Df	T	Sig. (2tailed)	Remarks
1.	Male	64	64%	.056	142	-.69	0.09	Not Significant
2.	Female	78	72%	.063				
	Total	142						

$t(142) = -.69$ ,  $p = 0.09$ , according to Table 9. This indicates that the null hypothesis provided was not rejected. This was due to the fact that the  $t$ -value of .069 resulted in a significance value of 0.09, which was higher than the 0.05 alpha value. It was concluded that there was no substantial difference in IQ between male and female students, with female students having a higher IQ

### Hypothesis Three

$H_{03}$ : There is no significant rapport between students IQ and their academic performance.

In other to investigate whether there was significant relationship between students IQ and their academic performance, PPMC was used to test the hypothesis.

**Table 6.** *t*-test on significant relationship between students IQ and their academic performance.

Variables		Students IQ	Academic Performance
Students IQ	Pearson Correlation	1	.443*
	Sig. (2-tailed)		.007
	N	141	141
	Pearson Correlation	.443*	1
Academic Performance	Sig. (2-tailed)	.007	
	N	141	141

\*. Correlation is significant at the 0.05 level (2-tailed).

$df(141) = .44$ ,  $p = 0.00$ , according to Table 8. This indicates that the null hypothesis was rejected. This was due to the fact that the  $t$ -value of .38 resulted in a significance value of 0.05, which was less than the alpha value of 0.05. It was discovered that pupils' IQ and academic success had a substantial link. So, the relationship between students IQ and their academic performance was found to be significant positively.



## DISCUSSIONS

The academic performance of secondary school pupils in English was found to be average, with an average score of 56 percent. The growth of open schools, as well as the numerous suppliers of correspondence and online education, are all indicators of peoples' wish to learn at their very own comfort rather than at an institution's call (Dhanarajan, 2015). The original goals and duties of education personnel can lead to more effective and efficient teaching and learning (Reetika, 2017). The Intelligence Quotient of secondary school students was found to be high, with an average of 68 percent. Gender has a role in education in a variety of ways, and one of the most common issues is the relative participation rates of boys and girls in scientific, technology, and vocational education programs (Edgar, 2016).

Also, IQ test had constructive impact on the student academic performance. This support the studies of Akubuilu et al (2020) who established that IQ and academic performance were positively correlated with each other. In order to furnish the enabling environment for ICT in the training of teachers, it has become a necessity for institutions to teach and train their service staff and academic in line with the modern technological advances in ICT (Anunobi, 2015). Student performance is not pretentious by the primer of blended learning irrespective of learners' gender (Do Won, Flavio, & Carl, 2013). Thus, this could be influenced by their intelligent quotient. The mean difference of 8% established that gender influence IQ test of students in kindness of the masculine students. This is in collaboration of a study that established that though Female students show more involvements in group discussion, Male, on the contrary, is more conscious to post on the group (Thelwall & Vis, 2017). Also, the performance of male and female learners differs, male students are more motivated to learn and use ICT related tools and thereby perform improved than their female complements when trained using Blended learning strategy (Chiang, Lin, & Tseng, 2017).

The mean difference of 6% indicates that there is a difference in academic performance between male and female students, favoring female students. Another study found that female students, as opposed to male students, saw themselves to be persons who are supplementary comparable online as well as offline, and their Facebook movement exemplified more who they were than it did for guys (Komalsingh & Igor, 2017). The work of Smock (2013), Biernatowska, Balcerowska, & Bereznowski (2017) revealed that women are more likely to feel addicted and spend more time on Facebook, post public messages, post pictures, use Facebook to follow the program and as a teaching resource. It was conditional on their being no substantial difference between male and female pupils' academic performance. Female students fared better academically, whereas male students fared better in terms of social interactions and daily activities (Yorganci, 2016). However, it has been discovered that in a mixed learning setting, female students' academic performance averages are greater than male students' academic performance averages (Demirkolb & Kazua, 2014). Al-Qadri and Zhao (2021) established that

there were statistically significant differences in the respondents' level of emotional intelligence according to the gender variable.

It was interpreted that there was no weighty modification between the IQ of male and female scholars in favour of the female students. For instance, male and female students taught with blended learning tend to perform equally in their academic performance when exposed to blended learning instruction (Gambari, Tajudeen, Ogunlade, & Olurotimi, 2017). It was reasoned that there was momentous connection between students IQ and their academic performance. Similarly, both genders seem to perform equally in another research. Male and female students achieved similarly glowing in a blended erudition atmosphere enterprise (Mugenyi & Chang, 2016). Studies also show that when men are in any groups or school, they're most likely observing to form novel associations, while women are extra engrossed on nourishing prevailing ones (Komalsingh & Igor, 2017). Thus, students need to be encouraged to use their favorite learning style to boost their academic performance. The results of the analysis of Quilez-Robres et al (2021) on the relationship between IQ and academic achievement indicated a statistically significant correlation. The failure of almost all educational initiatives can usually be traced to the additional burden placed on the teacher. Teachers' burdens could be reduced if students have high IQ. Ilo and Onyejesi (2021) established that IQ and academic motivation significantly predicted academic performance accounting for 29.9% of variance in academic performance.

### **CONCLUSION AND RECOMMENDATIONS**

This study concluded that the academic accomplishment of secondary school students in English was average while their IQ was high. Also, IQ test had positive influence on the student academic performance. However, gender influence IQ test of students and their academic person differently. The academic achievement and IQ of male and female scholars did not differ significantly. There was a strong link between pupils' IQ and their academic success.

Constructed on the discoveries and conclusion of the study, the ensuing endorsements were hereby made;

- The educational authorities and the school system should encourage students with high IQ, this could enhance students learning.
- There is urgent need for government and state holders to provide grants and prizes for students with high IQ in the schools to facilitate teaching and learning process.
- There is immediate need for ministry of education to organize seminars, conferences and workshops to engage students' IQ and how it influences their academic performance.
- There is a need to bond the breach among masculine and feminine learners' IQ to level up with the gender differences.

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