VERBAL REASONING ABILITY AS PREDICTOR OF ACADEMIC PERFORMANCE IN ENGLISH LANGUAGE AMONG SENIOR SECONDARY SCHOOL STUDENTS IN KATSINA ZONAL EDUCATION QUALITY ASSURANCE, KATSINA STATE, NIGERIA

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Abstract

The study investigated the influence of verbal reasoning ability as predictor of academic performance in english language among senior secondary school students in katsina zonal education quality assurance, katsina state, Nigeria. Four research Questions and four Null hypotheses were tested . A descriptive survey research design was adopted for the study and a simple random sampling technique was used to select 378 respondents from the population of 15,478. Nonverbal reasoning test was adopted and administered. The reliability was established during pilot study as .975. The Students scores on English in the qualifying examination (2019) were used as their academic performance in the study. Data collected were analyzed using simple linear regression and t-test for independent sample. Research findings showed that verbal reasoning is a good predictor of students academic performance in English language. It also shows that female students performed better than the male students. Base on the findings; it was recommended that Students with low level of Intelligence should cultivate the habit of rehearsing and practicing many times as this will help in improving their level of Intelligence. The findings also recommended that students should boost their Intelligence through wider reading, writing and concentration so as to improve their academic performance.

Keywords: Intelligence, Verbal Reasoning, Academic Performance, Zonal Quality Assuarance.

Introduction

Education is a means of bringing about meaningful development in our society, schools and vocational training centers. For any individual to grow as a functional member of the society there is need for a standard way of training and full knowledge of the material to be learned. This brings us to the effort of curriculum planners, government, educational administrators as well as teachers in realizing the goals of teaching and learning. In a school setting you may find fast and slow students or learners, some display high intelligence while some display low intelligence. Some students display creative abilities under an enabling environment which others cannot. Some may have high academic achievement while others have low. Intelligence is an abstract construct or conceptualization of many different abilities and ways of thinking and believing. More also Wechsler (2002) view intelligence as the aggregate capacity of the

individual to act purposefully, think rationally and deal effectively with his environment. A person's education has become an indicator of his status in society. Education is linked to the life changes, income, and well-being whereas the scores in examination decide the student's level of intelligence (Lewis, 2002).

Verbal reasoning can be defined as the ability to understand and comprehend concepts expressed through language, think constructively and apply logic to solve problems. Verbal reasoning goes beyond recognizing vocabulary or language fluency to how we understand, reason, and engage with written and verbal language. As far as intelligence is concerned, males and females appear to be equal. The differences are related to specific abilities or specific traits. Males on an average superiority over females in the ability to reason and to detect similarities in certain aspect of general information. Girls on an average show some superiority in memory, language and aesthetic comparisons, (Marsh & Ackerman, 2000).

Academic Performance is a major issue among students, teachers, parents, school administrators and the Nigerian society at large. Attempts have been made by researchers to unravel the complexities and intricacies surrounding Academic Performance. Psychologists have put forward a lot of reasons why the disparities in Academic Performance exist among students. A lot of attentions have been paid to external factors such as type of school, teaching method, school location, instructional material, teachers experience amongst other factors (WAEC, 2005).

In our society, academic performance is considered as a key criterion to judge one's total personality and capacity. Hence academic achievement occupies a very important place in education as well as in the learning process. Studies repeatedly show that the performance on intelligence test is correlated with school achievement (Sattler, Brody, &Gustafsson 2005). The significance of the research will be of benefit to the teachers, parents, students, psychologist, counsellors, administrators, curriculum planners, government for their role in developing student's intelligence and personality traits and its importance in improving Academic Performance. The study may also raise learners awareness regarding their personality characteristics and to develop better understanding of the learning environment.

Statement of the Problem

The problem of poor academic performance of students due to low intelligence is one of the most challenging problems that face the students, teachers, parents, administrators as well as community and school members. This problem has many causes and it has educational, social, cultural and psychological dimensions. However, the student's low or poor Academic Performance in the examination can be defined; Low or weakness of the student's mark under the normal average in a study subject level as a result of variety of reasons, including those related to the student himself, or those related to family, social and academic environment (Wali, 2017). Verbal reasoning skills which is an aspect of intlligence, provide an assessment of an individual's ability to think reason and solve problems in different ways. Thus, the intend to find out the of Verbal reasoning ability on academic performance in English Language

Research Questions

1.   What is the Influence of Verbal reasoning on the Academic Performance in English Language of Senior Secondary School Students in Katsina Zonal Education Quality Assurance?
2.   What is the difference in Verbal reasoning between Male and Female of Senior Secondary School Students in Katsina Zonal Education Quality Assurance?
3.   What is the difference in academic performance between Male and Female of Senior Secondary School Students in Katsina Zonal Education Quality Assurance?

Research Hypotheses

1. There is no Significant Influence of Verbal reasoning on the Academic Performance in English Language of Senior Secondary School Students in Katsina Zonal Education Quality Assurance.
2. There is no significant difference of Verbal reasoning between Male and Female Senior secondary school students in Katsina Zonal Education Quality Assurance.
3. There is no significant difference in academic performance between Male and Female Senior secondary school students in Katsina Zonal Education Quality Assurance.

Research Methodology

This study employed descriptive survey research design. This design is considered suitable for this study because the variables (Intelligence) is already existing in the population of interest. it cannot be manipulated. According to Crider (2012) any study where variable cannot be manipulated or involving the use of questionnaire to solicit response from a defined population is considered as survey research design.

Area of the Study

The study was carried out in Katsina zonal education quality assuarance of Katsina Local Government Area in Katsina State, Nigeria. Katsina local area is a capital of katsina state which is located 260km (160mi) east of of the city Sokoto caliphate and 135kn (84mi) northwest of kano, close to the border Niger republic. In 2016, the estimate population of katsina local government was 492,000.

Population of the Study

The population of this study consists of 25 public Senior Secondary Schools and 15,478 SS II students, in Katsina Zonal Education Quality Assurance. The education zone comprises of three (3) Local government areas namely: Katsina, Jibia, and Kaita Local government Areas.

Table 1 Population of the Study

| SCHOOLS | GENDER | | |
S/N Schools in Katsina L.G.A	Male	Female	Total
1. Government College Katsina (senior) Day wing	1021	650	1671
2. Katsina College Katsina (senior)	496	690	1186
3. Sir Usman Nagogo College of Arabic & Islamic studies	958	204	1162
4. Government Secondary School K/yandaka, Katsina	1105	1400	2505
5. Government Pilot Secondary School Kofar sauri Katsina	435	300	735
6. Government Secondary School Kambarawa, Katsina	527	347	874
7. Government Secondary School Kofar kaura, Katsina	599	564	1163
8. Government Girls College Katsina	0	780	780
9. Dikko College Katsina	545	0	545
10. Government Secondary School Dutsen safe	143	274	417
11. Government School for the Blind Katsina	114	116	230
12. Family Support Program School Katsina	79	61	140
Schools in Jibia L.G.A			
13. Government Girls Unity Jibia	0	158	158

14. Government Day Secondary School Jibia	440	596	1036	
15. Government Secondary School Daddara	49		22	71
16. Government Secondary School Magamar Jibia	319		169	488
17. Government Secondary School Gangara	102		151	253
18. Government Secondary School Shimfida	35		10	45
19. Government Secondary School Natsinta	351		158	509
Schools in Kaita L.G.A				
20. Government Secondary School Kaita	166		198	364
21. Government Secondary School Yan'daki	225		253	478
22. Government Secondary School Dutsen Safe Kaita	73		71	144
23. Sabitu Muhammad Yahaya Secondary School Jifatu	44		34	78
24. Government Secondary School Dan'kaba	129		43	172
25. Government Secondary School Dankama	170		107	277
Total	**8,122**		**7,356**	**15,478**

Source: Katsina Zonal Education Quality Assuarance

Sample and Sampling technique

This sample size was determine using research advisor (2006) table of determining sample size Multistage sampling technique was used to select a fair sample for the study. At first a cluster sampling technique was adopted, adhering to the three (3) clusters of the zone (Katsina, Kaita and Jibia). Using simple random sampling technique (by pick from hat method) ten (10) schools were randomly selected, five (5) schools from Katsina, three (3) from Jibia and two (2) from Kaita Local Government Areas. All the selection was done using simple random sampling technique. Proportionate sampling technique was used to determine the actual size to each school.

Table 2: Sample Size

S/N	Name of Schools	No. of Students	Sample Size	Male	Female	Total
1.	G.D.S.S Kofar Yan'daka	2505	113	63	50	113
2.	G.C.K (senior) Day wing	1671	75	40	35	75
3.	G.D.S.S K/Kaura Katsina	1163	52	27	25	52

4.	G.S.S.S Pilot K/sauri	735	33	16	17	33
5.	G.S.S.S Dutsin-Safe	417	19	10	9	19
6.	G.D.S.S Magamar-Jibia	488	22	12	10	22
7.	G.S.S.S Natsinta, Jibia	509	23	13	10	23
8.	G.S.S.S Daddara, Jibia	71	3	2	1	3
9.	G.S.S.S Yandaki	478	22	12	10	22
10.	G.S.S.S Kaita	364	16	10	6	16
Total		**8,401**	**378**	**205**	**173**	**378**

Instrumentation

The instrument adopted is Non–verbal reasoning test AH4 part II, is an instrument developed by Alice Heim cited in Aliyu (2016), The instrument contains 65 items in an objective test was given while the respondent tick or shade the appropriate options. The highest mark to be scored is 65 and the lowest is 1.

The students' scores on English Language in the qualifying examinations, 2019 session were used as their Academic Performance in the study. Both face and content validity were used to validate the Instruments. The reliability of the instrument (Non-verbal Reasoning Test) were verified using
Cronbach's alpha method of establishing internal consistency. The Cronbach's alpha reliability coefficient of Non-verbal Reasoning Test was found to be 0.975.

Results

H0₁: There is no significant influence of Verbal reasoning on academic performance of Senior Secondary School Students in Katsina Zonal Education Quality Assurance

Table 3: Linear Regression Showing the influence of Verbal Reasoning on th Academic Performance of Senior Secondary School Students in Katsina Zonal Education Quality Assurance

Model		Sum of Squares	Df	Mean Square	F	pvalue	Remark
1	Regress ion	161.095	1	161.095	17.661	.000	*Sig.
	Residua l	3283.778	360	9.122			
	Total	**3444.873**	**361**				

*Sig = Significant at 0.05

In table 3, the p-value (0.00) is lower than the alpha value of 0.05. This means that, Verbal reasoning has significant influence on their academic performance. Hence, the null hypothesis which states that there is no significant influence of Verbal reasoning on academic performance of Senior Secondary School Students in Katsina Zonal Education Quality Assurance is therefore rejected.

H0₂: There is no significant difference of verbal reasoning of male and female senior secondary school students in Katsina Zonal Education Quality Assurance.

Table 4: Independent t-test of Difference in Verbal Reasoning between Male and Female Senior Secondary School Students in Katsina Zonal Education Quality Assurance

	Gender	N	Mean	Std. Deviation	Mean Diff.	Df	t	p-value	Remark
Intelli gence	Female	166	28.92	10.80	4.47	359	3.991	.000	*Sig.
	Male	195	24.45	10.43					

*Sig. = Significant at 0.05

In table 4, the male students had a mean Intelligence score of 24.45 and standard deviation of 10.43 while the female students had a mean Intelligence score of 28.92 and standard deviation of 10.80. The mean Intelligence difference observed between the groups of students is 4.47. There is significant difference of Intelligence between the male and female students ($t_{359} = 3.991$; $p<0.05$). This means that, the observed difference in Intelligence between the male and female students did not occurred by chance. As such, the female students are more Intelligent than the male students. Hence, the null hypothesis which states that there is no significant difference of Intelligence of male and female senior secondary school students in Katsina Zonal Education Quality Assurance is rejected.

H0₃: There is no significant difference in Academic performance between male and female senior secondary school students in Katsina Zonal Education Quality Assurance.

Table 5: Independent t-test of Difference of Academic Performance Between Male and Female Senior Secondary School Students in Katsina Zonal Education Quality Assurance

DV	Gender	N	Mean	SD	MD	DF	t-value	p-value	Remark
Academic Performance	Female	166	58.68	8.25					
					5.43	359	2.452	.002	*Sig.
	Male	195	53.25	8.21					

In table 5, the male students had mean Academic performance of 58.68 and standard deviation of 8.25

while the female students had mean Academic performance of 53.25 and standard deviation of 8.21. The mean Academic performance difference observed between the groups of students is 5.43. The independent t-test for significant difference shows that, there is significant difference of academic performance between the male and female students ($t_{359} = 2.452$; $p<0.05$) in favour of female students. As such, the female students have significant higher academic performance than the male students. The null hypothesis which states that there is no significant difference of academic performance between male and female senior secondary school students in Katsina Zonal Education Quality Assurance is therefore rejected.

Discussion of the Findings

The result of the first finding shows that there is significant influence of Intelligence on academic performance among senior secondary school students. This finding is supported by Ritu and Azimmuddin (2013), their study examine the influence of Intelligence and gender on academic achievement of secondary school students in Lucknow city. The findings of the study revealed that there is significant influence of Intelligence on academic achievement where as gender has not significantly influenced the academic achievement. Also Bakari and Musa (2013), in their study which investigated the relationship between Intelligence and academic performance of junior High School (JHS) students in Ghana. The result showed a positive relationship between Intelligence and academic performance of students. This finding is also supported by Ogundokun and Adeyemo (2010), their study examine the moderating influence of Intelligence, age and academic motivation on academic achievement of senior secondary school students. Their findings of the study revealed that Intelligence, age and academic motivation were potent predictors mildly associated to academic achievement. The finding of the study also contradicted with the findings of Idoko, (2018) who investigated the influence of academic selfconcept and Intelligence on academic performance among senior secondary school students in Kankia Education Zone, Katsina State, the result of the study revealed that there is no significant influence of Intelligence on academic performance.

The second hypothesis indicates that; there is significant difference between male and female student's Intelligence. This finding is supported by Funharm and Feyter, (2013), where their findings supported gender difference in specific cognitive abilities: some support females and some support males. Sophie (2006), investigated whether sex difference observed on the subjects of the Intelligence test were attributable to sex difference in general Intelligence. Males out performed the females on 3 out of the 10 subtest (Information, Arithmetic and Matrix reasoning), while females performance was better than males only on 1 subtest. Researchers have also examined gender differences in Intelligence in 20 Countries. Studies from China through Germany and Scotland have shown males give significantly and higher estimates than females for general over Intelligence (Adrian and Buchaman, 2005). Also Habibollah (2012), in his study examine Intelligence and academic achievement: an investigation of gender differences. Their findings of the study revealed that there was no significant difference of male and female students on Intelligence. Rammstedt and Rammsayer, (2000) have investigated on 105 German students, and concluded that male self-estimate were significantly higher for logical mathematical and spatial Intelligence, while female estimates were significantly higher for musical and interpersonal Intelligences. This finding is contrary to the findings of Ritu and Azimmuddin, (2013). Their study examine the Influence o Intelligence and gender on academic achievement of secondary school students of Lucknow city. The findings of the study revealed that there is no significant difference between male and female students.

Recommendations

Base on the findings of this study, the following recommendations were made;

1.   Students with low level of Intelligence should cultivate the habit of rehearsing and practicing many times as this will help in improving their level of Intelligence.

2.   A verbal reasoning skill which is a vital aspect of academic life should be boosted among male and female students by teachers.

3.   Gender Education programs/project should be prioritized and promoted to attain gender equality whereby male students can be given equal chances as females' counterpart in cognitive abilities.

4.   The action and reaction of teachers, parent and significant others toward students should encourage, suggest, assure and reinforce the students that are academically capable and competent.

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