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The Influence of Verbal Ability on the Writing Achievement of Undergraduates of Federal University of Technology Owerri, Nigeria



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Abstract

This study investigated the extent to which verbal ability would influence the writing achievement of fresh undergraduate students of Federal University of Technology Owerri, Nigeria. The pretest, posttest, control group, quasi experimental design was employed for the study. A sample of 425 students from a population of 5300 newly admitted undergraduates from four different faculties and departments of the university were the study participants. Three departments were used as the experimental groups while one was the control. These faculties and departments were selected through simple random sampling. A writing achievement test and a verbal ability test were the instruments used for the study. The data were collected from the writing scores and verbal test scores of the participants and analysed using mean and standard deviation, as well as Analysis of Covariance (ANCOVA). From the results of the study, it was found that verbal ability level did not significantly affect the writing achievement of participants. The findings indicate that students who apply themselves to their studies can excel in their writing irrespective of their level of verbal ability. It was therefore recommended that teachers in the different educational institutions should encourage their students to become proficient in the different areas of language covered by the verbal ability tests as this would help the students excel in their tertiary courses, while on the other hand, students should apply themselves to their studies as hard work and not verbal ability level is a key determinant determine in performance and achievement in their English language and other courses.

Keywords: Verbal ability; Influence; Achievement test; Writing.

1. Introduction

The capacity of students to manipulate words both in speaking and writing has been emphasized by scholars as contributing greatly to their excelling or otherwise in their areas of specialization. Hence verbal ability has been seen to be critical to the academic achievement of students, especially undergraduates. Many students are said to be weak in their ability to understand and manipulate words in the English language, especially in writing. Hence, there has been interest in scholarship aimed at trying to find out the basic ability of students in writing, by measuring their verbal ability. This is because researchers consider the concept of verbal ability relevant to the academic progress of students since it is reasonable to presume that students who are unable to understand and use words effectively will not be able to write or read effectively.

Andrew *et al.* (2005), depict verbal ability to be the capacity that a person has to put his/her thoughts into oral and written words; ability to know and use a great variety of words to express different shades of meaning and to arrange these words in meaningful ways. Verbal ability shows a person's capacity to speak and write well and can be used as a measure of intelligence. Verbal ability shows the level of linguistic capability of a learner and will therefore determine the learner's ability to write well (Adegbite and Alabi, 2007). Nathan and Abernathy (2012) confirm that there is a relationship between verbal ability and attainment in writing of primary school pupils with learning disability. Thus verbal ability constitutes a device for evaluating students' writing and reading competences and as such may be used to classify subjects into ability groups. Since the level of ability may affect students' performance in academic tasks or teachers and other workers in their professional tasks, tests of verbal aptitude may be necessary to measure academic ability in programmes of study.

2. Verbal Ability Test

This is a test used to measure the intelligence and academic ability of students and may be used to forecast the academic accomplishment of learners as well as their level of proficiency and use of language (Adegbite and Alabi, 2007). This is because it reveals the level at which students can reason through language and the ability of the individual student to read written language. Verbal ability helps assess students across the curriculum and thus, students who score high in verbal ability tests are deemed to be able to communicate effectively and perform better academically than those with low scores (Gambari *et al.*, 2014). Verbal ability tests are made up of questions on grammar, synonyms and antonyms, spelling, sentence completion, critical reasoning, logical arrangement of words and verbal inferences, claim and justification, and analogy. The verbal ability level of learners is ascertained through the use of verbal ability tests and has been found to affect their achievement in reading and writing.

Some scholars (Adegbite and Alabi, 2007) posit that students with high-level aptitude for using words will achieve better in reading and writing than those with not so high an aptitude. Others (Uchemadu and Ogunsola, 2016) find no connection between the verbal ability level of students and their performance and achievement in writing, especially in spelling. Yet others (Adodo and Agbayewa, 2011) aver that putting students in homogenous verbal ability groups would enhance their writing, especially in science courses, than putting them in heterogenous groups. Thus verbal ability could take up a crucial role in the academic achievement of learners, especially undergraduates. The influence that verbal ability could exert on the writing achievement of first year undergraduate students was therefore investigated in this study.

3. Hypothesis/ Research Question

Two hypotheses and one research question were used to guide the research.

1. **H₀₁**: There is no significant main effect of verbal ability on writing achievement of students.
2. **RQ**: To what extent did the writing achievement of high, average and low verbal ability subjects differ?
3. **H₀₂**: There is no significant interactional effect of treatment and verbal ability on students' achievement in writing.

4. Previous Literature

Verbal ability is a factor which scholars have considered necessary for proficiency in literacy and other fields of endeavour. Though studies on it have not been too many, those available confirm the above position. For instance, Olatoye and Aderogba (2011) found in their study of secondary school (SS II) students in Ogun State of Nigeria that verbal ability was an important issue in participants' attainments in aptitude tests because individuals who possessed the capacity to use words improved significantly in the tests than those who did not.

Adodo and Agbayewa (2011), in a quasi-experimental study with 60 junior secondary school students purposively selected, investigated whether participants would achieve better in science when they are grouped with those who have similar or dissimilar verbal ability as themselves. Students were allotted to three verbal ability groups: high, average and low. To ascertain if verbal ability affected the subjects, 10 students from each ability group were purposively chosen and a homogenous group was placed in one school while a heterogeneous group was placed in the other school. Data was analysed using mean, standard deviation, and t-test. Results showed that homogenous verbal ability grouping enhanced students' learning.

Muodumogu and Unwaha (2013), ascertained the verbal ability groups of their respondents (senior secondary school students) through the use of the Australian Council for Educational Research (ACER) standardized test. The results indicate that medium and low ability subjects performed better than those with high ability. Also the distinction between the high and low groups in writing ability was significant.

Jele *et al.* (2015), investigated the verbal ability and use of language skills of students studying for a four year Bachelor of Science course in a university in South Africa. In order to identify the aspects of language and verbal reasoning which the students found challenging, the researchers developed a 14 question document which tested the students understanding and use of non-specialised English words in chemistry. A questionnaire was also used to elicit verbal ability level of students. Data were analysed with percentages. The findings show that many of the students had poor verbal and language skills which made learning challenging for them in their chosen course. They concluded that poor verbal ability and weak English language skills negatively affected the students' academic performance.

It is pertinent to note that, although the literature reviewed so far indicate the influence of verbal ability on the achievement of students, none of the studies reviewed dealt with undergraduate students of Nigerian universities. Most of the studies investigated secondary school students. The only one that dealt with university students was

carried out in South Africa. This present study therefore explored whether verbal ability would have any relationship with writing achievement of fresh Nigerian university learners who are studying science and technology courses.

5. Theoretical Background

The study uses the constructivist theory (Bruner, 1966) which assumes that students bring a repertoire of knowledge and experience into the learning situation which enables them to construct their own meaning/knowledge or carry out tasks and assignments. Instead of being told what to believe, what to do, or how to do it, the teacher guides and supports the individual learner based on the learner's degree of accomplishment. The relevance of the theory is predicated on the purpose of the paper which is to investigate how a certain level of ability (verbal ability) would influence students' performance in a fresh task (writing).

6. Methodology

This study made use of the pretest, posttest, control group quasi experimental design. Four hundred and twenty-five (425) newly admitted first year students from four departments in four different faculties of a university of technology, South East Nigeria, out of a population of five thousand three hundred (5300) admitted in the year, constituted the sample for the study. The faculties and their departments were chosen by simple random sampling. Three departments constituted the experimental groups while one department was used as the control. The three experimental groups were treated with three different instructional methods while the control group received only conventional instruction. Participants were all non first language speakers of English who use it as their second language and are assumed to be on the same level of competence in writing and reading because they had all been taught English for 12 years: (elementary school - 6 years, and college - 6 years). All participants as well as other students were taught the Use of English course with the university-approved course outline.

7. Research Instruments

A reading/writing ability test was used by the study. This was made up of passages taken from past Joint Admission and Matriculations Board (JAMB) examinations question papers which the students read, and then wrote on, based on prompts given at the end of the passages.

This study adopted the verbal ability test developed by Fola-Adebayo (2014). The test was originally targeted at first year Nigerian university undergraduates in two universities of technology in Nigeria. The reliability index of the 100-item test was $\alpha = 0.78$ and the average item difficulty was .47. This test therefore was used for the same type of audience (first year undergraduate university of technology students) for which it was originally developed. Each item carries one mark. The scores were converted to percentages. Those who scored 60% and above were classified as high ability students while those who scored 50 - 59% were assumed to be average verbal ability students. The low verbal ability students were those who scored 49% and below. Thus the subjects were grouped as high ability (60% and above), average ability (50% - 59%) and low ability (49% and below). Performance in the test was used as a measure to describe the students as high, average or low.

A pretest and verbal ability test were administered on all the four groups before the commencement of teaching the experimental groups using three different instructional methods. Based on the performance of the students in this initial verbal ability test, they were grouped into High Verbal Ability (HVA), Average Verbal Ability (AVA) and Low Verbal Ability (LVA) groups.

8. Data Analysis and Discussion

At the end of treatment on the experimental subjects, the same verbal ability test was administered on all the groups once again. This was to make it possible to compare with the initial verbal ability test and to know whether the treatment affected the level of difference between the various verbal ability groups. It also made it possible to see if verbal ability would interact with other variables in the study to affect achievement. The data are presented and discussed below.

Table-1. Pre treatment mean scores of subjects in different verbal ability levels in the various groups

Treatment	Verbal Ability	N	Pre-Test	
			Mean	Std
Exp. Grp. 1	Low (L)	45	46.17	5.13
	Average (A)	51	52.28	4.44
	High (H)	27	58.66	4.16
Exp. Grp. 2	Low (L)	30	45.16	4.44
	Average (A)	43	53.14	4.84
	High (H)	21	60.29	4.55
Exp. Grp. 3	Low (L)	23	45.35	5.26
	Average (A)	39	51.78	6.49
	High (H)	21	58.83	4.80
CG	Low (L)	33	44.85	6.65
	Average (A)	65	51.69	8.14
	High (H)	27	57.66	5.59

Table 1 shows that within the different study groups, students in the average ability level were the highest in number (41% in Experimental Group 1, 46% in Experimental Group 2, 47% in Experimental Group 3 and 52% in the Control group), followed by those in the low ability group (Exp. Grp.1 : 37%, Exp. Grp. 2 : 32%, Exp. Grp. 3 : 28% and CG : 26%). The high ability students were the fewest in number (Exp. Grp. 1 : 22%, Exp. Grp. 2 : 22%, Exp. Grp. 3 : 25% and CG : 22%). A similar pattern of aptitude is observed across the groups suggesting that the groups are about homogeneous entities, none being superior to the other.

1. H_{01} : There is no significant main effect of verbal ability on writing achievement of students.

The verbal ability test was administered on all the subjects at the pre- and post tests to ascertain their language ability prior to treatment and to find out if verbal ability level would have any noticeable effect on the achievement of participants.

Table-2. Analysis of Covariance (ANCOVA) of Posttest achievement by Treatment and Verbal Ability

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	15540.575	24	647.524	11.972	0.000	0.418
Intercept	15407.921	1	15407.921	284.868	0.000	0.416
Pre Writing	234.491	1	234.491	4.335	0.038	0.011
Treatment	6781.144	3	2260.381	41.791	0.000*	0.239
Verbal ability	15.445	2	7.722	0.143	0.867	0.001
Treatment x Verbal ability	217.096	6	36.183	0.669	0.675	0.010
Error	21635.190	400	54.088			
Total	2082741.000	425				
Corrected Total	37175.765	424				
R Squared = 0.42 (Adjusted R Squared = 0.38) * denotes significant $p < 0.05$						

Table 2 above indicates that verbal ability had no appreciable effect on the achievement in writing by students ($F_{(2, 400)} = 0.14$; $p > 0.05$, partial $\eta^2 = 0.00$). Thus, the hypothesis was not rejected.

The Bonferroni pairwise comparison (Table 3) shows that there was no significant difference between the mean scores of the different participants in the different ability groups. This suggests that a combination of new knowledge from the treatments and/or peers, personal effort and application to duty may have helped the students or that they may have been among those who had high class attendance and as such were able to perform comparable to those in the high ability group; or there could be an unknown reason for this. Thus it may be tenable to assume that when students gain knowledge and apply themselves to their studies, any disadvantage they may have due to their verbal ability level can be overcome.

Table-3. Difference between the means of participants in various verbal ability groups

Pairwise Comparisons						
Dependent Variable: Post Writing						
(I) Verbal ability	(J) Verbal ability	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
Low	Average	.557	1.248	1.000	-2.443	3.556
	High	.781	1.524	1.000	-2.883	4.445
Average	Low	-.557	1.248	1.000	-3.556	2.443
	High	.224	1.195	1.000	-2.648	3.096
High	Low	-.781	1.524	1.000	-4.445	2.883
	Average	-.224	1.195	1.000	-3.096	2.648
Based on estimated marginal means						
a. Adjustment for multiple comparisons: Bonferroni.						

2. RQ : To what extent did the writing achievement of high, average and low verbal ability subjects differ?

The verbal ability test was administered on all the subjects at the pre- and post tests. This was to ascertain whether treatment would affect the level of difference between the ability groups in any considerable manner.

Table-4. Analysis showing the difference between writing achievement of high, average and low verbal ability subjects

			Pre-Test		Post-Test	
Treatment	Verbal Ability	N	Mean	Std	Mean	Std
Exp. Grp. 1	Low (L)	45	46.17	5.13	73.66	8.55
	Average (A)	51	52.28	4.44	71.65	7.53
	High (H)	27	58.66	4.16	71.72	7.94
Exp. Grp. 2	Low (L)	30	45.16	4.44	71.86	7.77
	Average (A)	43	53.14	4.84	70.54	8.24
	High (H)	21	60.29	4.55	69.32	8.77
Exp. Grp. 3	Low (L)	23	45.35	5.26	77.12	9.09
	Average (A)	39	51.78	6.49	77.41	10.99
	High (H)	21	58.83	4.80	75.05	8.44
CG	Low (L)	33	44.85	6.65	58.12	15.52
	Average (A)	65	51.69	8.14	58.94	12.71
	High (H)	27	57.66	5.59	61.55	8.94

Table 4 displays the difference in the achievement of the various ability groups. The performance of the subjects in verbal ability test after treatment did not follow the same pattern as their pre treatment performance. Unexpectedly, the low verbal ability subjects in the three experimental groups achieved greater mean scores than the high and average verbal ability levels though the difference between the mean scores of the different ability levels was only marginal. It was only in the Control Group that performance trend in the post test was consistent with that of the pretest. The performance of the low verbal ability level students in the experimental groups could be due to a mix of various activities such as emulating stronger classmates, high attendance of classes, plus the treatment administered, which altogether could have made the weaker subjects able to bridge the deficiencies they had and could now make them able to compete more favourably with others who had a better background in the their primary and secondary schools. Thus one can conclude that the initial verbal ability levels of the students did not determine their achievement in writing because other indices such as class attendance, new knowledge gained and treatment received may have added to their achievement in the post test. Thus this finding supports previous study of Nathan and Abernathy, 2012 which noticed that verbal ability did not affect the achievement of non- learning impaired subjects in their writing.

3. **H₀₂: There is no significant effect of treatment and verbal ability on the achievement of subjects in writing.**

Data from subjects' scores were analysed using ANCOVA to find out if the mix of treatment and verbal ability would have any bearing on the achievement of subjects in writing. This is presented in Table 5.

Table-5. ANCOVA analysis of the interaction effect of treatment and verbal ability on subjects' achievement in writing

Treatment * Verbal ability					
Dependent Variable: Post Writing					
Treatment	Verbal ability	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Exp. Grp. 1	Low	73.659 ^a	1.275	71.152	76.166
	Average	71.647 ^a	1.055	69.573	73.722
	High	71.720 ^a	1.528	68.716	74.724
Exp. Grp. 2	Low	71.858 ^a	1.418	69.069	74.647
	Average	70.535 ^a	1.256	68.067	73.004
	High	69.318 ^a	1.914	65.556	73.080
Exp. Grp. 3	Low	77.120 ^a	1.896	73.391	80.848
	Average	77.405 ^a	1.761	73.943	80.868
	High	75.045 ^a	1.841	71.426	78.664
Control Group (CG)	Low	58.121 ^a	2.702	52.809	63.433
	Average	58.942 ^a	1.576	55.844	62.041
	High	61.552 ^a	1.720	58.171	64.932

Table 2 and Table 5 show that the interface between treatment and verbal ability had no influence on the writing achievement of subjects. Table 2 indicates that there is no significant interaction effect of treatment and verbal ability on students' achievement in writing ($F_{(6, 400)} = 0.67$; $p > 0.05$, partial $\eta^2 = 0.01$). Hence, hypothesis 2 was not rejected. In other words, students' verbal ability did not interact with the treatment to influence their achievement in writing, which implies that students' improvement in writing was as a result of the treatments administered on them and not on their level of verbal ability; that is, the instructional methods positively affected their writing achievement. Hence the null hypothesis was accepted.

This result is consistent with the finding of Fola-Adebayo (2014) in which treatment and verbal ability had no significant interaction effect on the achievement of students.

9. Conclusion and Recommendation

Based on the analysis of the data above, it is evident that verbal ability level of students does not really determine their linguistic competence. It will be fair to conclude that students who really apply themselves to their studies will excel irrespective of their level of verbal expertise.

Therefore, students should be encouraged by their teachers and mentors to focus on their studies and not be weighed down by their level of verbal ability since they can remedy this and excel by applying themselves to their studies. It is also recommended that teachers in the primary and secondary levels of education should ensure that their students master the different areas of language that make up the verbal ability testing so that they can excel in their studies and be able to cope with the higher manipulation of words both in speaking, and especially in writing, demanded by the tertiary level of education.

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