

# Effect of Reciprocal Peer Tutoring Strategy on Computer Students' Achievement in Expository Essay Writing: Implication for School Counselling

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## Abstract

The study examined the effect of reciprocal peer tutoring strategy on computer students' achievement in expository essay writing in Nsukka Education Zone in South-East Nigeria. Pre test, post test none randomized quasi experimental design was employed. The sample for the study consisted 78 (32males and 46 females) students. The instrument for data collection was Expository Essay Writing Achievement Test (EEWAT). Data obtained were analyzed using Mean, Standard Deviation and Analysis of Covariance (ANCOVA). Result of the study showed that reciprocal peer tutoring strategy had a significant effect on students' achievement in expository essay writing. It equally showed that gender had an effect on students' achievement in expository essay writing. The result also showed a significant interaction effect of methods and gender on mean achievement scores of students in expository essay. It was therefore recommended among others, that reciprocal peer tutoring should be adopted as a teaching strategy for expository essay in technical colleges; that school counsellors, parents, schools and social institutions should provide equal socialization opportunities for both genders so that they will have equal achievement opportunities in school subjects.

**Keywords:** Reciprocal Peer Tutoring; Achievement; Gender; Expository Essay, School Counselling; Computer Student

## INTRODUCTION

Language is an interaction tool which human beings hold in common. It is the instrument through which people communicate with one another. Anyanwu (2002) points out that every society possesses a language that is used in exchanging views and thoughts. It is estimated that there are up to 513 languages in Nigeria that are mutually unintelligible, (Ogbuehi 2001; Yusuf 2005). The existence of these many apparently unrelated languages in Nigeria makes it imperative for the English language to be adopted as an official language. It is the language of Education, politics, law and business. Every school subject except the local languages is taught in English. In recognition of the important roles of English, the Federal Government of Nigeria in its National Policy on Education (2013) made the English language a compulsory subject in secondary education in Nigeria. The

objective of this policy is to equip every Nigerian child with the rubrics of this important language.

However, despite the objective of this policy, computer science students do not achieve well in English. Marja (2008) notes that students (including computer students) exhibit very narrow range of ability in the English language. Studies in Nigeria reported that students' achievement in the English language in external examinations conducted by the West African Examination Council (WAEC) from 2008 to 2012 has been very poor (Adewusi, 2013). According to the report, the percentages of candidates that obtained credit and above in English in the said examination in 2008, 2009, 2010, 2011 and 2012 were 23.5%, 25.99%, 24.94%, 30.70% and 20.04% respectively. Also, Yusuf and Yunusa (2016) equally reported that in 2014 and 2015 that the percentages of candidates that passed WAEC English examination were 29.27% and 38.68% respectively. This is an indication that students' failure rate in English language examination is high. Komolafe and Yara (2010) observed that students' poor achievement in English could be connected to their inability to write well. The West Africa Senior School Certificate Chief Examiners' Report (2008) indicated that the weakness observed in candidates' scripts were attributed to their inadequate exposure to writing skills among others factors. Computer science students in particular have very narrow exposure to writing skill.

The problems students encounter in writing could be traced to poor teaching method. Muodumogu and Unwaha (2013) lament that the conventional method of teaching writing has not given students much assistance and blamed the method as part of the reason for the students' poor achievement. The conventional approach pays more attention to the organization of ideas than the ideas themselves. It is concerned more on the product of the students and lays more emphasis on the students' ability to memorize and apply grammatical rules than discovering ideas and creating meanings. Hassan and Akhand (2010) point out that this method does not help students to effectively showcase their ability to effectively structure compositions in their answer scripts. Writing according to Obi-Okoye (2004) is one of the skills that are not amenable to memorization of set of rules, writing calls for development and application of composite skills. Every writing topic calls for its own skill. Expository essay has been noted as the most complex and the most frequently used essay (Parviz & Ali 2009). It cuts across many fields or disciplines; Science, Arts or Humanities. Textbooks, newspaper, magazines, Journal Articles, Encyclopedias, Instructional

manuals, Dissertation and Thesis are all products of expository essay. Obasikene, Odo, Okwor and Agbo (2005) observe that expository essay interweaves with narrative and descriptive element. Its objective is basically to provide explanation, information or direction or instruction on how to arrive at certain destination or point. No matter what one chooses to study, at one time or the other, he or she might be required to classify, illustrate, write a sequence, enumerate, compare and contrast, provide procedural description or interpret ideas in his or her area.

If that person does not know the rubrics of expository essay writing, he or she will be left with no other choice than to fail the task. It therefore implies that one must master expository essay writing skill in order to excel in his or her field. Good knowledge of expository essay writing skill enhances achievement in other types of writing. Even in schools, students are required to write assignments, tests and examinations as means for their teachers to grade their progress. Expository essay is the most important writing in schools and a good knowledge of it enhances achievement in every other type of writing. Considering the importance of expository essay writing skills to students vis-à-vis its complex structure, efforts should therefore be geared towards teaching the skill using a teaching strategy that can foster development and application of composite skills in the students that will equip them for achievement in expository essay and in every other form of writing.

Reciprocal peer tutoring has been found to be promoting students' achievement in school subjects. Its effectiveness has been established in Building Technology ( Oviawe, Ezeji & Uwamieye 2015), Mathematics (Luzale, Luisito & Rosanna, 2009) Reading Comprehension(Nwosu, 2014). Reciprocal peer tutoring is a collaborative learning approach where a pair of students interacts and assists each other's learning strategy that requires learners to fulfill both tutor and tutee roles (Agoro & Akinsola, 2013; Griffin & Griffin 1995; Riggio, Fantuzzo, Connelly & Dimeff 1991; Al-Hassan, 2003). It may involve more than one-to-one relationship. Students function reciprocally as tutors and tutees thereby gaining from both preparation and instruction in which the tutors engage in and from instruction that tutees receive. Reciprocal peer tutoring increases students' academic achievement (Slavin 1991; Sherman 1991). This approach changes learning from private activity to social activity by making learners take responsibility of their own learning and that of others. Hashey and Connors (2003) observe that reciprocal peer tutoring drastically improves the quality of classroom discussion since all computer students are able and expected to participate and provide input and thought into the process. This study seeks to investigate the effect of this strategy on computer science students' achievement in expository essay in Nigeria

Apart from the teaching strategy, students' achievements in subjects and skills have been given some gender interpretations (Umoh & Ude 2013; Akabogu & Ajiwoju, 2015). Gender refers to those socially constructed roles, attitudes, attributes, values and responsibilities invested on individuals on the basis of their being born either male or

female. Deasley (2005) laments that the differential treatments given to males and females affect several facets of their lives, including school performances and achievements. In developing countries, the boy child is often socialized to be competitive and aggressive, and therefore is expected by the society to excel in areas of school work such as Science and Mathematics while girls are taught to be passive and soft and are not expected to excel in challenging subjects, (Kolawale, 2008). Certain vocations like Engineering, Carpentry, Medicine and Computer science are traditionally regarded as males' vocation while vocations like teaching, nursing and catering are females' vocation. However, a study conducted by Haier, Jung, Yeo, Head and Alkire (2005) on the relationship between structural brain variation and general intelligence in men and women revealed that women show more white matter relating to intelligence than men. With reference to language learning and use there is a general belief that female are better than males in language. In support of this belief, Whitney (2006) stresses that female students outperform male students in almost all indices of achievement related to language skills. Maria (2013) conducted a study on differences of girls' and boys' achievement in Reading Comprehension in English and revealed that girls got better achievement outcome than boys. On the contrary, in study conducted by Akabogu and Ajiwoju (2015) on effect of gender and location on students' achievement in English vocabulary, it was revealed that male students had higher achievement scores than their male counterparts. On the other hand, Muodumogu and Unwaha (2013) found no significant difference in achievement scores of boys and girls in essay writing. From the discussion so far, it could be observed that the influence of gender on students' achievement in language is a very controversial one. However, the influence of gender on achievement scores of male and female computer students in expository essay writing remains unknown to the researchers. This study also seeks to establish the influence of gender on achievement of male and female computer students in expository essay writing in Nigeria.

## STATEMENT OF PROBLEM

The English language no doubt plays important functions in Nigeria. Despite its functions, students' achievement in the subject is adjudged to be very poor. Reports from WAEC and other researchers have provided evidence as to the steady poor achievement of students in English. The poor achievements of students were attributed among other factors to students' weakness in writing. The background provided evidence that expository essay cuts across every other type of writing. It implies therefore that the mastery of the rubrics of expository essay writing enhances achievement in every other type of writing.

However, the conventional method of teaching writing as is evident in the background does not enhance students' achievement as it does not foster creative thinking among them. It therefore becomes important to explore a strategy that has improved students' achievement in other skills. In recent

times, no study known to the researchers have been conducted in Nsukka Education Zone of Enugu State in South-East Nigeria as to establish the effect of reciprocal peer tutoring in expository essay. Also, how gender will affect male and female computer students' achievement in expository essay in the study area is yet to be determined. Therefore, the study is set to determine the effect of reciprocal peer tutoring on computer students' achievement in expository essay and its implication to counseling.

## METHODOLOGY

In order to accomplish this study, a quasi-experimental design was adopted. Specifically, pre-test post test non randomized control group design was adopted. The study was conducted in Nsukka Education Zone of Enugu State in South-East Nigeria. A sample of seventy eight (78) students was used for the study. Purposive sampling technique was used to select two co-educational technical secondary schools from the zone. Two intact classes that offer computer science were randomly selected and subjected to treatments using conventional teaching method and reciprocal peer tutoring strategy. The instrument for data collection was expository essay writing achievement test (EEWAT) adapted by the researchers from West African Examination Council (WAEC) question papers of 2013, 2014 and 2015. The achievement test was validated by three experts. The reliability of the instruments was determined by administering the questions to SS2 students in another zone who did not form part of the sample of this study. Kendall Coefficient of Concordance was used to estimate the scorer reliability of EEWAT because the scoring was done by two scorers. Thus, the scorer reliability index of 0.69 was obtained. The researchers trained the English language teachers who served as research assistants on the procedure of treatment. The training included the purpose of the study, rehearsals on how the study would be conducted by the regular teachers of the school for the two classes, and the procedures of administering the instrument before and after the treatment. The teaching was carried out by the regular English language teachers to avoid any possible bias by the researchers. The treatment, however, lasted for four weeks. The data for this study were administered and collected by the regular English language teachers in the schools before and after the treatment. The research questions were analyzed using mean and standard deviation while the hypotheses were tested at 0.05 level of significance using analysis of covariance (ANCOVA).

## RESULTS

**Table 1:** Mean and standard deviation of achievement scores of students taught expository essay using reciprocal peer tutoring and conventional teaching method

Group	Pre-test			Post-test		
	N	Mean	SD	Mean	SD	Mean Gain
Reciprocal Tutoring	35	23.12	3.88	42.91	5.77	19.79
Conventional Teaching Method	43	22.69	3.43	31.18	2.47	8.49

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Table 1 shows that the students who were taught expository essay using reciprocal peer tutoring had mean achievement score of 42.91 with a standard deviation of 15.77 at the posttest against their pre-test mean achievement score of 23.12 and standard deviation of 3.88 while those who were taught using conventional lecture method had mean achievement score of 31.18 with a standard deviation of 2.47 at the posttest against their pre-test mean achievement score of 22.69 and standard deviation of 3.43. Mean gain scores of 19.79 and 8.49 for the two groups respectively imply that the students who were exposed to reciprocal peer tutoring had higher posttest mean achievement score than their counterpart who were exposed to conventional teaching method. However, the posttest standard deviations of 5.77 and 2.47 for the two groups respectively imply that the experimental group varied much in their individual achievement scores than the control group.

**Table 2:** Mean and standard deviation of achievement scores of male and female students in expository essay

Gender	Pre-test			Post-test		
	N	Mean	SD	Mean	SD	Mean Gain
Male	32	22.50	3.33	35.18	10.76	12.68
Female	46	23.57	3.75	37.32	13.07	13.75

Table 2 reveals that male students had post-test mean achievement score of 35.18 with a standard deviation of 10.76 against their pre-test mean achievement score of 22.50 with standard deviation of 3.33 while their female counterpart had post-test mean achievement score of 37.32 with a standard deviation of 13.07 against their pre-test mean achievement score of 23.57 and standard deviation of 3.75. Mean gain scores of 12.68 and 13.75 for the male and female students respectively may have indicated that female students had higher post-test achievement score than their male counterpart. The post-test standard deviations of 10.76 and 13.07 for the male and female students respectively show that female students varied much in their individual achievement scores than the male students.

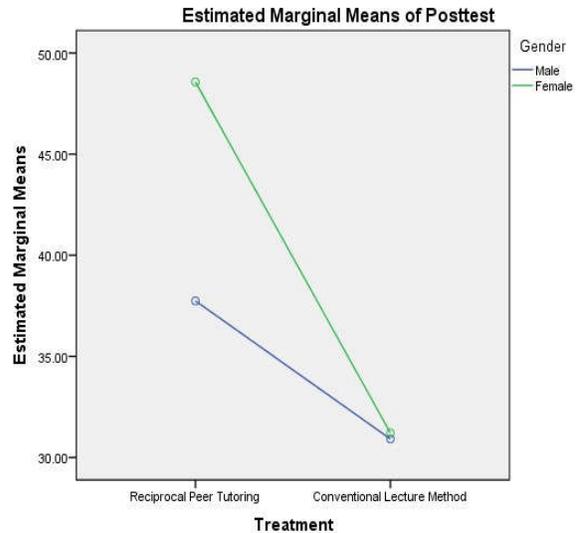
**Table 3:** Analysis of covariance of the effect of methods on students' achievement in expository essay

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	3747.795 <sup>a</sup>	4	936.949	8.972	.000	.330

Intercept	1125.078	1	1125.078	10.773	.002	.129
Pre-test	257.845	1	257.845	2.469	.120	.033
Treatment	2640.806	1	2640.806	25.287	.000	.752
Gender	536.979	1	536.979	5.142	.026	.066
Treatment * Gender	500.941	1	500.941	4.797	.032	.062
Error	7623.500	73	104.432			
Total	114995.000	78				
Corrected Total	11371.295	77				

a. R Squared = .330 (Adjusted R Squared = .293)

Table 3 shows that the calculated value of F (25.287) for the effect of reciprocal peer tutoring and conventional teaching method on students' achievement in expository essay had an associated probability value of 0.000. Since the probability value of 0.000 is less than the 0.05 level of significance ( $p < 0.05$ ), the null hypothesis was rejected. This implies that there is a significant difference in the mean achievement scores of students taught expository essay using reciprocal peer tutoring and those taught using conventional teaching method in favour of the students taught using reciprocal peer tutoring. Besides, the partial Eta Square value (effect size) of 0.752 shows that reciprocal peer tutoring had high effect on the achievement of students in expository essay. The result shows that the probability associated with the calculated value of F (5.142) for the influence of gender on students' achievement in expository essay is 0.026. Since the probability value of 0.026 is less than the 0.05 level of significance ( $p < 0.05$ ), the null hypothesis was rejected meaning that there is a significant difference in the mean achievement scores of male and female students in expository essay in favour of the female students. However, partial Eta Square value (effect size) of 0.066 shows that gender had very low influence on the achievement of students in expository essay. It also shows that the probability associated with the calculated value of F (4.797) for the interaction effect of methods and gender on students' achievement in expository essay is 0.032. Since the probability value of 0.032 is greater than the 0.05 level of significance ( $p < 0.05$ ), the null hypothesis was accepted meaning that there is a significant interaction effect of methods and gender on mean achievement scores of students in expository essay.



Covariates appearing in the model are evaluated at the following values: Pretest = 23.2621

**Figure 1:** Graph of the interaction effect of methods and gender on students' achievement in expository essay

Figure 1 shows that there is a linear interaction effect of methods and gender on students' achievement in expository essay. This means that the students' achievement in expository essay as a result of the exposure to the different treatment conditions is dependent on the gender of the students. However, partial Eta Square value (effect size) of 0.062 shows that the interaction effect of methods and gender on the achievement of students in expository essay is very low.

## DISCUSSION

The result of the study showed that reciprocal peer tutoring strategy had significant effect on computer students' achievement in expository essay. Those who were taught expository essay using reciprocal peer tutoring had higher achievement scores than their counterparts who were taught expository essay using conventional teaching method. The result agrees with the findings of Nwosu (2014), and Sayyed and MohammedReza (2011) which revealed that reciprocal peer tutoring strategy improves students' academic achievement. The results also revealed that there is a significant difference in the mean achievement scores of male and female students in expository essay writing. The mean achievement scores of the female students are significantly higher than that of their male counterparts. The result is in tandem with that of Ude and Umo (2013), and Gasva and Moyo (2014) which revealed that females achieved better than their male counterparts in languages. The result equally indicated that there was a significant interaction effect of methods and gender on mean achievement scores of students in expository essay. The implication is that school counsellors could expose male students to reading habit that may improve their academic achievement. Reciprocal peer tutoring should

be adopted as an effective teaching strategy for expository essay writing in secondary schools. School counsellors should mediate with relevant bodies like Universal Basic Education (UBE), Universities and Colleges of Education from time to time to organize conferences and seminars for English teachers on the use of reciprocal peer tutoring. School counsellors should expose male and female students equally as treating them the same will give them equal opportunities for academic achievement.

## CONCLUSION

The result of the study showed that reciprocal peer tutoring had a significant effect on computer students' achievement in expository essay writing. Thus, students who were taught expository essay using reciprocal peer tutoring achieved significantly higher than those taught using conventional teaching method. Also, the result equally revealed that gender had a significant effect on students' achievement in expository essay; female students had a higher mean score than their male counterparts in expository essay achievement test. The result as well indicated an interaction effect of methods and gender on students' achievement in expository essay; students' achievement in expository essay as a result of their exposure to the treatment conditions is dependent on their gender.

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