

## **SIMULATION TEACHING METHOD AND STUDENTS' ACADEMIC ACHIEVEMENT IN ENGLISH LANGUAGE IN GOVERNMENT SECONDARY SCHOOLS IN ABIA STATE**

Dr. M. U. Ibe-Nwaorisara<sup>1</sup> & Glory O. Enyianwah<sup>2</sup>

<sup>1,2</sup>Department of Curriculum & Instruction, School of Education, Federal College of Education Ofeme-Ohuhu, Umuahia Abia State

### **Abstract**

The study investigated simulation teaching method and students' academic achievement in English language in government secondary schools in Abia state. A specific objective guided the study. Two research questions were answered for the study while two null hypotheses were formulated and tested at 0.05 level of significance. The study adopted a quasi-experimental pre-test post-test control group design. The study was carried out in Abia state. The population for the study was 5,459 senior secondary two students from two co-educational secondary schools in Umuahia Education zone. The instrument used for data collection was English Language Achievement Test (ELAT) which was validated by three experts. The reliability index for the study was established using Kuder Richardson (K-R20) formula which yielded a reliability co-efficient of 0.77. Data for the study were collected through three phases of experimental procedure: pre-treatment phase, treatment phase and post-treatment phase. Mean and standard deviation were used to answer the research questions while Analysis of Covariance (ANCOVA) was used to test the hypotheses at 0.05 level of significance. The study found that female students exposed to Simulation method of teaching performed better than their male counterpart. The study also revealed that there is significant difference in achievement between students taught English language using Simulation method and those taught using lecture method. It was recommended among others that English language teachers should be trained through seminars and workshops on innovative teaching strategies such as simulation.

**Keywords:** Simulation teaching method, academic achievement, secondary schools, gender, English language.

### **Introduction**

Language is a medium through which humans relate to one another. Through language, people express their feelings, establish and maintain desirable social and working relationships. It is the method of human communication either spoken or written, consisting of the use of words in a structured and conventional way. Gomwalk (2000) asserts that language forms the basis for creative thinking and therefore, gives an individual or group its identity. It is through language that people communicate their feelings, thinking and even their perceptions.

Language is seen as man's most important gift. Without language, there will be no progress, no civilization and no culture. For many years, English language has been considered a global language. It is the main language of books, newspapers, air travels, international business, academic conferences, science, technology, medicine, diplomacy, sports, international

competitions, music, and advertising. It is also used as the language of international communication.

The wide spread use of English language is attributed to British colonization process which left the colonized nations including Nigeria with no option than to properly learn and speak English. The aim of teaching English language at the senior secondary school level is for the learner to acquire literacy skills and ability to communicate effectively. National Universities Commission (NUC, 2007) while acknowledging the vital role English plays in Nigeria, in spite of being a foreign language stipulates that greater attention be devoted to the achievement of adequate oral and written skills in it. To achieve this, teaching methods that enhance students' performance in English language should be used for instructional delivery.

There are various methods of teaching English language, and these methods determine the extent of the achievement of set objectives in the subject. Kanno (1997) observes that appropriateness of the methods employed will enhance curriculum implementation because such methods promote rather than hinder classroom learning. In this respect, English language teachers should adopt teaching methods that will enable their students to understand whatever concepts that are taught. Couch (2009) reports that one of the causes of poor achievement in language has to do with instructional method used by the teacher. He further notes that most teachers in various schools use the lecture method of teaching where a teacher presents his or her lesson in a structured manner to students who are expected to listen and take down notes. Students' participation is not encouraged. Effective instruction requires the teacher to step outside the realm of personal experience into the world of the learners (Akinsola & Animashun, 2007). Cotton (2007) and Mager (2001) are of the view that the use of appropriate teaching methods that are learner-centred helps the teacher to achieve goals and objectives of the school curriculum. The appropriateness of teaching methods in English language is of paramount importance. This is because students learn better when they are actively involved in the learning process. The use of innovative teaching methods in the teaching of English language can enhance students' academic achievement.

Academic achievement is an important educational variable that expresses the success or failure of a teaching and learning process. Campbell (2006) referred to academic achievement as the outcome of a teaching and learning process; the extent to which a student, teacher or institution has achieved their educational goals. Similarly, Adeyemi (2008) described academic achievement as the scholastic standing of a student at a given moment which states individual's intellectual abilities, which can be measured by grades obtained from examinations or continuous assessments (test or quiz). A good teacher who adopts an interactive teaching method produces active students. Methods of teaching languages are as important as curriculum content, and as such determine to great extent how children learn. Unfortunately, some teachers of English language have continued to use the traditional lecture method of teaching instead of the innovative teaching methods in their day to day teaching activities (Nwachukwu, 2015).

Lecture method of teaching is a teaching method where students learn by memorizing rather than understanding through their own active involvement. In this case, teachers are seen as learned scholars who talk continuously to the students without getting any response or

feedback. This results in insufficient interaction between a teacher and his or her students. A student's talent (creativity and rational thinking) cannot develop fully because some students are afraid of their teachers. It is against this background that Udosen (2016) says that:

*teaching has moved away from conceptualization which saw the teacher as the superman, who goes to the class to pour out knowledge to empty vessels (the John Locke view) to that of facilitating learning. The teacher no longer imparts but guides and facilitates learning (p.294).*

Teaching approaches are usually named after the dominant activity employed in the course of the lesson. The way a teacher presents a lesson to learners may make them like or dislike the subject. It may generate in them a love for or alienate them from school. Since the method of presenting a lesson is important, teachers should be concerned with the integration of innovative teaching method such as Simulation that is activity-oriented in the teaching of English language.

Simulation allows students to understand a process through participation in the process. Simulation is a language learning method which allows students to express themselves to their peers in a group setting; group comprising usually three or four (Sabhal, 2004). Simulation is related to role play but, in Simulation, students retain their own personae and are not required to pretend to be someone else. Simulation represents a reality within which students interact. It is an imitation of a real-world process. It is used when real system cannot be engaged because it may not be accessible or may be accessible but too risky to work with. Simulation places an individual in a realistic setting where he is confronted by problematic situation that requires his active participation in initiating decisions and actions (Igwe, 2016). Here, learners are expected to adopt control measure over problems or situations. Sabhal (2004) avers that

*in order to succeed, a simulation should be underpinned by a sense of reality or should create a brand new reality. This feature of Simulation increased students' autonomy and motivation, and lowers their anxiety level since they are interacting as equals in a small group among their peers, rather than performing for the teacher and class as a whole (p.3).*

Simulations can in addition to the imitation of real life system, adopt role playing technique where one demonstrates a mock of real or actual situation. Generally, simulation selects aspects of real life situations and presents an imitation of same in the classroom to reduce the abstract nature of curriculum content especially as may be experienced in English language. Student' performance in simulation exercises in English language may be influenced by gender. It is therefore necessary to look into gender to find out its effect on students' academic achievement in English language.

Gender as a variable in education, determines the academic performance of students. Gender is a sociological distinction based on masculine and feminine as well as a social label by which two groups (male and female) are distinguished and ascribed roles as male and female. Gender has engaged the attention of scholars and general public in recent times. Nwafor

(2002), reports that girls are better than boys in literary texts, while boys perform higher than girls in numeracy. Similarly, Nwona and Akogun (2015), note an academic imbalance against women(girls) in Science, Technology and Mathematics. These, they say are perceived as masculine subjects. In the same vein, Onekutu (2002), reports that boys and girls in the early ages perform equally in all subjects including English language. As they get to higher classes, the girls begin to get more interested in language arts, while the boys take more to sciences and social sciences. This has resulted in a situation where there are more boys than girls offering social sciences. Vernon (2002), reports that many comparisons show average scores of boys and girls to be the same on general intelligence test. He is of the view that girls do a little better on most verbal tests involving rote memory than boys. These studies show that there is need for more experimental studies in education which can further explore the effect of gender as a variable.

English language is the official language of communication in Nigeria. It is a compulsory subject at secondary school level, and admissions into higher institutions are dependent on candidates' achievement in English language. As such, it is a subject that must be mastered by students at school levels of education. Unfortunately, students' performance in this subject has consistently remained very poor especially in external examinations.

The statistics of result released by the National Examination Council (NECO) 2017-2019 in English language showed that the performance of students have been fluctuating. According to the registrar/chief executive of NECO report for 2015-2017, the scores of students in English language fell within 68.56%, 84.54% and 70.85% respectively. Many of the students, parents and stakeholders have attributed this ugly situation to teachers 'competence and methods of teaching especially, the use of lecture method alone. Williams and McClure (2010) advised that in order to ameliorate the declining poor achievement of students in both internal and external examinations, teachers must find the most suitable methods to teach the students in order to determine best practices for classroom delivery and minimize achievement loss, using the resources available to them. Supporting this view, Uloko (2006) suggested that the poor achievement of students in internal and external examinations have necessitated the fact that teachers should evolve strategies that would ensure active participation of students and be practical and project-oriented. The downward trend in achievement in English language among Senior Secondary school students in Abia State is very worrisome. It was on this background that the researcher was motivated to determine the effect of simulation method of teaching on students' academic achievement in English language in government secondary schools in Abia state.

The purpose of this study is to find out the effect of simulation teaching method on the academic achievement of senior secondary school two students in English language in Abia state.

Specifically, this was guided by some research questions:

1. What is the effect of simulation teaching method on students' academic achievement in English language?

2. What is the effect of simulation teaching method on male and female students' academic achievement in English language?

The following hypotheses were formulated and tested at 0.05 level of significance to guide the study:

**HO1:** There is no significant effect of simulation teaching method on students' academic achievement in English Language.

**HO2:** There is no significant difference in the effect of simulation teaching method on male and female student's academic achievement in English Language.

### **Methodology**

The study adopted a quasi-experimental pre-test, post-test control group design. The researcher used two groups: group A constituted the experimental group, while group B constituted the control group. The population of the study consists of 5,459 SS 2 students in 231 government-owned secondary schools in Abia state (PRSD unit of SEMB). Senior secondary two students are chosen for the study because they have been exposed to many topics English language than those in senior secondary one, and senior secondary three students are preparing for their WAEC.

The sample size for this study consists of 70 senior secondary two students drawn from two co-educational schools in Umuahia education zone of Abia state. They are: Secondary Technical School, Afaraukwu (40; 22 males and 18 females) and Williams Memorial Secondary School, Afugiri (30; 16 males and 14 females). The instrument for data collection was English Language Achievement Test (ELAT) which comprises 50-item multiple choice questions. The instrument was validated by three experts; one lecturer from Measurement and Evaluation, one other from Curriculum studies of Michael Okpara University of Agriculture, Umudike, and a seasoned English language teacher. The reliability index for the instrument was established using Kuder Richardson (k-R<sub>20</sub>) formula and it yielded a reliability coefficient of 0.77.

The pre-test was administered to the students in the two groups one week before the commencement of the treatment. The pre-test was marked and recorded as pre-test scores. One week after the pre-test, the treatment began and lasted for a period of six weeks. After the treatment, a post-test was administered to the two groups. The post-test was marked and the scores were recorded as post-test scores. The scores for pre-test and post-test were used for data analysis. The data collected from pre-test and post-test were analysed using mean and standard deviation to answer the research questions while the hypotheses were tested at 0.05 level of significance using Analysis of Covariance (ANCOVA).

### **RESULTS**

#### **Research Question One**

What is the effect of simulation method on students' academic achievement in English language?

The data for answering research question 1 is presented in Table 1.

#### **Table 1**

**Effect of Simulation Method on Students' Academic Achievement in English Language**

| Teaching Method | Number of students | Pre-test |      | Post-test |      | Mean Gain |
|-----------------|--------------------|----------|------|-----------|------|-----------|
|                 |                    | Mean     | S    | Mean      | S    |           |
| Simulation      | 40                 | 23.50    | 3.88 | 34.10     | 8.25 | 10.60     |
| Lecture         | 30                 | 20.53    | 3.74 | 29.80     | 4.99 | 9.17      |
| Effect          |                    |          |      |           |      | 1.43      |

N=Number of Students=S=Standard Deviation

The data presented in Table 4.1 showed that the students taught English Language with simulation method had a mean gain of 10.60 while those taught with lecture method had a mean gain of 9.17. This indicated that simulation method has an increasing effect of 1.43 on the students' academic achievement in English Language.

### Research Question Two

What is the effect of simulation method on male and female students' academic achievement in English language?

The data for answering question 2 are presented in Table 2.

**Table 2**

**Effect of simulation method on male and female students' academic achievement in English language**

| Groups      | Number of students | Pre-test |      | Post-test |      | Mean Gain |
|-------------|--------------------|----------|------|-----------|------|-----------|
|             |                    | Mean     | S    | Mean      | S    |           |
| Male        | 22                 | 22.72    | 3.72 | 51.54     | 4.53 | 28.82     |
| Female      | 18                 | 24.44    | 3.97 | 57.22     | 3.20 | 32.78     |
| More Effect |                    |          |      |           |      | 3.96      |

N=Number of Students, S=Standard Deviation

The data presented in Table 4.1.3 showed that the male and female students taught English language with simulation method had academic achievement mean gain of 28.82 and 32.78 respectively. This indicated that simulation method has an increasing effect on both male and female students' academic achievement in English Language but favoured female students by academic achievement.

### Hypothesis One

There is no significant effect of simulation method on students' academic achievement in English Language.

The data for testing hypothesis 1 is presented in Table 4.1.2.

**Table 3**

**Analysis of Covariance (ANCOVA) of effect of simulation method on students' academic achievement in English Language**

| Sources of Variation | Type III sum of squares | Df | Mean sum of squares | F       | Significance |
|----------------------|-------------------------|----|---------------------|---------|--------------|
| Correlated model     | 11103.688a              | 2  | 5555.1              | 155.157 | .000         |
| Intercept            | 808.405                 | 1  | 808.405             | 22.592  | .000         |
| Pre-test             | 981.002                 | 1  | 981.002             | 27.416  | .000         |
| Teaching method      | 6792.493                | 1  | 6792.493            | 189.829 | .000         |
| Error                | 2397.398                | 67 | 35.782              |         |              |
| Total                | 147092.000              | 70 |                     |         |              |
| Corrected total      | 13501.086               | 69 |                     |         |              |

a. R square=.022 (adjusted R squared=0.017), Significant at  $p \leq .05$

The data presented in Table 3 shows a p-value of .00 which is less than the alpha value of .05. This indicates that there was a statistical significant effect of simulation method on student's academic achievement in English Language. Therefore, the hypothesis of no significant effect of simulation method on student's academic achievement in English Language was rejected.

#### Hypothesis Two

There is no significant difference in the effect of simulation method on male and female student's academic achievement in English Language.

The data for testing hypothesis 2 are presented to Table 4

**Table 4**

**Analysis of Covariance (ANCOVA) of effect of simulation method on male and female student's academic achievement in English Language**

| Source of variation | sum of squares | Df | Mean sum of squares | F      | Significance |
|---------------------|----------------|----|---------------------|--------|--------------|
| Correlated model    | 11334.842a     | 2  | 5667.421            | 91.568 | .000         |
| Intercept           | 781.986        | 1  | 781.986             | 12.645 | .000         |
| Pre-test            | 886.180        | 1  | 886.180             | 14.318 | .000         |
| Gender              | 3.066          | 1  | 3.066               | .049   | .763         |
| Error               | 2166.243       | 35 | 61.893              |        |              |
| Total               | 147092.000     | 40 |                     |        |              |
| Corrected total     | 13501.086      | 39 |                     |        |              |

a. R square=0.032 (adjusted R squared=0.022), Significant at  $p \leq .05$

The data presented in Table 4 shows a p-value of .76 which is greater than the alpha value of



.05. This indicates that there was no significant difference in the effect of simulation method on male and female student's academic achievement in English Language. Therefore, the hypothesis of no significant difference in the effect of simulation method on male and female student's academic achievement in English Language was not rejected.

### **Discussion of Findings**

It was found from Table 1 that simulation method has an increasing effect of 1.43 on the students' academic achievement in English Language. This finding was in agreement with the findings of Onwukwe (2010) whose study revealed that students taught concept of chemistry and organic chemistry using simulation had a higher mean score than those taught with lecture method. Similarly, the findings of the present study agreed with the findings of Sulaiman, Mustapha and Ibrahim (2016) whose findings revealed that students taught Basic Science using simulation had higher mean score than those taught with lecture method.

Similarly, the corresponding hypothesis one in Table 3 showed the effect of simulation method on student's academic achievement in English Language was statistically significant when compared with that of lecture method of teaching. This indicates that teaching method is a significant factor in the achievement of students in English Language. This finding is in agreement with Kanno and Igwe (2014) whose findings revealed that students taught English language using simulation method performed better than those taught using lecture method. The reason for this higher performance by the experimental group is that students were able to comprehend using simulation to link the new concepts to the relevant concepts they have previously learnt.

The result of this study in Table 2 revealed that simulation method has an increasing effect on both male and female students' academic achievement in English Language but favoured female students by academic achievement mean gain of 3.96. This finding is in disagreement with the findings of Adigun, Onihunwa, Irunokhai, Sada and Adesina (2015) who found out that male students had better performance than the female students. However, the corresponding result of hypothesis two in Table 4 showed that gender is not a significant factor in students' achievement in English language. This finding is in line with Dania (2014) who revealed that gender had no significant effect on students' achievement in social studies.

Also, the result of hypothesis tested showed that there was no significant difference in the effect of simulation method on male and female student's academic achievement in English Language. Therefore, it implies that the use of simulation and lecture methods do not have effect on the achievement of male and female students in English language. This finding is in disagreement with Dania (2014) whose findings revealed that there was significant interaction effect of treatment and gender on students' academic performance in social studies.

### **Conclusion**

The study focused on Simulation teaching method and students' academic achievement in English language in government secondary schools in Abia state. Findings from the study have demonstrated the effectiveness of Simulation teaching method on students' academic achievement in English language in Abia state government secondary schools.



## Recommendations

Based on the findings of the study, the following recommendations were made:

1. Teachers should always apply innovative teaching methods like simulation in teaching English language to enhance students' academic achievement in schools. The use of lecture method of teaching should be de-emphasized in English Language class.
2. The officials in Abia State Ministry of Education should during supervision encourage teachers to apply simulation method of teaching in their lessons to enhance learning among students.
3. The Abia State Ministry of Education should more regularly organize workshops, seminars and conferences for teachers on innovative teaching strategies such as simulation for effective learning among students.
4. The curriculum planners should integrate and emphasize the use of simulation teaching method in English language in secondary schools.

## References

- Adeyemi, T. O. (2008). Predicting students' performance in junior secondary certificate examination in Ondo state, Nigeria. *Humanity and Social Science Journal*,3(1),26-36.
- Adigun,J., Onihunwa, J., Irunokhai, E., Sada, Y., & Adesina, O.(2015).Effect of gender on students' academic performance in computer studies in secondary schools in new Bussa, Borgu Local Government of Niger State. *Journal of Education and Practice*,6(33),1-7.
- Akinsola, M. K. &Animashun, I.A (2007).The effect of simulation games environment on students' achievement and attitude towards Mathematics in secondary schools. *The Turkish online Journal of EducationalTechnology*,6(3), 113-119.
- Campbell, M.A.(2006). *The effects of the 5th learning cycle model on students' understanding of force motion concepts*.(Unpublished M.Ed Thesis), University of Central Florida, Orlando.
- Cotton, A.(2007).*Students' guide to teaching practice*. New York: Cambridge University Press.
- Couch,J.(2009). Teachers are instrumental at helping learners dlecide what to be learnt. [http://www.miaavxi.muohio.ed/crometodd &pear](http://www.miaavxi.muohio.ed/crometodd&pear).

- Dania, P.O. (2014). Effect of gender on students 'academic achievement in secondary school social studies. *Journal of Education and Practice*, 5(21),78-84.
- Gomwalk, S. (2000). *Language and power: A tool for successful political speeches*. Ibadan: Adventures Press.
- Igwe,U.A.(2016).Simulation and games instructional strategy. In T. N. Kanno,V. A. Obasi & S. O. A. Obi edition. *Contemporary issues in curriculum implementation and methods*. Owerri: Hysab Prints and Publishers.
- Kanno, T. N.(1997). *Teaching practice, microteaching and methodology of education in Nigeria*. Lagos: Logic gate Media Ltd.
- Kanno, T.N. & Igwe, U.A. (2014).Using simulation geared towards special needs and challenges of students in teaching English language comprehension in secondary schools in Abia State. *International Journal of Technology and Inclusive Education (IJTIE)*.Special Issue, 1(3),504-511.
- Mager, R. F.(2001). *Preparing instructional objectives*. New York: Fearon Pitman Publishers Inc.
- National Universities Commission (2007). *Benchmark minimum academic standards for undergraduate programmes in Nigeria universities arts*. Abuja: National Universities Commission.
- Nwachukwu, S, N. (2015). *Effects of land laboratory and field trip methods of teaching on students' achievement and retention in senior secondary Agriculture in Benue State*.(Unpublished M.Ed Thesis).University of Agriculture, Makurdi.
- Nwafor, O.M. (2002). Analysis of gender issues in Nigeria formal education system. World Council for Curriculum and Instruction (WCCI), Nigeria Chapter, 3 (2),57-67.
- Nwona, H. A., & Akogun, N.A. (2015).Breaking gender barrier in Science, Technology and Mathematics Education. *Nigeria Journal of Research in Education*, 98-108.
- Onekutu, P. O. (2002). Gender differences in achievement in junior secondary school examination in Integrated Science: Implications for national development. *Review of Gender Studies in Nigeria*,4-12.
- Onwukwe, E. O. (2010). *Combined effects of play simulation and teaching with analogy on achievement among Chemistry students*. An Unpublished PhD Thesis. Nnamdi Azikiwe University, Awka.
- Sabhal, M.O.(2004). Best practice-best language teaching methods: Simulation as a Language learning tactic.

- Suleiman, B., Mustapha, B.I., & Ibrahim, B. B. (2016). Effect of simulation technique and lecture method on students' academic performance in Mafoni day secondary school, Maiduguri, Borno State. *Journal of Education and Practice*, 7(24) 54-58.
- Udosen, A. E. (2016). English language curriculum and teaching at tertiary level. In U.M. O. Ivowi (ed). Teacher education in Nigeria. Foremost Educational Services Ltd Lagos.
- Uloko, E.S. (2006). *Effects of ethno-mathematics teaching approach on students' achievement in locus at senior secondary school level*. (Unpublished M.Ed. Thesis), University of Nigeria, Nsukka.
- Vernon, T. (2002). Teachers' comment and students' performance. *Journal of Educational Psychology*, 49(44), 173-181.
- Williams, J. & McClure, M. (2010). The effects of teaching methods on cognitive leadership knowledge retention: An experimental design of lecture, experiential, and public pedagogy. *Journal of Leadership Education*, 9(2), 86-100.