Using Simulation Geared Towards Special Needs and Challenges of Students in Teaching English Language Comprehension in Secondary Schools in Abia State, Nigeria

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Abstract

This paper sought to determine the difference in the mean scores of students taught English Language Comprehension using simulation and those taught using lecture methods. Three research questions were posed. A random sample of 60 students was drawn from a population of 222. English-Language-Achievement-Test (ELAT) which was validated and which yielded an index of 0.90 was the instrument used. Mean and standard deviation were employed for data analysis. The findings revealed significant difference in the mean scores of the two groups (N=31, X = 80.12, sd = 7.82 and N=29, X = 44.8, sd = 6.26). It also revealed that the females performed better than the males and that the externalized subjects performed better than the internalized subjects. The paper thus, recommended the employment of innovative instructional methods like simulation and others in teaching English Language comprehension. Equally, it avers that more conducive learning environment equipped with basic learning facilities should be put in place. Finally, the need for more regular capacity building workshops for teachers to acquaint them with appropriate methodologies and strategies for planning school curriculum with that of popular and inclusive education was highlighted.

1. Introduction

Comprehension is the second level of cognitive attainment hierarchy as espoused by Bloom Taxonomy of Educational Objectives [1]. The first level is knowledge while the third, fourth, fifth and sixth levels are application, analysis, synthesis and evaluation, respectively. It is, therefore, very necessary that one is expected to comprehend (i.e understand) before one exhibits mastery of other levels especially when faced with the onerous tasks associated with school subjects.

Since English language still remains the language of the school curriculum and the Lingua Franca in Nigeria, conscious effort made in ensuring that all students demonstrate excellence cum expertise in the degree of comprehension in English language studies is worthwhile. It, (comprehension) arouses critical consciousness on intensive listening, reading, writing and interpreting. This is in tandem with the four literary skills of listening, speaking, reading and writing. It serves as a pre-requisite for intensive and extensive reading, in order for one to make applications and inferences. It also serves as the basis for critical analysis, prior to coordinated synthesis and appraisal, assessment or evaluation.

English language is, thus, very essential for the overall socio-economic and political development in Nigeria. It is indisputable that communication in English is used by almost half of the world’s population. In Nigeria, English Language is a core subject form the lower basic level to the tertiary level in spite of about 492 indigenous languages. In addition, English Language is the main language of inter ethnic communication and learners from the middle basic 4 through the tertiary levels are expected to learn, understand concepts and construct knowledge in addition to the fact that it is the second language for Nigerians. The colossal status of English Language is due to its perceived neutrality which is why it is used as an instrument for building a strong democratic nation.

Banjo refers to English language as the life blood of the education system in Nigeria [2]. He opined that if students lacked linguistic cum comprehension skills and achieved poor results in English language, then, there would not be students capable of understanding university courses and as such, the whole future of the nation would be in dilemma. Based on the importance attached to English language in Nigeria educational system, the general public expects secondary school students especially at the senior secondary level to be proficient in listening, speaking, reading and writing English in the school and beyond. Students that have special needs can also be cued into mastery learning via simulation.

Sequel to this expectation and other pedagogical factors, as it were, English language is taught in school every day as a core subject using various teaching methods according to the degree of proficiency of the teacher. However, experiences
and insights reveal that the subject needs to be taught in a more practical way, pertinent to the daily life and experiences of all learners. This leaves all teachers, stakeholders and curriculum planners postulating on how to teach English language so that students of various needs can use it practically in and out of school as well as perform creditably well in the subject during examinations. The students, in addition to the routine instructional procedure, should be challenged to analyze ideas, search or locate information on their own, interpret maps, charts and graphs and participate in a variety of roles [3].

One may, thus, begin to wonder on the appropriate didactic and innovative approach to use that will enable students to broaden their conception and become aware that English language is a dynamic instrument for solving real life problems. This demands the actualization of authentic learning skills where learners cultivate fundamental in-depth comprehension of concepts rather than mere regurgitation of same. For authentic learning to take place, innovative and constructive teaching methods and strategies are required in order to motivate learners and sustain their interests throughout the lesson. The need to explore various instructional strategies, techniques and methods in teaching, therefore, becomes imperative if not mandatory.

Onwuka avers that “the method adopted by the teacher may promote mental learning” [4]. It may sharpen mental activities which are the bases of social power; or it, may discourage initiative and curiosity thus making self-reliance and survival difficult. Ughamadu observes that; the method that a teacher uses has potential of promoting, hindering learning, sharpening mental activities, encouraging initiative and curiosity and thus make for self-reliance and survival” [5]. He further suggests that methods to be used by teachers while teaching English should be those that will suit the age, type class or level, characteristics and number of learners, the nature of tasks, in addition to the instructional objectives and available curriculum materials. Special needs of students are paramount while selecting instructional strategies.

It is against this background that this paper explores the efficacy of two teaching methods namely; simulation and lecture methods. The ability of male and female students to comprehend English language passages is experimented upon to primarily determine the difference in performance and effect of sex as a modifying variable in a class of two senior secondary school students in Nigeria.

It is pertinent to note that other scholars such as Igwe, Urenyere and Bora have variously conducted experiments on the differences that exist in the performance of males and females [6] [7] [8]. Specifically, for instance, Igwe found out there was significant difference thus “the mean X for males, (N=28) is 79.36 while the mean X for females (N=22) is 82.25” [9]. This reveals that females performed better than males at the post test.

Urenyere explored the extent to which gender influenced students’ knowledge and attitude in sewage disposal and water treatment in environmental education in Home Economics [10]. Males had mean score of 54.00 while females had 63.60. The study therefore, revealed that there was significant difference in the mean scores in Home Economics of male and female students in Enter Educate and Guided Discovery. However, to the contrary Bora revealed that gender has no significant effect on students’ problem solving abilities [11]. This underscores the need for more experimental studies in education such as this one to further explore the efficacy of sex/gender as a variable especially since it has been established that students (males and females) belong to one of the two patterns/statuses of orientation of locus of control.

Internal and external locus of control (I-E) scale was developed by Rotter [12]. It is a psychology and instructional personality scale. It focuses on the ability of an individual to rationalize the outcome of learning or behavior as being directly dependent on his/her own self efforts, perseverance, steadfastness, thrust, focus, zeal, determination or as result of predetermined destiny, chance, favor or luck.

It is a 29-item personality scale developed with each number having two alternatives “A & B”. Those subjects who score A are regarded as internals, “I”, while those with more “B” belong to the externals, “E”. The I-E scale “has an internal consistency reliability coefficient of 0.70 from a sample of 400 college students and a test-retest coefficient of 0.72” [13]. The I-E scale is usually employed in matching the subjects according to Experimental and Control groups as demonstrated in this study on using simulation in teaching senior secondary two students English language comprehension in Abia State, Nigeria.

Okorie and Kanno employed locus of control in their studies [14] [15]. Okorie investigated the relationship between locus of control (LOC) and academic attainment in Mathematics and English language and revealed significant relationship [16].

Mascolo explored the extent LOC and mode of entry into the university affected the transferability of set induction and questioning skills from microteaching to actual teaching practice [17]. She discovered that there was no significant effect of the therapy on the extent of transferability of microteaching set induction and questioning skill to actual teaching practice by the experimental group internalized and externalized subjects. The need for more research on the efficiency of LOC is, therefore, apparent perhaps focusing on lecture method and simulation.
Lecture method refers to the conventional cum traditional instructional practice where a teacher impacts knowledge to his or her students mainly verbally and monotonously too. It is often referred to as the talk and chalk method. The students, in that circumstance, pay attention while the teacher teaches/talks. The lecture format is generally assumed to proceed in an unilateral fashion, the teacher elaborates upon a given body of knowledge from his own expert perspective rather than building the content of classroom communication around questions that students might have [18].

The students automatically remain quiet in order to grab the necessary knowledge. In the context of English Language teaching, it is believed the teacher knows the substantive content and structure of the English Language and must model the skills and sub skills for the other initiate using oral drills, memorizing grammatical rules and paradigms and doing some written exercises among others.

These differ greatly from current perception of teaching English as a second language. The assumption is that students must be encouraged to question, collaborate, and use the target language to solve real life problems. Since it is by so doing that teachers of English Language can build on the assumption is that students must be encouraged to participate, and use the target language to solve real life problems. Since it is by so doing that teachers of English Language can build on the content of classroom communication around questions that students might have [18].

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According to Eme-Uche simulation is “the imitation of a real-world process or system overtime [19]. Simulation is used when real system cannot be engaged because it may not be accessible or it may be dangerous... Wikipedia gives reason why simulation is highly, recommended as a mode of instruction as:

- It breeds the spirit of cooperation amongst the participants.
- It exposes of the operations or activities of the community they live in, thereby preparing them for different roles later in life.
- Students of different abilities can participate in simulation.
- It arouses the interest of both slow and gifted children.
- It is an effective and result-oriented produce to the discussion of the topic simulated [20].

The act of simulation requires that a model be developed”. It can, in addition to the imitation of the real system adopt role playing technique where one demonstrates a mock of the real/actual situation.

It generally selects aspects of real-life-situations and presents a mock or imitation of same in the classroom to reduce the abstract nature of curriculum contents especially as may be experienced in English language comprehension passages. This is to improve learning, motivate learners and at the same time, elicit active participation of both teachers and learners. Kanno employed a combination of simulation, games and discussion method in teaching English language comprehension and summary [21]. The problem of selecting appropriate teaching methods still persists especially as one wonders whether simulation method per-se will have any marked improvement on the performance of students taught English language comprehension.

Special needs education is the practice of educating students with special needs in a way that addresses their individual differences and needs. Ideally, this process involves the individually planned and systematically monitored arrangement of teaching procedures, adapted equipment and materials, accessible settings. These interventions are designed to help learners with special needs achieve a higher level of personal self-sufficiency and success in school and their community, than may be available if the student were only given access to a typical class to a typical classroom education.

Common special needs include learning disabilities, communication disabilities, emotional and behavioral disorders, physical disabilities, and developmental disabilities. Students with these kinds of special needs are likely to benefit from additional educational services such as different approaches to teaching, the use of technology, a specifically adapted teaching area, or a resources room.

However, experience has shown that each child comes from different home background and some may have some special needs to be given special attention. Unfortunately, public schools in Nigeria are often times over crowded and they lack the qualified personnel and facilities to identify children with special needs and design remedial or intervention programme to handle same. The result is that such special needs children are forced to go through the regular classroom without having their special needs met let alone benefiting from the teaching-learning experiences. This could have grave consequence for the National Policy on Education, which stipulates equal opportunity in access to education for all Nigeria children of school age. It is only the blind and the deaf that have their own special schools [22].

The purpose of this study is, therefore to:-

- determine the difference in the performance of students taught English language
comprehension using simulation and those taught using lecture methods.

- establish if sex affects the performance of students taught English language comprehension using simulation and those taught using lecture methods.
- determine the difference in the performance of students in the experimental group taught comprehension using simulation based on locus of control.

It is believed that the findings of this study will assist curriculum planners while designing appropriate instructional strategies, techniques and methods for greater teaching effectiveness. Classroom teachers may also find this study relevant to their approaches and desire to reduce the abstract nature of teaching English language comprehension.

It is also hoped that the interest in continuous-learning characteristics the experimental group cultivated will be sustained towards more intensive learning of English language comprehension and perhaps other related course contents. Equally, the variable orientation of locus of control may readily serve as a pertinent personality and instructional scale for scholars and in fact everybody, including those with special needs, to determine whether someone is an Internalized or Externalized subject. Thus, researchers while using the scale may also wish to replicate this study using other school subjects in various locations. Finally, it is hoped that the findings of this study and the peculiarities of the experiment will contribute as data guiding government in making pertinent policies in teaching and learning. The pretest was a means of ensuring greater effectiveness in teaching methodology in English language in particular and the provision of general conducive learning environment in general.

The scope of this study is limited to senior secondary school two English language in Umuahia North, Abia State, Nigeria. Comprehension aspect of English studies is focused on during treatment phase. Two co-educational schools of similar characteristics were selected for the experimental and control groups.

Three research questions were posed to guide the study viz;

- What difference exists in the mean scores of subjects taught, English language comprehension using simulation and those taught using lecture methods?
- What difference exists in the mean scores of male and female subjects taught English language comprehension using simulation and those taught using lecture methods?
- What difference exists in the mean scores of subjects taught, English language comprehension using simulation based on orientation of locus of control?

2. Method

This is an experimental study conducted in Umuahia, Abia State Nigeria. It adopted the pre-test, post-test, control group design. Two groups namely experimental and control tagged E & C were used. While E-group received simulation method of teaching English language comprehension, the C group received the lecture method. These two groups are each located in different co-educational secondary schools in Umuahia North Local Government Area of Abia State. The population is Two hundred and twenty-two (222) senior secondary two students made up as follows: E-school = 132 and C-school = 90. The two schools are of parity in terms of co-educational status and ministry of education, Abia State ranking of schools. The two are also community secondary schools.

A sample of 60 students was randomly drawn from the population of 222. E-school has three streams and one intact class was selected while C-school has two streams of senior secondary school students and one intact class selected.

<table>
<thead>
<tr>
<th>Table 1. Distribution of Subjects by Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
</tr>
<tr>
<td>Experimental</td>
</tr>
<tr>
<td>Control</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Table I reveals that E group has fifteen (15) males and sixteen (16) females while C group has ten (10) males and nineteen (19) females.

A researcher-made-instrument was used for the data collection. It was titled English-Language-Achievement-Test (ELAT). It was validated by experts in curriculum studies and measurement and evaluation. A reliability coefficient of 0.90 was established using Pearson Product Moment Correlation Statistics.

The experiment lasted for six weeks of three contacts of one hour each per day hence three contacts per week. Thus, a total of eighteen contacts were made during the period of the experiment for the E and C groups. The experiment had pre-treatment and treatment phases. The pre-treatment phase was used for the familiarization visits to schools, assuring them that the exercise was a means of ensuring greater effectiveness in teaching and learning. The pretest was administered on the third and last day of the pre-treatment phase as a form of motivation.

The treatment phase lasted for six (6) weeks using simulation for the E group and lecture...
method for the C group. At the end of the therapy a post test was administered to the E&C groups.

3. Results

The results are presented in respect of the research questions (RQ) posed to guide the study: viz

Research Question I: What difference exists in the mean scores of subjects taught English language comprehension using simulation method and those taught using lecture methods?

Table 2. Mean and Standard Deviation with Respect to RQ

<table>
<thead>
<tr>
<th>Source</th>
<th>N</th>
<th>X</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simulation</td>
<td>31</td>
<td>80.12</td>
<td>7.82</td>
</tr>
<tr>
<td>Lecture</td>
<td>29</td>
<td>44.48</td>
<td>6.28</td>
</tr>
</tbody>
</table>

Table II reveals that the mean score for subjects N=31 taught using simulation is 80.12 with standard deviation 7.82 while those taught using lecture method N=29 had a mean score of 44.48 with standard deviation 6.28.

Research Question II (a): What difference exists in the mean scores of males and females taught comprehension using simulation at post test?

Table 3. Mean Score and Standard Deviation with Respect to Research Question 2a

<table>
<thead>
<tr>
<th>Source</th>
<th>N</th>
<th>X</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simulation Male</td>
<td>15</td>
<td>77.6</td>
<td>7.36</td>
</tr>
<tr>
<td>Simulation Female</td>
<td>16</td>
<td>82.88</td>
<td>7.05</td>
</tr>
</tbody>
</table>

Table III reveals that the mean score of male subjects, N=15, taught English language comprehension using simulation is 77.6 with standard deviation 7.36, while the mean score for the females, N=16, is 82.88 with standard deviation 7.05.

Research Question II (b): What difference exists in the mean scores of male and female subjects taught English Language comprehension using lecture method at post test?

Table 4. Mean Score and Standard Deviation with Respect to Research Question 2(b)

<table>
<thead>
<tr>
<th>Source</th>
<th>N</th>
<th>X</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture method Male</td>
<td>10</td>
<td>40.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Lecture method Female</td>
<td>19</td>
<td>46.89</td>
<td>6.43</td>
</tr>
</tbody>
</table>

Table IV reveals that the mean score of males N=10 in C group taught English Language comprehension using lecture method at post test is 40.0 with standard deviation 2.0 while that of females N=19 is 46.89 with standard deviation 6.43

Research question III: What difference exists in the mean scores of subjects taught comprehension using simulation based on orientation of locus of control?

Table 5. Mean Score and Standard Deviation in Respect of RQ3

<table>
<thead>
<tr>
<th>Source</th>
<th>N</th>
<th>X</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Externalized</td>
<td>7</td>
<td>81.73</td>
<td>9.52</td>
</tr>
<tr>
<td>Internalized</td>
<td>24</td>
<td>79.75</td>
<td>7.89</td>
</tr>
</tbody>
</table>

Table v reveals that the mean score of E group externalized subjects, N=7, is 81.73 with standard deviation 9.52, while that of the internalized subjects N=24, is 79.75 with standard deviation 7.98.

The results of data analysis shown in Table II reveal that there is a marked difference in the mean scores of the two groups E&C. Thus, while E group, N=31, has a mean of 80.12 with standard deviation 7.82, C group, N=29, has a mean of 44.48 with standard deviation 6.28. Specifically, this indicates that the E group performed better than the C group. This finding is in line with Okorie and Igwe [23][24].

Results of data analysis shown in Table III reveal that there is a marked difference in the mean scores of males, (N=15), and females, (N=16), in the E group. Males have mean score of 77.6 with standard deviation 7.36, while females, have mean score 82.88 with standard deviation 7.08. Specifically, this indicates that females performed better than males in the E-Group.

Results of data analysis shown in table IV reveals that there is a marked difference in the mean score of the males, N=10, and females, N=19, in the C group. Males have mean score 40.0 with standard deviation 2.0, while females have mean score 46.89 with standard deviation of 6.43. This implies that females performed better than the males in the C group.

It is pertinent to note that the females in the E&C groups performed better the males in those two groups. This finding collaborates Igwe who discovered significant difference in the mean score of males, N=22, and females, N=22, taught English Language comprehension and summary using simulation, games and discussion methods [25]. Similarly, Urenyere reported significant difference in the mean scores of males, 54.00 and female, 63.00 in Home economics Enter Educate and Guided Discovery [26]. The results of the study did not, however, corroborate that of Chukwuka [27].

Results of data analysis in Table V show that there is a marked difference in the mean scores of the Externalized, N=7, and internalized subjects, N=24, in the E group. Externalized subjects have mean score of 81.73 with standard deviation 9.52 while the internalized subjects have mean score.
79.52 with standard deviation 7.98. Specifically, that indicates that the externalized subjects performed better than the internalized subjects. Kanno discovered that orientation of locus of control of subjects did not affect their performance in the use of set induction and questioning skills during teaching practice [28]. Thus, externalized subjects did not leave their mastery of the teaching skills involved to chance, favor or even luck. The externalized subjects in this study exhibited similar trait. However Okorie discovered significant relationship between orientation of locus of control and academic attainment in both Mathematics and English language [29].

4. Conclusion and Recommendations

Summary of findings reveals marked difference existing in the mean scores of the E and C groups at post test. The basic peculiarity of this study emanates from the lackadaisical approach of the subjects (the control) group towards attendance to class especially English language comprehension studies. These subjects and indeed some other students in school preferred loitering around and outside the school compound to being in the class reading and attending to lessons. All the students E & C groups were made to understand that punctually and regular attendance were mandatory on their part. This was duly emphasized during the pre treatment phase. The pre-test administered to them was mainly to sensitize them towards the seriousness of the experiment which they were told was more for their own benefit.

A second index of peculiarity of the study is the general non-quite conducive nature of the learning environment especially the school compound and classrooms. Even though there were visible efforts on the innovation of some physical structures by the government, more attention should still be paid to basic features inside the classrooms. For example, some classrooms do not have electricity, marker boards and instructional materials-storage-facilities. In some classrooms, writings on the board were not clearly visible/legible. Thus conscious efforts were made not to use white chalk to write on white chalkboard. These are basic necessary precautions that facilitate learning. Without steady power supply (electricity) during school hours and beyond, most attempts in simulating learning through technological appliances like television, slides and power point projector will be frustrated.

There is still need for further areas or aspects of English language to be taught using simulation and indeed other innovative instructional strategies. This, among other benefits, will raise the consciousness and awareness of learners and even their teachers towards continuous search cum emancipation of mankind thereby align with the special branch of education and pedagogy known as popular education which was greatly espoused by Professor Liam Kane of the University of Glasgow, Scotland as a dialogical model for the educator and mentee in the emancipation of mankind, community development, as social changes in the developing world such as Nigeria. There is, thus, emphasis on inclusive education.

Simulation of pedagogical characteristics of popular education packaged in English language comprehension will be beneficial to all types of students and teachers alike. While students are urged to remain in school always, teachers are also charged to be very dutiful. Thus, there should never be a period where all teachers will leave the school at the same time/day as witnessed during the treatment phase of this experiment. Conscious efforts should be made via interesting innovative instructional practices to make students remain in school and complete their academic programme. Wikipedia reveals that “more than 20% of African children have never attended primary school or have left without completing primary education” [20] [31]. This is an area of great concern on the part of teachers, policy makers/government and the general public. More worrisome though, Kale Redman adds a report that “Nigeria accounts for about one fifth of the entire world’s out-of-school children, that is about 10.5 million or more of children. Stated more directly, Nigeria has the highest number of out of school-drop-outs in the world”.

From this study it was seen that simulation was efficacious in improving the performance of students in English language comprehension. It was also revealed that externalized subjects in the experimental group performed better than the internalized subjects as highlighted earlier. These findings underscore the importance, efficacy and relevance of well planned and duly implemented innovative instruction strategies, technique and methods. With due emphasis on popular education, as enshrined in English Language comprehension passages, very conducive learning environment, enhanced staff cum teacher motivation and stimulating instructional best practices, more children will remain in school and duly participate in educational-experimental sessions be they in the experimental and control groups.

Based on the findings of the study, and despite these few highlighted peculiarities, the following recommendations are made:-

- Abia State Government should, organize capacity building workshops/seminars more regularly for teachers on innovative teaching strategies such as simulation and the like in relation to school curriculum packages.
There should always be due emphasis on the performance of both male and female students in school.

Orientation of locus of control personality and instructional characteristics should always be highlighted for everyone to know his/her status and at the same time be conscious that hardwork in school and elsewhere is the key to success and not mere luck, chance, occasional favor and unpredictable circumstance.

The tenets of popular education and increased access to school remain the substratum for raising one’s critical consciousness and national development through the emancipation of mankind and elimination ignorance.

There is still need for more research or experiments on innovative best instructional practices beyond simulation that will enhance learning.

There is need to employ innovative instructional practices in teaching students with special needs.

Instructional strategies should be designed to reflect the special needs and challenges of all learners.

5. References


[21] Kanno, T.N. Transferability of Set Induction and Questioning Skills from Microteaching to Actual


