

Effect of Powerpoint Presentation and 5Es Constructivist Instructional Approach in Enhancing Summary Writing

¹Gladys D. Ukume, Ph.D
[*gladyszion2@gmail.com*](mailto:gladyszion2@gmail.com)

¹Vincent U. Uguma, Ph.D
[*ugumavincent@gmail.com*](mailto:ugumavincent@gmail.com)
¹Arts Education Department
University of Calabar, Calabar

Abstract

This study investigated the effectiveness of using PowerPoint Presentation and the 5Es constructivist instructional approach on students' performance in summary writing in Calabar Municipality, in Cross River State, Nigeria. The study was guided by three research questions while three hypotheses were formulated and tested at 0.05 level of significance. The study adopted the non-equivalent quasi-experimental pretest-post-test control group design. The sample of the study was 104 students selected through purposive and simple random sampling techniques. The instrument for data collection was "Students' English Language Summary Performance Test" (SELSPT). Data were analyzed using mean and standard deviation to answer the three research questions while Analysis of Covariance (ANCOVA) was used to test the hypotheses. Findings of the study indicated that both PowerPoint and 5Es strategies have higher significant effects on students' performance in summary writing than the conventional strategy. Another finding showed that there was no comparative significant effects of PowerPoint presentation and 5Es strategy on students' performance in summary writing. The study therefore recommended that government should provide technological gadgets for teaching of summary skills by English Language teachers. English Language teachers should be encouraged to use 5Es approach in teaching summary writing.

Keywords: PowerPoint, SEs, constructive, summary, writing.

Introduction

The role of Language Educators is to teach and develop the language skills for proficiency and effective communication in and outside the classroom. The four language skills are interwoven for effective language use. Maor et al. (2021) note that a deficiency in one of the skills can contribute negatively to one's proficiency in another component. It therefore becomes imperative for language teachers to teach the four language skills interactively. In spite of the critical roles English language play in education delivery and

sustainable development in Nigeria, Ode (2020) reports that some educators across different levels have consistently complained that the language proficiency level of many students is grossly inadequate for their communication demands. This can be blamed on the faulty teaching and learning foundation from the primary to the secondary school level. Ode (2020) informs that because of the low comprehensible input of learnings as well as low proficiency level of students in English Language, there has been consistent falling standard in general education system. The direct effect of this negative trend is the corresponding dismal performance of students in external examinations in the past few decades (Ukume & Agbinya, 2019).

One of the aspects of English language that is critical to students' proficiency and communication competence is summary writing skills. Summary writing has to do with the skills of reading and writing ability. Summary writing is therefore an essential literacy skills that is capable of improving general literacy development. Summary writing is one of the skills used most in school setting for report writing and examination. According to Ayo et al. (2013), summary writing means an intelligent selection and restating of thought, concepts and ideas from an original text in a way that important ideas and relevant details are retained. Aliyu (2010) assets that summary writing is characterized by brevity and relevant details. Ability of students to read large contents of written text, understand and summazise in their own words is crucial to language proficiency, communication and comprehension of text.

Despite importance of summary writing in students' proficiency in English language and general academic performances, many students shy away from summary writing. Many of them see summary as the most difficult aspects of English language especially at external examinations like the Senior School Certificate Examination (SSCE). The 2019, 2020 and 2021 May/June West African Examination Council (WAEC) Chief Examiner's reports show that students' performance in English Language and particularly in summary writing was abysmal. The reports indicate that many candidates' main weaknesses were the inclusion of irrelevant and unnecessary details in their answers. Summary writing has therefore been a big setback for students because many candidates engage in wholesome lifting of ideas from the passage thereby losing valuable marks.

Maor et al. (2021) inform that summary passages often pose difficulties for students as they find it difficult to understand questions that followed. The major weaknesses of students observed by the authors are inclusion of irrelevant details and inability to paraphrase. The several mistakes observed in students' summary writing may be traced to insufficient exposure to summary writing skill. Summary writing is an aspect of the English language (paper 1) that covers 30% out of the 100% in the examination. Ekawat

(2010) defines summary writing as a restatement of the important ideas of a text without copying or distorting the original information. Maor et al. (2021) also explain that summary writing is an intelligent selecting and restating of thoughts and ideas, from original passage in such a manner that only the important and relevant ideas are retained. Therefore, summary writing is a condensed version of an original text. A summary writer is expected to use language effectively enough to be able to paraphrase instead of using an author's idea verbatim. Maor et al. (2021) observe that summary writing is an integrative task that involves the interplay of two abilities. That is ability to comprehend the main idea of a text and rhetorical organization of a text. Summary therefore involves comprehension and writing skills.

Many reasons have been advanced by some researchers on why students do not do well in summary writing. Some of these reasons include poor knowledge of the rules of summary writing, inability to construct good sentences and poor instructional methods employed by many English language teachers especially at the secondary school level. Aimunmondium (2009) and Maor et al. (2021) criticize the conventional approach of teaching summary writing as ineffective and teacher-centred where students are not allowed to interact with their peers in this approach. The teacher simply asks students to underline what they consider as the main ideas. An effective teaching approach should be able to aid students to attain a good comprehension and writing skills. This therefore calls for a paradigm shift from the ineffective method to innovative methods that encourage students' interaction and comprehension in learning. There is also the need for English language teachers to adopt simple technological or digital methods to align with current global educational trends with best practices standards, leading to reforms in the curriculum delivery through effective modern teaching methods and assessment. This study therefore examined the effectiveness of PowerPoint presentation and the 5Es constructivist instructional approach on students' performance in summary writing.

The National Policy on Education in Nigeria (NPE) (FRN, 2004) has highlighted the importance of integrating technology in teaching and learning of every school subject. The essence of this is to encourage and develop digital literacy to meet the global best practices of education delivery. This explains why the Ministry of Education at both Federal and State levels has been providing training for many school teachers on the use of Information and Communication Technology (ICT) in education. Some of the technological devices that can be used in teaching are Google classroom, computer application, Youtube and powerpoint package presentation. Unfortunately, many schools, especially public secondary schools, are hardly provided with ICT tools that could enhance learning outcomes. Opoh (2023) informs that using digital technological tools in classroom learning promotes critical thinking, collaboration and social

interactions with peers and teachers in academic activities. The outbreak of COVID-19 which brought the whole world to a standstill, with education delivery being the worst hit, opened up opportunities for several educators to come up with effective digital technological learning devices that can be utilized in both the classroom and outside the classroom. This trend invariably calls on curriculum designers to re-visit the curriculum of every school subject including the English language to diversify the curriculum content and teaching strategies to accommodate more of the ICT devices to meet the standard of global best practices.

PowerPoint presentation packages communication is part of the Information and Communication Technology (ICT) programme developed by Microsoft in 1987. It is an application programme for presentation, bundled in Microsoft office (El-Ikan, 2010). It consists of slides allowing the user to present messages. According to Opoh (2023), information prepared on a computer could be better projected for larger audience using a Liquid Crystal Display (LCD) or DLP projector. PowerPoint presentation can be used in the classroom for supporting students' learning by combining computer and projector to display slides for illustrating lessons. PowerPoint is a software tool that has become a presentation staple in conference halls and large classrooms. Students could learn better through visual, sensory, inductive, auditory and deductive approach. Opoh (2023) notes that PowerPoint presentation can be regarded as a good instructional medium and a key for facilitating an effective teaching-learning process.

PowerPoint presentation is related to cognitive theory of multimedia learning which can help student's memory. The English language teacher can use PowerPoint package to teach summary writing since materials or written text can be reduced many times. PowerPoint allows a teacher to vary his/her teaching methods and break the routine (Katel, 2021). It can also motivate students and get their attention to a lesson. In teaching summary writing, the English Language teacher can present the summary passage on the projector and lead students to identify the topic sentence in each paragraph. The topic sentences or main ideas, can then be projected in slides for students' better understanding by clicking on the summary slide on the outlining toolbar.

Katel (2021) established in a study that students' perspectives changed positively towards the use of PowerPoint in ELT classroom content. Ogeyik (2016) conducted a study to compare PowerPoint Presentation and the conventional lecture on pedagogical content in English Language. Findings of the study indicated that the treatment group outperformed the conventional group in English Language content and positive attitude towards efficiency in application of PowerPoint Presentation. Vyas and Sharma (2014) also conducted a study that compared PowerPoint Presentation and the traditional lecture. The

findings showed that the achievement of students exposed to the PowerPoint Presentation was significantly higher than those taught writing using the traditional lecture method. Nqoc (2018) established in a study that 66% of students taught English Language using powerpoint scored higher scores in writing and listening as an integral part of the technological content knowledge (TCK). This could be effectively used by teachers in summary writing instruction.

Another teaching strategy that could be effectively employed by the English as Second Language (ESL) teacher to teach summary is the 5Es constructivist instructional approach. It is pertinent to note that current pedagogical trends encourage classroom teaching and learning processes that are centred on the learners' active participation in constructing knowledge and enhancing problem-solving skills. The 5Es constructivist instructional approach was developed by Bybee et al. (2006). According to Tagbo (2015), a constructivist instructional approach provides a built-in-structure for creating a constructivist classroom. There are other different models of constructivist instructional approach like 6Es and 7Es. The 5Es approach arranges learning experiences so that students will have the opportunity to construct their understanding of a concept overtime. Maor et al. (2021) explain how new knowledge is constructed by human beings through the use of existing knowledge. Obianuju (2017) explains that the constructivist learner actively construct knowledge by interrogating new information and experiences into what they have previously learnt to understand, revise and re-interpret old knowledge in order to reconcile it within the new knowledge. The author further states that all these learning experiences take place within the context of social interaction. Constructivist instructional approach therefore encourages students' active participation in the learning process.

Wordu and Okwu (2020) inform that the 5Es constructivist instructional approach motivates students to learn more and boost their interest in a particular topic or subject. The authors further explain that the information learners receive allow them to evaluate learning cycle which is constructivist-based learning, brainstorming and creative thinking complex for overcoming difficulties. The first 'E' in the model stands for "Engage". This is where the teacher intentionally presents challenging tasks to learners. The teacher can ask questions or show a picture in order to arouse students' interest and activate their prior knowledge in the task at hand. The interest so aroused will motivate them to 'Explore' which is the second 'E'. This is the phase of gathering information by the learners by observing, guessing and testing to make hypothesis. The third 'E' is the explanation stage where students are asked to explain the results of their findings. At this stage, the teacher gets actively involved in order to correct students' errors or misconceptions. The fourth 'E' which stands for 'Elaborate' is where the teacher helps students to enhance their comprehension of the major concepts. This is where students practice their new

knowledge, suggest solution to create new solutions to problems and make decisions or introduce logical implications. The fifth 'E' which stands for 'Evaluation' is the stage where students have the opportunity to evaluate their understanding. This stage actually involves students' assessment to determine their comprehension (Maor et al., 2021; Tagbo, 2015; Wordu & Okwu, 2020).

The 5Es constructivist approach could be effective in teaching summary writing since summary involves stages of critical and cognitive activities that could aid learners to convey an author's idea concisely without distorting the main idea. Moar et al. (2021) explain that the summary class could be achieved through the following 5Es approach.

- Students engage the reading text as they read and reflect on the topic in group, based on the teacher's questions or the topic.
- Students explore the passage to identify main ideas by guessing, discussing and suggesting what the author is saying in each paragraph of the passage.
- Students of the different groups explain the various suggestions of what the main ideas of paragraphs are through their representatives. Teacher notes their answers and corrects where it is necessary.
- Students elaborate by re-casting the main ideas of the paragraphs/passage that have been accepted and carefully eliminate examples, unnecessary words and organize their statements in a coherent manner.
- Teacher evaluates students' submission by assessing their answers or summary of the entire passage

Some language educators have conducted research on the efficacy of 5Es in language learning outcomes. Maor et al. (2021) proved in a study that the use of 5Es teaching approach improved students' performance in summary writing than the conventional teaching strategy. Ramadhan (2017) found out in a study that students in the experimental group taught reading comprehension using the 5Es model achieved significantly higher in reading descriptive text than the control group. Uwalaka and Offorma (2015) also proved the effectiveness of constructional group in students' achievement in French listening comprehension.

Technological teaching devices and constructivist teaching methods could therefore be effective in improving students' performance in English Language summary writing. The purpose of this study was therefore to investigate the effects of PowerPoint Presentation and the 5Es constructivist instructional approach on senior secondary one students' performance in English summary writing.

Research questions

The following research questions were raised to guide the study:

1. What will be the effect of using PowerPoint strategy on students' academic performance in English Summary Writing compared to using the conventional strategy?
2. What are the mean performance scores of students taught summary writing using the 5Es constructivist instructional approach and those taught using the conventional strategy?
3. What are the mean performance scores of students taught summary writing using the PowerPoint strategy and those taught using the 5Es constructivist instructional approach?

Hypotheses

The following hypotheses were formulated and tested at 0.05 level of significance:

Ho1: There is no significant effect in Students' English Language summary writing performance when taught using PowerPoint strategy compared to using the conventional strategy of teaching summary writing.

Ho2: There is no significant effect in Students' English Language summary writing performance when taught using 5Es constructivist instructional approach compared to using the conventional strategy of teaching summary writing.

Ho3: There is no significant difference in the mean comparative effect of using power point strategy and the 5Es constructivist instructional approach on students' performance in English summary writing.

Methodology

The study adopted a pre-test, post-test non randomized quasi-experimental design. The study was conducted in Calabar Municipality, Cross River State, Nigeria. The population of the study consisted of 2,078 senior secondary one (SS1) students. Purposive and simple random sampling techniques were used to select a sample of 104 respondents. The sample was spread across three intact classes in three different schools.

The instrument for data collection was English Language Summary Writing Performance Test (ELSWPT). The instrument had two sections - A and B. Section A was for students to indicate their school name to classify them to a particular group. The first two schools were assigned to PowerPoint strategy and 5Es constructivist instructional approach, while the third group was assigned to the control (conventional strategy) group. Section B of the instrument consisted of instruction, a summary passage adopted from the West African Senior School Certificate Examination of 2021 followed by the questions. Before the treatment, a pre-test English language summary writing test was administered to all the groups. The experimental group who were taught with PowerPoint had their teacher

(research assistant) trained on the use of PowerPoint. The school was purposively selected based on the fact that the school had the necessary equipment for PowerPoint presentation.

The 5Es constructivist group teacher was also trained on the use of prepared lesson plans based on 5Es constructivist activities on summary writing. The treatment lasted for four weeks after which a similar post-test was administered on all the groups. All the scripts were assessed based on W.A.E.C marking scheme by the researchers who marked and coded the scores for further analysis. Data collected were analysed using mean and standard deviation to answer the research questions, while Analysis of Covariance was used to test the hypotheses at 0.05 level of significance.

Presentation of results

Research question 1: What will be the effect of using PowerPoint strategy on students' academic performance in English Summary Writing compared to using the conventional strategy?

The descriptive statistics is given on table 1.

Table 1: Mean performance scores of students taught with the conventional strategy on PowerPoint Package on students in English Summary writing (n=104).

| Treatment | N | Adjusted mean | Std Error | Adjusted Mean Difference |
|-----------------------|----|---------------|-----------|--------------------------|
| Conventional strategy | 50 | 22.14 | .457 | 8.88 |
| PowerPoint strategy | 54 | 31.02 | .600 | |

The adjusted mean score for students taught summary writing using PowerPoint Presentation strategy is greater than that of those taught with conventional strategy by 8.88. This indicates that PowerPoint Presentation strategy has a greater positive effect on performance scores of students in summary writing than the conventional strategy.

Ho1: There is no significant effect in Students' English Language summary writing performance when taught using PowerPoint strategy compared to using the conventional strategy of teaching summary writing.

To test this hypothesis, Analysis of Covariance, with pre-test as covariate, was used. The result of the analysis is presented in table 2.

Table 2: Analysis of Covariance of difference between the achievement scores of students taught English Summary writing using powerpoint strategy and those taught with conventional strategy

| Source | Type III Sum of Squares | Df | Mean Square | F | Sig. |
|-----------------|-------------------------|-----|-------------|---------|------|
| Corrected Model | 46.674 (a) | 2 | 22.454 | .672 | .501 |
| Intercept | 25751.046 | 1 | 25751.046 | 825.252 | .000 |
| Pretest | 9.486 | 1 | 9.486 | .247 | .586 |
| Method | 44.345 | 1 | 44.345 | 9.462 | .346 |
| Error | 7417.125 | 102 | 32.732 | | |
| Total | 14418.002 | 104 | | | |
| Corrected Total | 7239.127 | 103 | | | |

a R Squared = .006 (Adjusted R Squared = -.003)

The result of the analysis as presented on table 2 revealed a high significant F-ratio of 9.462 with p-value of 0.346 for teaching method (power point strategy and conventional teaching strategy). The p-value was found to be greater than 0.05 level of significance with 2 and 102 degrees of freedom. This led to the retention of the null hypothesis. The implication of this is that, the students taught English Summary writing concepts using power point strategy did not perform significantly better than students taught with conventional teaching strategy.

Research question 2: What are the mean performance scores of students taught summary writing using 5Es constructivist instructional strategy and those taught using the conventional strategy?

The descriptive statistics is given on table 3.

Table 3: Adjusted mean and standard deviation of students' performance in English Summary writing when taught with 5Es constructivist instructional strategy and the conventional strategy

| Treatment | N | Adjusted Mean | Std. Error | Adjusted Mean Difference |
|---------------------------------------|----|---------------|------------|--------------------------|
| Conventional strategy 5Es | 48 | 22.14 | .457 | 5.72 |
| Constructivist instructional strategy | 56 | 27.86 | .539 | |

The adjusted mean score for students taught with 5Es constructivist instructional strategy is greater than those taught with conventional strategy by 5.72. This means that 5Es constructivist instructional strategy has a greater effect on performance scores of students in summary writing than the conventional strategy.

Ho2: There is no significant effect in Students' English Language summary writing performance when taught using 5Es constructivist instructional approach compared to using the conventional strategy of teaching summary writing.

Analysis of Covariance with pre-test as covariate was used. The result of the analysis is presented in Table 4.

Table 4: Analysis of Covariance of difference between the mean scores of 5 Es constructivist instructional approach on students' performance in English Summary writing and those taught with conventional teaching approach

| Source | Type III Sum of Squares | Df | Mean Square | F | Sig. |
|-----------------|-------------------------|-----|-------------|--------|------|
| Corrected Model | 78.213 (a) | 2 | 48.825 | 12.28 | .003 |
| Intercept | 17691.734 | 1 | 17691.734 | 34.47 | .005 |
| Pretest | 79.129 | 1 | 79.129 | 8.413 | .124 |
| Method | 65.381 | 1 | 64.72 | 13.741 | .003 |
| Error | 762.067 | 102 | 32.797 | | |
| Total | 10483.000 | 104 | | | |
| Corrected Total | 8462.252 | 103 | | | |

a R Squared = .100 (Adjusted R Squared = .092)

The result of the analysis as presented in table 4 revealed a high significant F-ratio of 13.741 for teaching strategy (5Es constructivist instructional approach and conventional teaching approach) with a p-value of 0.003. The p-value is less than 0.05 level of significance with 2 and 102 degrees of freedom. The implication of these analyses is that the students taught English Summary writing concepts using 5Es constructivist instructional approach performed significantly better than students taught with conventional teaching approach. With the result, the null hypothesis was rejected while the alternate hypothesis was accepted.

Research question 3: What is the comparative effect of using power point strategy and the 5 Es constructivist approach on students' academic performance in English Summary writing?

The descriptive statistics is presented on table 5.

Table 5: Comparative effect of using powerpoint strategy and the 5Es constructivist instructional approach on students' performance in English summary writing (n=104)

| Treatment | N | Adjusted Mean | Std. Error | Adjusted Mean Difference |
|---------------------------------------|----|---------------|------------|--------------------------|
| Power point strategy | 51 | 27.86 | .539 | 3.23 |
| Constructivist instructional strategy | 53 | 31.09 | .600 | |

The adjusted mean score for students taught with 5Es constructivist instructional strategy is greater than that of those taught using the PowerPoint Presentation strategy by 3.23. This means that 5Es constructivist instructional strategy has a greater positive effect on performance score of students in summary writing than the PowerPoint Presentation strategy.

Ho3: There is no significant difference in the comparative effect of using power point strategy and the 5Es constructivist instructional approach on students' performance in English Summary writing.

To test this hypothesis. Analysis of Covariance with pre-test as covariate was used. The result of the analysis is presented in Table 6.

Table 6: Analysis of Covariance of difference in the mean comparative effect of using power point strategy and the 5 Es constructivist instructional approach on students' performance in English Summary writing

| Source | Type III Sum of Squares | Df | Mean Square | F | Sig. |
|---------------------------------|-------------------------|-----|-------------|---------|------|
| Corrected Model | 77.924(a) | 3 | 18.724 | .589 | .671 |
| Intercept | 23872.434 | 1 | 23872.434 | 819.139 | .000 |
| Pretest | 7.835 | 1 | 7.520 | .243 | .617 |
| Comparative effect of treatment | 28.247 | 1 | 26.045 | .770 | .361 |
| Error | 7240.256 | 101 | 31.607 | | |
| Total | 145226.000 | 104 | | | |
| Corrected Total | 7641.642 | 103 | | | |

a R Squared = .011 (Adjusted R Squared = -.007)

The result of the analysis as presented on Table 6 revealed the comparative effect of treatment (using powerpoint strategy and the 5Es constructivist instructional approach) was not significant since p-value of 0.361 was greater than the 0.05 level of significance ($P > .05$; df 3 and 101). The null hypothesis was retained with respect to comparative effect of treatment. This result implies that both treatment is effective in improving the performance of students in summary writing.

Discussion of findings

The results of the study from the first hypothesis indicated that students taught summary writing using the PowerPoint strategy obtained higher post-test performance scores, though not significantly, than those taught summary writing with the conventional strategy. The differences in performance in the two different groups may be as a result of the excitement students in the PowerPoint group had which aroused their interest and motivated them to perform better. PowerPoint strategy may also have aided and improved communication skills by allowing students to identify and present their responses in a clear and concise manner. The strategy might also have enhanced students' language skills like listening and reading as they get their attention focused on the different PowerPoint slides indicating the main ideas of passages read. This finding is in consonance with the findings of Katel (2021), Nqoc (2018), Vyas and Sharma (2014) and Ogeyik (2016). Katel (2021) found that the use of PowerPoint indicated positive perspective towards its use. Nqoc (2018), Vyas and Sharma (2014) and Ogeyik (2016) all established in various studies that students taught different aspects of English Language using PowerPoint

strategy obtained higher performance scores than those taught with the conventional strategy. All the findings related to the findings of this study can be anchored on the fact that teachers' technology in use improved with some degree of interaction among student. Another finding of this study indicated that students taught summary writing using the 5Es constructivist instructional approach performed significantly better in the post-test summary writing than those taught with the conventional strategy. The improved performance of students taught using 5Es constructivist approach might be because they all had the opportunity of constructing new knowledge. The learning activities involved in the 5Es may have also allowed students to collaborate and transform the contents of the text which provided avenues for them to express themselves freely allowing the teacher to act as a facilitator by encouraging learners' centred activities. The finding is in agreement with the findings of Ramadhan (2017) and Uwalaka and Offorma (2015) who established the effectiveness of 5Es approach on the improvement of reading and listening comprehension.

The third finding of this study showed no significant difference in the effect of PowerPoint strategy and the 5Es constructivist approach on students' performance in summary writing. This finding proved that the two teaching strategies effectively helped students to interact with the learning content which enhanced their summary writing skills. The finding is in consonance with the findings of Katel (2021), Ogeyik (2016), and Maor et al. (2021), who all found in their different studies that the use of PowerPoint Presentation and 5Es constructivist approach improved students' performance in English Language contents and summary writing respectively.

Conclusion

The findings of this study have proven the efficacy of using PowerPoint presentation and 5Es instructional approach in teaching English Language summary writing. The use of ICT in teaching summary writing to meet global best practices is proven through the application of PowerPoint. Constructivist based learning which enables learner to make use of their previous knowledge and connect to the present knowledge through a model of cycle of five stages has also been established as being effective.

Recommendations

Based on the findings, the study recommended that:

1. Government should provide technological devices like computers and projectors for public secondary schools in teaching all aspects of English Language.
2. English Language teachers should undergo special ICT training on the use of PowerPoint in teaching.

3. English Language teachers should be encouraged to use the 5Es approach in teaching summary writing and other aspects of English Language.

4. Curriculum designers of English Language should re-visit the secondary school curriculum to include technological teaching strategies and constructivist-based instructional approaches.

References

- Aimunmondium, M. C. (2009). Effects of thought-flow knowledge and shared reading instructional strategies on senior secondary students' achievement in English reading comprehension and summary writing [Unpublished PhD thesis]. University of Ibadan.
- Aliyu, J. S. (2010). *Upgrading English Achievement*. Zaria: Tamazu Company Limited.
- Ayo, B., Elugbe, B., Onagu, U. & Akano, A. (2013). *New Oxford Secondary English Course for Senior Secondary Schools 2* (4th ed.). Ibadan: University Press Plc.
- Bybee, R. W., Taylor, J. A., Gardner, A., Scotter, P. V., Powel, J. C., Westbrook, A. & Landes, N. (2006). The BSCS 5E instructional approach: Origins and effectiveness. A Report prepared for the Office of Science Education National Institutes of Health.
- El-Ikan, K. K. (2010). The advantages and disadvantages of teaching with PowerPoint. Retrieved from <http://www.penaldo.wordpress.com/theadvantages>.
- Ekawat, W. S. (2010). Effect of Cooperative learning on EFL university student summary writing [Unpublished master's thesis]. Srinakharimwirot University, Bangkok, Thailand.
- Federal Republic of Nigeria (FRN) (2004). *The National Policy on Education*. Lagos, NERDC
- Katel, K. P. (2021). Use of PowerPoint presentation in English Language teaching classroom at Masters level: Perspective and issues [An unpublished thesis]. Tribhuvan University, Kiritipur Kathmandu, Nepal.
- Maor, C. M., Ochogwu, C. E. & Ukume, G. D. (2021). Effects of 5Es constructivist instructional approach on students' performance in English Language summary writing in Makurdi, Benue State. *Prestige Journal of Counselling Psychology*, 4(2), 1-12.
- Nqoc, S. P. (2018). The effectiveness of using powerpoint in teaching English: A survey on students' performance. *Conference paper at HO Chi Minch City*.
- Obianuju, R. O. (2017). Effects of constructivist based instructional approach on college of Education students' achievement and interest in the English Language essay writing in South-East Zone, Nigeria [Unpublished PhD thesis]. University of Nigeria, Nsukka.

- Ode, G. O. (2020). Errors in note-taking: implications for learning achievement in English Language among secondary school students. *Nigerian Journal of Trends in Language, Arts & Social Sciences Education*, 1(1), 26-36.
- Ogeyik, C. M. (2016). The effectiveness of PowerPoint presentation and conventional lecture on pedagogical content knowledge attainment. *Innovation in Education and Teaching International*, 54(5), 503-510.
- Opoh, D. A. (2023). Mathematics teachers' technological skills and teaching effectiveness in senior secondary schools in Ogoja Education Zone of Cross River State, Nigeria [Unpublished M. Ed Thesis]. University of Calabar, Calabar, Nigeria.
- Ramadhan, C. (2017). The effect of using 5Es model on students' achievement in reading comprehension. Retrieved from <http://repository.umsu.ac.id>
- Tagbo, G. (2015). Effect of 5Es constructivist instructional approach on students' achievement in and attitude to Chemistry in senior secondary schools [Unpublished M. Ed thesis]. University of Nigeria, Nsukka.
- Ukume, G. D. & Agbinya, G. A. (2019). Comparative effectiveness of two collaborative learning strategies in improving students' achievement in expository essay writing. *Nigerian Journal of Literacy & English Education (NIJOLEE)*, 1(2), 1 – 9.
- Uwalaka, A. J. & Offorma, G. C. (2015). Effect of constructivist teaching method on students' achievement in French listening comprehension in Owerri-North LGA of Imo State, Nigeria. *Journal of Education and Practice*, 3(1), 11-19.
- Vyas, P. & Sharma, S. (2014). A study on the efficacy of PowerPoint for writing instruction. *International Journal of Instructional Technology and Distance Learning*, 11(8), 29-42.
- Wordu, H. & Okwu, N. E. (2020). Effect of 5Es constructivist instructional strategy on social studies students' academic achievement in junior secondary schools in Rivers State, Nigeria. *International Journal of Innovative Social & Science Education Research*, 8(3), 57-69.