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Effect of Blended Learning Approach on Secondary School Students' Interest, Motivation and Academic Achievement in English Language in Anambra State

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ABSTRACT

This study investigated the effect of Rotational Model of Blended Learning approach on secondary school students' interest, motivation and academic achievement in English Language in Anambra State. Four research questions guided the study while four null hypotheses were formulated and tested at .05 alpha level. The design of the study was quasi-experimental, specifically, pre-test, post-test non equivalent control group design. The population of the study consisted of 6,052 Senior Secondary School two (SS 2) students from the 49 public secondary schools in Nnewi Education Zone. The sample size comprised of 105 SS 2 students from two out of 49 co-education public secondary schools in Nnewi Education Zone. Simple and purposive sampling techniques were used at different stages of sampling. Three instruments namely; English Language Interest Scale, English Language Motivation Scale and English Language Achievement test were used for data collection. The instruments were validated by three experts, two from the Department of Educational Foundations and one from the Department of English Language and Literary Studies all from Nnamdi Azikiwe University, Awka. Cronbach Alpha was used to determine the Internal consistency of the English Language Interest scale and English Language motivation scale which yielded an overall co-efficient of 0.74 and 0.88 respectively. Kudar-Richardson 20 (KR-20) was used to check the Internal consistency of the English Language Achievement test and the reliability co-efficient of 0.87 was obtained. The experimental group were taught using the rotational model of blended learning approach while the control group were taught with the conventional lecture method. Data collected were analyzed using mean, standard deviation and ANCOVA. The findings of the study revealed that Students who were taught English Language using rotational model of blended learning approach achieved Significant higher mean score than their counterparts taught using Conventional Lecture method. Gender had significant effect in the achievement of students taught English Language using rotational model of blended learning approach but also there was Significant Interactive effect of teaching methods and gender on the achievement of students in English Language. It was concluded that rotational model of blended learning approach is effective in teaching English Language to Secondary School Students. It was recommended among others that secondary school teachers particularly English Language teachers should be encouraged to adopt the use of rotational model of blended learning approach in the teaching of English Language as it have been found to be effective means of instructional delivery. Also, suggestions for further studies were proffered.

Keywords: Learning; Rotational model of blended learning; English Language; Achievement; Secondary schools; Anambra State

INTRODUCTION

Education is universally recognized as the backbone of national development. Every nation aspires to build a knowledgeable, skilled and responsible citizenry capable of contributing to economic growth, social stability and global competitiveness. In pursuit of these goals, nations desire education systems that are accessible, inclusive, relevant and future-focused which will equip every child not just with literacy and numeracy, but with critical thinking, creativity and digital skills. The Nigerian education system is also in

line with this pursuit. The system seeks to produce graduates who are not job seekers but job creators by strengthening technical, vocational and ICT skills that will align with this goal.

In achieving the objective of education system, more emphasis should be made on the proper and effective teaching of some core subjects like English Language. In Nigeria's educational system, English Language Proficiency holds a paramount position. It serves as the primary language of instruction, administration, and communication across various sectors (Akindale, Olarundun, and Akano, 2022). In Anambra State, as in the broader Nigerian context, mastery of English Language is not only crucial for academic success but also for socioeconomic mobility and participation in national and international spheres (Olusola, 2023). Therefore Understanding the specific challenges related to English Language education in Anambra State is essential. Such understanding sheds light on the unique context within which the study's findings will be applied thereby enhancing its relevance and potential impacts on educational practices and policies.

English Language is vital for national cohesion given that none of the indigenous languages has been able to successfully address the nation's linguistic diversity (Mekuluwa, 2018). Despite the relevance of English Language in Nigerian education system and the importance accorded to English Language for the proper development and functioning of citizens, in Anambra state, interest, motivation and academic achievement of the students in English language is still poor. Considering the length of years of learning English Language in Nigerian schools, it is expected that by now, all students should be excelling in the subject with at least a credit pass level. However, this is yet to be achieved as some of the students still fail or get ordinary pass level. For instance, Anambra state analysis of students' achievement in English Language for four consecutive years for May/June, West African Examination Council (WAEC) Senior School Certificate Examination (SSCE) from 2022-2025 showed that there was improvement in students' achievement but not as expected, judging by the percentage of candidates that obtained credit pass, ordinary pass as well as those that failed (see Appendix N P. 189)

The percentage of students' achievement in English Language revealed that in 2022, out of 27,800 candidates examined for English Language in May/June WAEC SSCE only 59% got credit pass and above, 30.7% got pass while 11.5% failed. In 2023, out of 29,137 candidates that took the examination, 55% got credit pass and above, 19.5% got pass while 25.4% failed. Moreover, in 2024, out of 32,729 examined, 51% got credit pass and above, 17.5% got pass while 31.5 failed.

Finally, in 2025, out of 35,625 candidates that took the examination 49.5 got credit pass and above, 29.4% got pass while 21.1% failed. Regarding the analysis above, there is continuous slight downward trend in the students' achievement. As indicated, the analysis of the result revealed that not very many of the candidates obtained credit pass in English Language. This showed that there is still need for improvement considering the fact that without a credit pass in English Language, a candidate cannot gain admission to any tertiary institution in Nigeria (NPE, 2013).

The WAEC Chief Examiners report of 2022 and 2023 indicated so many weaknesses in the performance of students in areas like good sentence construction, essay writing, basic vocabulary and so on. Proffering suggestions to remedy these weaknesses, the Chief Examiner's report suggested that teaching method that will cater for the various needs of the students be adopted. It also emphasized that topics like the essay writing, good sentence construction, and grammer, etc should be taught properly to the students and these formed the content of the topics taught during this study (see Appendix M, P. 185)

The poor achievement of students in English Language calls for serious action to remedy the situation. Students' achievement in English Language has always been a topic for discussion among teachers, parents, counsellors and researchers. In the past, several attempts have been made at solving these problems but such efforts had focused more on ways of improving the popular conventional methods of teaching English Language.

Researchers such as Nwankwo and Akudolu (2024) postulated that some factors may cause this poor performance in the subject which among others includes teaching methods, interest of the students, motivation to learn, attitude, student-teacher relationship, attitude of the teacher, and lack of the use of innovative teaching method in the classroom. It seems that little or no attention has been given to the use of innovative teaching methods such as the use of laptops, palmtops, mobile phones, televisions, video conferencing and other digital tools while integrating them with face-to-face learning in English Language curriculum delivery. Good enough, in this 21st century teaching and learning have been revolutionized by making it more interactive and learner centered with the introduction of ICT gadgets into modern

classrooms. These ICT gadgets provide myriads of innovative technologies that help in transforming learning from teacher-centred and text-bound classroom into blending it with ICT innovative strategies.

The instructional approach adopted by the teacher often determine the students level of interest, motivation and achievement in a particular subject. There is a strong positive relationship between teachers' level of knowledge of subjects and levels of subject knowledge achieved by their students (Adigwe, Akudolu, Nwana and Ikeanumba, 2024). For any subject to be effectively taught, there should be trained and qualified teachers employing appropriate instructional strategies. This implies that for the effective teaching and learning of English Language, appropriate learning approaches that will be instructive and appealing to students, arouse their interest as well as improve their motivation to enable them achieve excellent results should be adopted (Nwankwo and Uche, 2024). The use of learning approaches that require students to be more actively involved in the learning process is therefore strongly advocated in secondary schools in Nigeria especially in Anambra State.

Learning by doing and use of computer aided instruction could be the most suitable form of instructional method for teaching and learning at the senior secondary school since we are in computer age now. Also integrating ICT into classroom instruction could boast achievement, interest and promote motivation of students in secondary school subjects like English Language. This means that teaching approach could affect students' performance greatly. According to Ikwuka and Adigwe (2021), approach can be viewed as the type of activity pursued by teachers and students together in a group work, surveys, demonstrations, films and TV viewing, which are intended to help students achieve stated lesson objectives or learning outcomes. Esomonu and Ikeanumba (2021) stated that reliance on the traditional conventional teaching method has been criticized as it molds students into passive recipient of information transmitted by the teacher and makes them highly dependent on the teachers for much of their learning needs.

Conventional method of teaching is a teacher-led method of instruction which some teachers prefer to use in their lesson delivery. Conventional methods according to Ikwuka and Adigwe (2021) amongst others include; discussion, project method, demonstration and discovery method. These methods are popular and often used by teachers to disseminate information, knowledge and skills to students (Chikwendu and Okoli, 2020). Conventional Lecture Method (CLM), according to Esomonu and Ikeanumba (2021) is a traditional method of teaching in which knowledge flows from the teacher to the students. It is a process in which teachers do the talking while the learners absorb by listening passively. This method allows the use of board with chalk/marker supported by oral demonstration, narration and explanation during classroom lesson. The conventional method of teaching provides a structured learning environment where lessons are presented in a clear and sequential manner, making it easier for students to understand. It promotes effective classroom management and enable students receive immediate explanation and clarification of difficult concepts. Most importantly, it allows for proper coverage of the syllabus.

Gambari, Yusuf and Balogun (2022) stressed that most of Nigerian classrooms from pre-primary to tertiary institutions are dominated by chalkboards and marker-board. They further argued that this method of conventional instructional delivery has the limitation of ineffectiveness for very large group instruction, inability to allow information storage for future use, inability to accommodate illustrations to support the teaching; health hazard for teachers from chalk particles and it makes learning uninteresting and so on. In other words, the traditional 'chalk and talk' or lecture method has a way of promoting passive learning among the students. Nwankwo and Uche (2024) opined that the conventional method seems not to be an innovative way of learning especially among students to whom technology has become the extension of their fingers. Conventional method of teaching English Language is more teacher-centered than student-centered and is characterized by face-to-face teaching by a teacher with no significant teacher-students interaction nor technology for online learning. Interestingly, the use of technology for teacher-students interaction can be facilitated through blended learning approach (Singh, 2021).

Blended learning approach is a teaching strategy where teaching is done online using laptops, palmtops, mobile phones, televisions, video conferencing and other digital tools while integrating them with face-to-face learning (Asward, Hamid and Syafryadin, 2020). It is an online and offline learning approach that facilitates the delivery of instruction through the use of computers, projectors, laptops. Similarly Diovu, Ogbonna and Eze (2021) and, Enwemasor and Charles - Odili (2022) defined blended learning as an educational method that promotes the use of multiple means for the transmission of knowledge and experience to learners with a view to achieving the best output of learning. Blended learning approach is not entirely new in the educational landscape as various scholars (Norberg and Sicilia,

2018; Armatas, and Ise, 2020; and Ian and Sumintono, 2021) have considered it as the “new norm” in educational technology and course delivery.

Nwankwo and Uche (2024) identified four major models of blended learning viz: rotation model, flex model, self-blend model and enriched virtual model. This study focuses mainly on the rotational model of blended learning approach. Rotational Model of blended learning is an approach where students rotate between different learning environments including online, on a fixed schedule or at the teacher's discretion. It is designed to balance face-to-face instruction with digital tools, promoting engagement, flexibility and personalized learning. Here, students rotate through different learning stations such as teacher – led instruction, online learning group work, and individual practice. In this model, each station is designed to achieve a particular instructional objective. For example, one station may involve online learning using computers or tablets, another may involve direct teaching by the teacher, while another may focus on collaborative learning or practical exercises. Rotational model of blended learning is learner centered because students actively participate in various learning activities instead of remaining passive listeners throughout the lesson and this results to a better achievement, improved interest and motivation in English Language.

Interest refers to someone's feelings for something for which they expend time, time and energy. Interest in academic domain (i.e. academic interest) is usually characterized by stable individual trends and attitude towards academic subjects, which may yield deep engagement in learning and thus high academic performance. It is the enthusiasm, curiosity, attention, and willingness students show towards educational activities and subjects. Adigwe and Akudolu (2024) define interest as a relational construct between a person and an object. Interest is a vital factor in effective teaching and learning because students who are interested in learning participate actively, concentrate better and achieve higher academic success. The researchers added that students' interest varies in how deeply or permanently they are situated among students. However, the use of digital tools in rotational model of blended learning approach could arouse and sustain interest in learning. Interest can be situational when it is triggered temporarily by features of the immediate situation (Amadi, 2016). Furthermore, Amadi stated that unusual sights, sounds, or words are capable of stimulating situational interest. However, in many conventional classrooms, students often exhibit low interest in English Language due to limited interaction and lack of engaging instructional materials. The integration of multimedia resources in the rotational model of blended learning approach makes English lessons more engaging by allowing students to practice speaking, reading and writing skills in a supportive environment. This active involvement increases their confidence, interest and intrinsic motivation to learn English Language.

Motivation is the arousal of behaviour which is directed towards a particular goal (Onuorah, Okeke and Ikechukwu 2019). Motivation is energizer or driving force, desire or urges that cause an individual to behave in an expected way (Adesina, Iwuno and Umeozor, 2023). Motivation is the complex forces, incentives, needs, tensions and other mechanisms which energize, catalyse and sustain human behaviour to carry out a particular action (Iwuno 2016). Motivation moves students to activity and willingness to do something. it acts as fuel which provides energy for human activities and spurs readiness to action and is the most valuable instrument or tools that bring about changes in students (Adesina, Iwuno and Umeozor, 2023). Motivation is vital in an individual's academic accomplishment as it is seen as a student's attempt to complete a task, committing the necessary effort, and sustaining it. Learners' motivation is shown in their selection of academic assignments, the amount of time and effort they put into each activity, and their tenacity in academic studies. Students can also overcome problems in the learning process if they are motivated (Bakar, Alsmadi, Ali, Shuaibu, and Solahudin, 2022).

Students' motivation in English Language plays a vital role in determining their level of engagement, persistence, and academic achievement. The rotational model of blended learning significantly enhances students' motivation in English Language by introducing variety and flexibility into the teaching and learning process. It promotes active participation and learner autonomy, which are key drivers of motivation. The use of digital tools such as videos, interactive quizzes, and language apps makes learning English Language more interesting and enjoyable and consequently increase their motivation and academic achievement in English Language.

Academic achievement is an important factor in the teaching and learning of any subject including English Language. Academic achievement is the outcome of instruction; it depicts the extent to which the goal of instruction has been achieved both by the teacher and by the students (Mbaegbu, Ikeanumba and

Anazodo, 2023). Academic achievement is the knowledge acquired and skills developed in schools. It describes the scholastic standing of the student at any given time. The scholastic standing could be expressed in terms of scores obtained in tests and examinations assessment whether internal or external. Rivers (2018) operationalized academic achievement in his study as grade point average obtained from self-report questionnaire while Texas Education Agency (TEA, 2018) sees academic achievement as learners Standardize Value of Cumulative Grade Point Average (SVCGPA) in college. Academic achievement as viewed by Esomonu and Ikeanumba (2021) is the observed and measured aspects of students' mastery of skills and subject contents as measured with valid and reliable test.

Students' academic achievement in English Language is a key indicator of the effectiveness of any instructional approach, as it reflects the extent to which learners have acquired language skills. The rotational model of blended learning enhances students' academic achievement, through rotation among stations, students are exposed to diverse instructional strategies which provides multiple opportunities for practice and reinforcement. It also increases students' participation and commitment to learning tasks, which directly contributes to improved performance. Therefore, the rotational model of blended learning provides an effective approach for enhancing students' academic achievement, supportive, and learner-centered environment. Academic achievement of students in English Language maybe influenced by students' gender.

Gender is a potent factor in students' interest, motivation and academic achievement which has been a concern of various researchers over the years. However, there have been inconsistencies in their findings. For instance, Reardon, Kalogrides, Fayle, Podolsky and Zarate (2018) observed a significant difference in the performance of male and female students in favour of the females in essay writing. In similar vein, Akabogu and Ajiwoju (2018) found that gender had significant effect on students' achievement in English vocabulary in favour of females while Nwogba (2018) found that female pupils in both public and private primary schools achieved better than male pupils in English Language common entrance examination. Attah and Ita (2017) found out that gender has no significant influence on senior secondary school students' academic achievement in English Language. On the other hand, Abdullahi and Ado (2015) found out that significant gender difference exists in students' performance in English Language.

The foregoing trend could be traceable to the fact that while female students associated comprehension with a sense of creativity and relaxation, male students associated it principally with usability. Thus, it will be research-worthy to find out the effect of rotational model of blended learning approach on secondary school students' interest, motivation and academic achievement in English Language considering their gender as it appears to be under researched to the researchers' knowledge. It is in view of the foregoing that the researcher deemed it expedient to fill this gap in Nnewi Education Zone of Anambra State

Research Questions

The following research questions guided the study.

1. What is the difference in the mean interest scores of secondary school students taught English Language concepts using rotational model of blended learning approach and those taught same concept using conventional method?
2. What is the difference in the mean motivation scores of secondary school students taught English Language concepts using rotational model of blended learning approach and those taught same concepts using conventional method?
3. What is the difference in the mean achievement scores of secondary school students taught English Language concepts using rotational model of blended learning approach and those taught same concepts using conventional method?
4. What is the difference in the mean achievement scores of male and female secondary school students taught English Language concepts using rotational model of blended learning approach?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance

1. There is no significant difference in the mean interest scores of secondary school students taught English Language concepts using rotational model of blended learning approach and those taught same concepts using conventional method.

2. There is no significant difference in the mean motivation scores of secondary school students taught English Language concepts using rotational model of blended learning approach and those taught same concepts using conventional method.
3. There is no significant difference in the mean achievement scores of secondary school students taught English Language concepts using rotational model of blended learning approach and those taught same concepts using conventional method.
4. There is no significant difference in the mean achievement scores of male and female secondary school students taught concepts in English Language using rotational model of blended learning approach.

RESEARCH METHOD

The study adopted a quasi-experimental design, intact classes were used. Nworgu (2015) described quasi-experiment with intact class as an experiment used by the researcher where random assignment of the participants to experimental and control groups is not possible for the researcher without disrupting the academic activities of the school. Specifically, a pre-test, post-test non-equivalent control group design involving 2x2x3 factorial model was employed in the study. The design has two factors (independent variables) which are instructional strategies and gender. Instructional strategies had two levels which are as follows: (teaching English Language using rotational model of Blended learning approach for the experimental group and teaching English Language using conventional method for the control group) together with gender as a moderating variable having two levels (males and females). The dependent variables used are the secondary school students' interest, motivation and academic achievement. Gorvine, *et al.* (2019) was of the view that factorial design involves having more than one independent variable in a study. The reason for the choice of design was informed by the fact that the participants was already in their classes and the school authority may not allow disrupting them. The study was carried out in Nnewi Education Zone in Anambra State. Nnewi is a commercial and industrial city in Anambra State, south-eastern Nigeria. It is the second largest city in Anambra state after Onitsha. Nnewi Education Zone is one of the six Educationa Zones in Anambra State, alongside Aguata, Awka, Ogidi, Onitsha and Otuocha Zone. Geographically, Nnewi Education Zone covers several Local Government Areas including Nnewi North, Nnewi South, Ihiala and Ekwusigo. Nnewi Education Zone has a combination of rural, semi-urban and urban locations with its student's population coming from a variety of socioeconomic backgrounds. Choosing Nnewi Education Zone for this study offered several advantages. Firstly, the zone provides access to a diverse student population, allowing for comprehensive analysis across different backgrounds. Secondly, collaboration with English Language teachers in the zone enhances the study's validity and provides valuable insights into instructional practices. Lastly, conducting the research in Nnewi Educational Zone ensures the findings directly address the local educational context, leading to potential immediate impact on curriculum planning and instructional strategies within the zone. The population of the study consists of 6052 (2,183 males and 3,869 females) senior secondary school Two (SS2) students from all the 49 public secondary schools in Nnewi Education Zone of Anambra State in 2025/2026 academic session. SS2 students were chosen because they are academically mature and have built enough foundation to benefit meaningfully from a rotational model of blended learning approach. They were not yet facing the pressure of final exams.

A multi-stage sampling procedure involving purposive and simple random sampling techniques was employed in selecting the sample of the study**.** At the first stage, purposive sampling techniques was used to identify schools that possessed functional computer facilities necessary for the implementation of the rotational model of blended learning approach used in the study. Consequently, only schools with operational computer laboratories were selected. At the second stage, from the schools that met the required ICT criteria, two co-educational public educational secondary schools were selected using simple random sampling technique through balloting. At the third stage, the two selected schools were randomly assigned to treatment conditions. The school with adequate computer facilities was assigned to the experimental group while the other school served as the control group. At the fourth stage, the SS2 students in the selected schools consisted the accessible population for the study. From this accessible population, one intact class was selected from all SS2 classes from each school using simple random sampling. Through the application of these procedures, a total sample size of 105 students was obtained. The experimental group consists of 55 students (36 males and 19 females) while the control group consists

of 50 students (32 males and 18 females). Three Instruments were used for data collection for the study. These are, English Language Interest Scale (ELIS), English Language Motivation Scale (ELMS), and English Language Achievement Test (ELAT). The English Language Interest Scale (ELIS) is a 17-item interest scale developed by the researcher which is provided with a 5-point Likert scale of Strongly Agreed =SA, Agree=A, Disagree=D, and Strongly Disagree=SD The students indicated their extent of agreement or disagreement on the 17 statements. The researcher included some of the concepts that were taught during the teaching of the students in the items.

English Language Motivation Scale (ELMS) was adapted from Njiru (2003) who developed a scale for measuring academic motivation using the Rasch Model. The original instrument measured three main aspects namely: striving for excellence, desire to learn and personal incentives. Striving for excellence has six sub-aspects: standards (Items 1-3), goal (Items 4-7), tasks (Items 9-14), effort (Items 15-19), values (Items 20-21) and ability (Items 22-25). Desire to learn has sub-aspects: interest (Items 26-31), learning from others (Items 32-37), responsibility for learning (Items 38-39). Personal incentives has three sub-aspects: extrinsic rewards (Items 40-42), intrinsic reward (Items 43-46), and social rewards (Items 47-50). The modification to the original document was achieved by removing aspects not needed in assessing motivation in English Language and 25 items of ELMS was arrived at. Again the response option was developed by the researcher which deviated from the original instrument that required the students to rate themselves on 'what they aim for' and 'what they actually do' using a scale of one to four. The researcher instead used a four-point scale of Strongly Agreed =SA, Agree =A, Disagree =D, and Strongly Disagree =SD.

The ELAT consists of 50-item multiple choice test adapted from WAEC past question papers. The 50-item multiple choice tests was based on expository essay, creative writing, debate, and phrasal verbs which was the concepts taught to the students in this study. 10 items was be drawn from words associated with building construction and listening to debate, 10 from listening for details reading comprehension, 10 from words associated with environment and active and passive voices, 10 from unstressed vowel sounds and syllabus, 5 from modifiers and report writing and 5 from consonant clusters and speech writing. The weighting was based on the scope of the content area. The ELAT was used for both the pretest and the posttest.

The English Language Achievement Test (ELAT) with 50 items was validated by three experts, one from Curriculum Studies Unit, one from Educational Measurement and Evaluation Unit, both from Department of Educational foundations, and the third was a lecturer from the Department of English Language and Literary Studies, Faculty of Arts, all from Nnamdi Azikiwe University Awka. As a guide lesson plan, research purpose, research questions and hypothesis was given to the Validators for the Validation exercise. The experts gave some corrections which were affected before the final instrument was drafted. The English Language Interest Scale (ELIS) which had 25 statements as initial was also sent to the same validators. The experts were specifically requested to examine the ELIS items with respect to; i. the extent to which the statements on the ELIS access interest in the unit of study, ii. the suitability of the language used in the ELIS with respect to the students level. Following the face and content validation, the items were reviewed and 17 statements were finally chosen to constitute the ELIS.

The English Language Motivation Scale (ELMS) which had 35 items statements was also sent to the same validators. The experts were specifically requested to find out the suitability of the language used in the construction of the ELMS with regard to the students' level of understanding; and extent to which the statements on the ELMS assess motivation of students in the area of study. After the validation, some of the items were modified while some were deleted and 25 items were arrived at. Some of the corrections made by the validators include: inclusion of some omitted items that were supposed to be part of the items, deletion of item that was not testing any of the concepts taught and restructuring of some questions. These corrections given by the validators were properly effected and used to produce the final draft of the instruments. Reliability was concerned with the degree of consistency of the measuring Instrument. The English Language Interest Scale was administered to 40 SS2 students in an intact class in a School in Aguata Zone which has homogenous culture as the research area. The results gotten was correlated using Cronbach Alpha method and a reliability index of 0.74 was obtained. The English Language Motivation Scale Items were also trial-tested. The ELMS were administered to the same students and the result gotten was subjected to analysis using Cronbach Alpha method and a reliability index of 0.88 was obtained.

The English Language Achievement Test (ELAT) was administered to the same students. Two weeks later the same test was re-administered to the same students and the reliability coefficient of the Instrument was established using Kudder Richardson Formula (KR-20) and a reliability index of 0.87 was established. This shows that the Instrument is reliable.

RESULTS AND DISCUSSION

Research Question 1

What is the difference in the mean interest scores of secondary school students taught English Language concepts using Rotational model of blended learning approach and those taught same concept using conventional method?

Table 1

Mean Interest Scores of Secondary School Students Taught English Language Concepts Using Rotational Model of Blended Learning Approach (RMBLP) and Those Taught Same Concept Using Conventional Method (CM)

Group	N	Pre-test		Post-test		Mean gain
		$\bar{X}$	SD	$\bar{X}$	SD	
BLA	55	8.20	2.01	14.33	1.96	6.13
CM	50	5.10	2.22	10.18	2.12	5.08
Mean Difference		**3.10**		**4.15**		**1.05**

Table 1 shows the interest scores of secondary school students taught English Language concepts using Rotational model of blended learning approach have 8.20 as the pre-test mean score and 14.33 as the post-test mean score with 2.01 and 1.96 respectively as their standard deviation with a gain in mean of 6.13. The interest scores of secondary school students taught English Language concepts using conventional method have 5,10 as the pre-test mean score and 10.18 as their post-test mean with 2.22 and 2.12 respectively as their standard deviation, with a gain in mean of 5.08. The analysis revealed that the mean interest scores of students taught with blended learning approach is higher than those taught using the conventional method because the gain in mean of 6.13 for the experimental group is greater than 5.08 gain in mean for the control group. The mean difference is 1.05 in favour of experimental group. The standard deviation of 1.96 for the experimental group is smaller than the 2.12 for the control group. This implies that the posttest mean interest scores of the experimental group is more homogenous than that of the control group.

Research Question 2

What is the difference in the mean motivation scores of secondary school students taught English Language concepts using Rotational model of blended learning approach and those taught same concepts using conventional method?

Table 3

Mean Motivation Scores of Secondary School Students Taught English Language Concepts Using Rotational Model of Blended Learning Approach (RMBLA) and Those Taught Same Concept Using Conventional Method (CM)

Group	N	Pre-test		Post-test		Mean gain
		$\bar{X}$	SD	$\bar{X}$	SD	
BLA	55	10.02	2.05	18.30	2.08	8.28
CM	50	6.12	2.14	12.10	2.18	5.98
Mean Difference		**3.90**		**6.20**		**2.30**

Table 3 shows the motivation scores of secondary school students taught English Language concepts using rotational model of blended learning approach have 10.02 as the pre-test mean score and 18.30 as the post-test mean score with 2.05 and 2.08 respectively as their standard deviation with a gain in mean of 8,28. The motivation scores of secondary school students taught English Language concepts using conventional method have 6.12 as the pre-test mean score and 12.10 as their post-test mean with 2.14 and 2.18 respectively as their standard deviation, with a gain in mean of 5.98. The analysis revealed that the mean motivation scores of students taught with blended learning approach is higher than those taught using the conventional method because the gain in mean of 8.28 for the experimental group is greater than 5.98 gain in mean for the control group. The mean difference is 2.30 in favour of experimental group. The standard deviation of 2.08 for the experimental group is smaller than the 2.18 for the control group. This implies that the posttest mean interest scores of the experimental group is more homogenous than that of the control group.

Research Question 3

What is the difference in the mean achievement scores of secondary school students taught English Language concepts using rotational model of blended learning approach (rotational model) and those taught same concepts using conventional method

Table 5

Mean Achievement scores of secondary school students taught English Language concepts using Rotational model of blended learning approach (RMBLA) and those taught same concept using conventional method (CM)

Group	N	Pre-test		Post-test		Mean gain
		$\overline{X}$	SD	$\overline{X}$	SD	
BLA	50	12.08	2.12	20.50	2.20	8.42
CM	55	8.42	2.22	14.10	2.42	5.68
Mean Difference		**3.66**		**6.40**		**2.74**

Table 5 shows the achievement scores of secondary school students taught English Language concepts using blended learning approach have 12.08 as the pre-test mean score and 20.50 as the post-test mean score with 2.12 and 2.20 respectively as their standard deviation with a gain in mean of 8.42. The achievement scores of secondary school students taught English Language concepts using conventional method had 8.42 as the pre-test mean score and 14.10 as their post-test mean with 2.22 and 2.42 respectively as their standard deviation, with a gain in mean of 5.68. The analysis revealed that the mean achievement scores of students taught with blended learning approach is higher than those taught using the conventional method because the gain in mean of 8.42 for the experimental group is greater than 5.68 gain in mean for the control group. The mean difference is 2.74 in favour of experimental group. The standard deviation of 2.20 for the experimental group is smaller than the 2.42 for the control group. This implies that the posttest mean interest scores of the experimental group is more homogenous than that of the control group.

Research Question 4

What is the difference in the mean achievement scores of male and female secondary school students taught English Language concepts using rotational model of blended learning approach

Table 6

Mean Achievement Scores of Male and Female Students taught English Language using Rotational Model of Blended Learning Approach (RMBLA)

Gender	N	Pre-test		Post-test		Mean gain
		$\bar{X}$	SD	$\bar{X}$	SD	
Male	36	18.20	2.21	36.08	2.24	17.88
Female	19	14.02	2.32	29.40	2.42	15.38
Mean Difference		**4.18**		**6.68**		**2.50**

Data analysis in Table 6 reveals that the male students had mean scores of 18.20 and 36.08 for their pre-test and post-test respectively with standard deviation scores of 2.21 and 2.24 for their pre-test and post-test scores. Also, female students have mean scores of 14.02 and 29.40 for their pre-test and post-test respectively with standard deviation scores of 2.32 and 2.42 for their pre-test and post-test scores. The gain in mean of 17.88 for male students was higher than that of their female counterpart with 15.38 gain in mean. This means that the mean achievement scores of male students taught using blended learning approach is higher than their female counterparts taught using the same method. The posttest standard deviation of (2.24) for the male students is lower (2.42) than that of the female counterpart which shows a more uniform distribution of scores for the male students.

Test of Statistical Hypotheses

Hypothesis 1
There is no significant difference in the mean interest scores of secondary school students taught English Language concepts using rotational model of blended learning approach and those taught same concepts using conventional method

ANCOVA test of significant difference in the mean interest scores of secondary school students taught English Language concepts using rotation model of blended learning approach and those taught same concept using conventional method

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1014.434[a]	2	407.217	102.108	.000
Intercept	1336.755	1	1336.755	390.385	.000
Interest	211.098	1	211.098	67.876	.000
Treatment	7.982	1	7.982	1.502	.000
Error	558.144	143	3.424		
Total	75044.000	146			

Corrected Total	572.578	145

a. R Squared = .025 (Adjusted R Squared = .013)

Table 7 reveals that there is no significant difference in the mean interest scores of secondary school students taught English Language concepts using rotation model of blended learning approach and those taught same concept using conventional method; F(1,145) = 4.160, P= 0.064> 0.050.Therefore, the null hypothesis is not rejected, thus, there is no significant difference in the mean interest scores of secondary school students taught English Language concepts using rotation model of blended learning approach and those taught same concept using conventional method.

Hypothesis 2

There is no significant difference in the mean motivation scores of secondary school students taught English Language concepts using rotational model of blended learning approach and those taught same concepts using conventional method.

ANCOVA Test of Significant Difference in the Mean Motivation Scores of Secondary School Students Taught English Language Concepts Using Rotational Model of Blended Learning Approach

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1700.332[a]	2	425.083	135.821	.000
Intercept	1792.021	1	1792.021	572.581	.000
Motivation	297.305	1	297.305	56.184	.000
Treatment	1634.888	1	1634.888	555.374	.000
Error	901.361	289	3.130		
Total	109366.000	292			
Corrected Total	2601.693	291			

a. R Squared = .654 (Adjusted R Squared = .649)

Table 10 reveals difference in the mean motivation scores of secondary school students taught English Language concepts using blended learning approach; F(1,291) = 555.374, P= 0.0001 < 0.05. Therefore, the null hypothesis is rejected, therefore, there is significant difference in the mean motivation scores of secondary school students taught English Language concepts using blended learning approach.

Hypothesis 3

There is no significant difference in the mean achievement scores of secondary school students taught English Language concepts using rotational model of blended learning approach and those taught same concept using conventional method

ANCOVA Test of Significant Difference in the Mean Achievement Scores of Secondary School Students Taught English Language Concepts Using Rotation Model of Blended Learning Approach and Those Taught Same Concept Using Conventional Method

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.

Corrected Model	1455.007[a]	2	722.504	100.473	.000
Intercept	4279.875	1	4369.875	607.685	.000
Achievement	.397	1	.397	.055	.815
Treatment	1308.402	1	1308.402	181.949	.000
Error	826.968	88	7.191		
Total	164629.000	90			
Corrected Total	2381.975	89			

a. R Squared = .737 (Adjusted R Squared = .730)

Table 13 reveals a significant difference in the mean achievement scores of secondary school students taught English Language concepts using rotational model of blended learning approach and those taught same concept using conventional method; F(1,89) = 181.949, P= 0.000 < 0.05. Therefore, the null hypothesis is rejected, therefore, there is significant difference in the mean achievement scores of secondary school students taught English Language concepts using blended learning approach and those taught same concept using conventional method.

Hypothesis 4

There is no significant difference in the mean achievement scores of male and female secondary school students taught concepts in English Language using rotational model of blended learning approach

ANVOCA Test on Significance of Difference in the Mean Achievement Scores of Male and Female Secondary School Students Taught Concepts in English Language Using Rotational model of Blended Learning Approach.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1011.125[a]	2	5.562	102.007	.000
Intercept	1497.950	1	1497.950	540.606	.000
Treatment	198.879	1	198.879	66.190	.000
Gender	8.636	1	8.636	3.117	.079
Error	451.652	143	2.771		
Total	75997.000	146			

Corrected Total	462.777	145

a. R Squared = .024 (Adjusted R Squared = .012)

Table 14 reveals that there is no significant difference in the mean achievement scores of male and female secondary school students taught concepts in English Language using rotational model of blended learning approach. F (1,145) = 3117, P= 0.79 > 0.050.the hypothesis is uphold. Therefore, there is no significant difference in the mean achievement scores of male and female secondary school students taught concepts in English Language using blended learning approach.

Discussion

The result revealed that the pre-test and post-test interest scores of students taught English Language using Rotational model of blended learning approach are higher when compared with those taught same concepts using conventional method. The findings of this study also indicated that, students who were taught English language concepts using Rotational model of blended learning approach showed more interest compared to students taught same concepts using conventional method. This finding agrees with Asseke and Fabinu (2022) who found that, Blended learning approach is more effective in promoting and arousing students' interest and enthusiasm in learning English language concepts than the conventional lecture method. The result revealed that the pre-test and post-test motivation scores of students taught English Language using Rotational model of blended learning approach are higher when compared with those taught using conventional method. This finding agrees with the finding of Dangwal and Lata (2017) that blended learning approach significantly enhanced students' motivation in English Language when compared to conventional method. Dangwal and Lata (2017) also stressed that blended learning helps students to increase their motivation to learn a language by practicing empathy, self-decision making, be patient when taking part in conversation, thinking critically and communicate based on experiences. Additionally, (Akbarov et al, 2018) also stated that learning a language with a device as a teaching approach can reflect positively because the good attitudes towards an approach in teaching would reflects a high level of motivation in students in English language. The result revealed that the pre-test and post-test achievement scores of students taught English Language using Rotational model of blended learning approach are higher when compared with those taught same concepts using conventional method A mean gain on the achievement of male students was also revealed. This means that Rotational model of blended learning approach significantly enhanced students' academic achievement in English Language when compared to conventional method and also favours male students than their female counterpert. This finding was in tandem with the finding of Robyn (2014) that blended learning approach enables students to gain a deeper understanding of subjects by engaging in the learning process collectively. This suggests that students exposed to rotational model of blended learning approach tend to outperform their peers instructed through conventional method. This finding agrees with the finding of Thompson, (2019) whose review indicates that, using a blended classroom led to remarkable academic performance and positive attitude that could increase interaction between teachers and learners. It was noted also that the application of blended learning could increase students' engagement and improve their performance.

CONCLUSION

This study has revealed that the rotational model of blended learning approaches had a lot of significant effect on SS 2 secondary school students' interest, motivation and achievement in English Language learning. Application of rotational model of blended learning approaches has been shown to be more efficacious than conventional method. Furthermore, this study showed that rotational model of blended learning approaches helped to improve students' interest, motivation and academic achievement in English Language learning more than students taught using the conventional method. In fact, rotational model of blended learning approaches has demonstrated its effectiveness in increasing meaningful learning in English Language because it is an activity-oriented method which involved checking and assessing individual academic confidence level at every new stage or units in knowledge never leaving a stone unturned.

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