STUDENT'S RETENTION IN LEARNING OF ENGLISH GRAMMAR: THE JIGSAW II WAY

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A B S T R A C T

Grammar is a series of principles that regulate the standard order and relationships of words in a phrase. The effectiveness of Jigsaw II pedagogical strategy on the outcome of learning English grammar in Ibadan was examined in this study. Quasi-experimental served as the research design in this study. Random sampling technique was employed to choose two secondary schools, which were randomly allocated to control and experimental groups. This study has a sample of 199 participants, with 93 Jigsaw II and 99 conventional group participants. English Grammar Test was used to measure the learning outcome of the participants and duly validated. Split-half was employed for reliability, and an index of 0.79 was obtained using Cronbach Alfa. The two hypotheses were analyzed with ANCOVA at 0.05 significant level. This study found that Jigsaw II impacted the learning outcome of English grammar students ($F(1, 189) = 67.515$, $p<0.05$). Also, the retention ability of students was significantly enhanced due to Jigsaw II being used for instruction ($F(1, 90) = 10.082$, $p<0.05$). One recommendation proposed was that Jigsaw II instructional strategy should be incorporated into teacher education programs so prospective teachers (student-teachers) acquire basic skills to design and implement this teaching strategy before graduation.

A R T I C L E I N F O

1. INTRODUCTION

Nigeria, as a nation with multiple languages, is composed of multiple ethnic communities that have occupied an intricate geographical landscape because of its past, ethnic, socioeconomic, and educational progress. The use of language encourages individuals to form identities and engage with others within and outside their immediate environment (Azikiwe, 2018). Language reflects and accumulates all forms of education, regardless of official, informal, or non-formal, by which knowledge circulates (Njoku, 2018). Language affords individuals to connect with one another, share ideas, and express their sentiments. They would be opportune to preserve and enforce productive thinking. The Nigerian socio-linguistic structure has adopted English as a second language for interpersonal interactions (Amuseghan, 2017). As a result, English is a common language and has established prominence in the corporate world, the publishing industry, and as an instructional tool in educational institutions, alongside the three critical indigenous languages (Rintaningrum, 2016; Asmara, 2020). Additionally, English has effectively positioned itself as a second language in intercultural interaction, as a vocabulary in global correspondence, and as a tool in research around the world (Babatunde, 2018; Nordquist, 2020).

English is a compulsory subject in Nigerian schools from early childhood to higher educational institutions levels of education. As an instrumental subject in the school curriculum, it not only enables students to construct and develop their communicative capabilities (Babatunde, 2018), but it also contributes to the creation and

establishment of fundamental competencies for more successful living and working, along with lifelong learning (Asmara, 2020). English language gives students a vital tool for intercultural communication, enabling them to explore cultures, advance their scientific and technical knowledge, and promote cross-cultural awareness and the feeling of global citizenship (Al-Busaidi & Borg, 2019). It also aids in the development of personal qualities and competencies (Asmawati, 2017). According to experts, learning English and becoming aware of other cultures can help students better comprehend and appreciate their language and culture (Foyewa, 2020). The curriculum of English language is integral to various academic subjects and disciplines as a teaching and learning tool (Rintaningrum, 2018). By practicing speaking, listening, reading, understanding, and writing linguistics (vocabulary, pronunciation, and grammar), students can develop and enhance their communication skills through the study of the English language (Hashim, 2018). Reading, comprehension, composition writing, oral English, and grammar are all included in the Nigerian Basic School English Language curriculum (Federal Republic of Nigeria, 2014). Grammar, as one of the curricular components, will be the focus of this research.

Grammar is essential to language learning because it is essential to all languages (Abudu, 2020). It describes a language's structure and how linguistic components are connected to make sentences (Elisa, 2016). It can also be seen as the rules that regulate the form of sentences (Fowler, 2018). Syntax is also categorised as Grammar, which concerns the formation of phrases, clauses, and sentences (Johnson, 2018). However, syntax is only one part of grammar. Meanwhile, grammar is the sum of all the rule-governed structures, forms, or patterns in a language (Damian, 2016). Grammar can be defined in several ways, including prescriptive, descriptive, rule-governed, internalized, logical, and instructional grammar (Akinbade, 2017). All these approaches are classroom aids for teachers (Lawal, 2020). According to Jabbar and Hussein (2023), learners in grammar learning deduce the grammatical pattern of sentences from supplied phrases without justification. Furthermore, studying grammar requires attention to linguistic aspects (Mandasari & Wahyudin, 2021).

A level of structural organization that can be investigated independently of phonology and semantics, grammar is an investigation of the structural characteristics that characterize human language (Abdullahi-Idiagbon, 2017). It is a set of rules that regulate the standard order and associations of languages in a phrase. English grammar is a challenging specialization for students (Najeem, 2017); its complexity leads to blunders (Elijah, 2016), and non-native speakers will only learn to comprehend its uniqueness through experience (Yusob, 2018). In basic schools, grammar is taught to provide the foundation for language abilities, including listening, speaking, reading, and writing (Ishola, 2017). It is crucial to understand and express spoken language when listening and speaking because mastering a language's grammar is vital to make grammatically acceptable statements in that language (Mandasari & Wahyudin, 2021).

The educational system may generate balanced, proactive, and creative persons through effective teaching and learning, including carefully selected activities that appeal to learners (Olajide, 2020). Deductive and inductive approaches are the two forms of grammatical instruction (Kruţicová, 2015; Iqbal et al., 2017). The deductive technique is a conventional strategy because it incorporates oral drills and written activities, whereas the inductive approach requires students to figure out the rule or generalization from a group of instances (Akinbade, 2017; Fowler, 2018). The goal of grammar training should be the accurate use of grammatical objects or sentence structures. In essence, grammar teaching should cover meanings, language patterns, and applications that lead to the accomplishment of stated goals (Ishola, 2017; Fakazli, 2021). One of the instructional strategies proposed to improve robust grammar learning is Jigsaw II instructional strategy.

Based on Elliot Aronson's Jigsaw strategy from the 1970s, Slavin (1980) developed Jigsaw II (Fasasi & Istifanus, 2022). Diversified ability arrangement, individual accountability and responsibility, group reward and motivation, and equal chance for success for all members are Jigsaw II's four defining characteristics (Suroto, 2017; Agunbiade, 2018). Work must be done in groups of five to six students. Each member of a group is given the knowledge that no other member of the group possesses, making each member "an expert" in the subject matter in question (Olayiwola, 2016; Yoshida, 2018). Those who have studied the same sections on different teams come together in "expert groups" to discuss their areas and learn how to instruct their teammates in their home group. The students then return to their original groups and alternately share what they learned with their teammates (Azmin, 2016). Each group member must master all of the material assigned to them. After receiving Jigsaw II training, teachers administer individual exams to each student, and the results are used to calculate team scores (Chukwu & Dike, 2019).

The Jigsaw II strategy encourages student participation in learning, ultimately improving students' academic and non-academic performance (Mohammed & Hamied, 2019). It enables students to create their experience with the assistance of educators, who serve as organizers of knowledge. The Jigsaw II instructional technique exhibits a student-centered learning environment (Zakary, 2017; Oliveira et al., 2019). The heightened engagement of students in learning activities and interactions among them is a vital component of Jigsaw II's

strategy. This method encourages students to be more devoted, profound, responsive, and concentrated while learning (Tabiolo & Rogayan, 2019). It also enables learners to recognize the efforts of their colleagues in the same group because each learner's intellectual contribution is vital and integral to their common purpose and outcomes (Al-Ameen, 2017).

2. THEORETICAL FRAMEWORK

The constructivist theory of learning underpins this study. The Jigsaw II classroom is intended to promote constructivist learning theory. This approach assumes that students must uncover and alter challenging concepts to make them their own (Gordon, 2009). Constructivist learning links previous knowledge to new information and incorporates each individual experience with knowledge from the past. Knowledge is developed as it transitions from an unbalanced to an equilibrium state (Lambert, 2002). If a new experience is similar to old knowledge, it will be readily integrated into the person's current knowledge and given meaning. Let's say that a new perspective is distinct from prior knowledge. The person will most likely respond in one of four ways in that situation: by rejecting the new information, changing the old information to fit the new information, or by adjusting the newly acquired understanding to fit the old information (Akpan & Beard, 2016).

Task-oriented and designed to increase both hands-on and mind-on learning for all students, a typical constructive classroom environment is aimed to prepare them for what they will face in the real world (Alesandrini & Larson, 2002). This learning environment should strongly emphasize real-world obstacles, similar to those encountered in everyday activity, and advantageous to all students (Fosnot, 2006). In a constructivist classroom, emphasis is placed on problem-based learning (PBL), real-world problem-solving, autonomous investigation, and the pursuit of personal interests. Simulation, collaborative discussion learning, think-pair-share, and the use of higher-order thinking skills are also stressed (Gordon, 2009). All students, including those with exceptional needs, benefit from a student-centered teaching approach, according to cognition, real learning, and student engagement studies. In a Jigsaw II classroom, the instructor guides the students through investigative activities that allow them to gather and internalize knowledge and then develop conclusions on their own based on happenings in their surroundings.

3. LITERATURE REVIEW

The researcher presented empirical literature on Jigsaw II instructional strategy's effect on the learning outcome, and student retention capabilities were presented for discussion in this theme.

Relating to learning out because of exposure to Jigsaw II instructional strategy, According to Fasasi and Istifanus (2022), Jigsaw II collaborative instruction was superior to the traditional lecture method in teaching and learning situations. This strategy develops activities for both educators and students to share, which offers expanded prospects for facing diverse levels of English competence and allows them to engage with less tension (Hyelin, 2021). Also, the Jigsaw II strategy helps students understand concepts better than the lecture method. In an English as a Second Language classroom, Jigsaw has been demonstrated to be successful at teaching language and communication skills (Aliu, 2018; Gulati, 2021).. According to Alawiyah (2021), the Jigsaw instructional strategy might improve students' reading comprehension in five areas: identifying the main concept, discovering specific material, making inferences, detecting references, and understanding terminology. This strategy encouraged a lot of active listening and speaking (Yinka, 2018). The Jigsaw II strategy encouraged students to remain persistent, finishing assigned activities and meeting learning objectives (Maake, 2017).

While the jigsaw activities for learning seemed to be productive, Susanti and Subekti (2020) found that the effect was not as straightforward as it first appeared. Several students reported that they did not put forth their best effort in learning independently before lessons and did not effectively contribute to the exchanges. Alamri (2018) found that participants in the Jigsaw group performed more properly in the competencies of vocabulary, speaking accuracy, pronunciation and fluency than those in the control group. Jigsaw approach has a considerable effect on the reading achievement of ESL students, according to Sabbah's (2016) research. Since Jigsaw II cooperative learning enables each group member to focus on one aspect of a topic, it may be preferable to the lecture method (Bolaji et al., 2015; Onyemah & Omoponle, 2022). Cooperative learning activities enhance students' awareness of cooperation, reflect collective wisdom, and develop the habit of cooperating with others (Lv, 2014; Musa, 2018).

In his study, Elsayed (2022) discovered substantially noteworthy variations in favor of the adoption of Jigsaw strategy 'instruction's efficacy in enhancing the reading comprehension abilities of EFL students.

Jigsaw II is a task-structured (task specialization) and incentive-structured (group incentives for individual learning, collective rewards for group product, and individual rewards) cooperative method, according to Gambari and Yusuf (2017), which makes it different from other cooperative learning strategies. When correctly applied, it yields a beneficial result. Furthermore, the Jigsaw II instructional technique does not allow free riders; each group member must accomplish most of the work (Dada, 2016; Yuliza, 2019; Kanmodi et al., 2020). The Jigsaw strategy enabled the teacher to focus on language learners, so language acquisition became interdependent. According to the study's findings (Aminu, 2016; Hannani et al., 2020), using the Jigsaw technique to accomplish learning tasks in an EFL classroom greatly increased student engagement and excitement. Group size in Jigsaw II classes can vary depending on the precise objectives of a lesson, the nature of the group work activity, the racial and cultural mix, the ability levels of learners in a classroom, space and furniture constraints, and resource availability (Ngubane, 2016; Olanrewaju & Omoponle, 2017).

On the other hand, studies on English language and students' retention ability due to classroom experience are identified and discussed. Sharma and Singh (2020) revealed the significance of Jigsaw II strategy of cooperative learning in maintaining retention of the learned content in science by high school students. The cooperative strategy enhances students' knowledge retention rather than the expository strategy (Egbodo et al., 2021). The collaborative method's learning and retention rate among students is more than the traditional method Ehsanpur & Razavi (2020). Koşar and Bedir (2018) reported that beginning learning-friendly surroundings consistent with brain-based knowledge principles permits learning objectives and knowledge retention. Lubna et al. (2017) found mastery learning significantly influenced the students' learning outcomes and retention levels. According to Gambari and Yusuf (2016), students who learned physics using computer-assisted Jigsaw II outperformed those who learned it using individualized teaching in terms of performance and retention of the material.

On the contrary, learning retention is influenced by instructional technique, but the difference is not significant (Roberta & Sabine, 2020). Gambari and Yusuf (2017) found substantial variations in group performance and attitudes; however, cooperative learning methodologies did not enhance recalling compared to the traditional way. The cooperative learning technique does not statistically influence students' information retention rates (2017).

Despite English being a second language in Nigeria, certain institutions, agencies, and organizations require Nigerians to prove proficiency in examinations such as IELTS, and TOEFL. From experiences and interactions with students who have attempted the examination, one area they require a great deal of assistance is grammar. In another instance, students' performances in external and internal examinations require improvements, and one area identified is grammar. As a result of the traditional teaching method being appropriate for a large class and not time-consuming, it has been teachers' most employed medium of instruction. This method emphasizes cognitive learning with little or no focus on the affective and psychomotor learning skills required for survival outside of the classroom by students. Therefore, teachers need to adopt instructional strategies that produce comprehensive and robust learning. The researcher investigated the student's retention in grammar through Jigsaw II instructional strategy. The objectives of this study were to examine the effect of Jigsaw II on the learning outcome of students in English grammar. Also, to examine Jigsaw II's influence on students' retention level in grammar.

The following research questions were utilized to direct this investigation based on the objectives of this study:

i. How effectively is Jigsaw II improving students' English grammar learning outcomes?
ii. How does Jigsaw II affect English grammar students' retention ability?

Research Hypotheses
H01: No significant influence exists in the learning outcome of English grammar students after exposure to Jigsaw II instructional strategy.
H02: No significant influence exists in the retention ability of English grammar students after being exposed to Jigsaw II instructional strategy.

4. METHODOLOGY

All upper basic students in Ibadan, Oyo State, served as the population. At the same time, the target population was all basic seven students in Ibadan metropolis. For this study, a non-randomized, quasi-experimental research methodology was used. In order to choose the schools and respondents for this study, a random sampling technique was used. Two basic schools were initially chosen by random sampling and then randomly assigned to the control and experimental groups. The control group in this trial received a placebo (conventional teaching approach), while the treatment package was delivered using the Jigsaw II instructional method. The treatment and control groups were both exposed to grammar-related issues taken from the

syllabus and work schedule. The intact class was employed as the sample for this study, with 192 basic seven students. The control group had 99 participants, while the experimental group had 93 participants.

Fifty multiple-choice questions from the basic school syllabus were used to measure the participant's "English Grammar Test" learning outcomes. The instructional process lasted for eight weeks, after which the test items were re-administered six weeks later to ascertain the retention ability of the participants. Approval was sought from the authorities of the sampled schools' authorities. The first week encompasses an introduction and interaction with the participants. The treatment and placebo were administered from the second to the seventh week. At the same time, the test items were administered to ascertain the learning outcome of the participants in the eight week. In other for the researcher to examine participants' retention ability, the EGT was shuffled and re-administered after six weeks. The validity of the EGT was done with the assistance of an English language and educational measurement expert. They made observations which was integrated before the final copy of the EGT was produced. The split-half method was used to test the reliability and analysis of the data with Cronbach Alpha with 0.79 index derived at 0.05 significant level. Analysis of Co-variance (ANCOVA) was used to test the two hypotheses formulated at 0.05 level of significance.

4.1   Ethical Considerations
The researcher and trained research assistants described the study's objective to the participants and their teachers. In accordance with ethical requirements, the consent form was printed in English and distributed to each participant. Once sufficient knowledge was reached by the participants and the teachers, each parent filled out the consent form and signed it, approving their ward to participate in the study. Participants' profiles and responses were kept private. One of the study's critical shortcomings was the inability to record the sessions due to confidentiality and anonymity.

5.   FINDINGS

H01: No significant influence exists in the learning outcome of English grammar students   after exposure to Jigsaw II instructional strategy.

The analysis's findings are presented in Table 1 for the mean pre- and post-test scores of the experimental and control 'groups' descriptive statistics, and Table 2 for the ANCOVA results for the difference between the experimental and control groups.

Table 1. Descriptive Statistics of Treatment and Control Groups' Pre- and Post-Test Scores

Groups		Mean	S.D.	Min	Max	Remark
Jigsaw II	Pre-test	4.53	2.24	16.00	38.00	Low
	Post-test	15.42	1.12	42.00	72.00	High
Conventional Teaching	Pre-test	6.37	2.38	22.00	40.00	Low
	Post-test	11.03	1.34	38.00	52.00	Average

Table 2. ANCOVA Results of the English Grammar Performance Difference between Students Exposed to Jigsaw II and Conventional Instructional Strategy

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1200.219[a]	2	600.110	73.005	.000
Intercept	1034.743	1	1034.743	125.880	.000
Pre-test	130.107	1	130.107	15.828	.000
Treatment	554.978	1	554.978	67.515	.000
Error	961.747	189	8.220		
Total	29102.000	192			
Corrected Total	2161.967	191			

a. R Squared = .555 (Adjusted R Squared = .548)

Significant at p<0.05

As revealed in Table 1, the learning outcome of students subjected to Jigsaw II and Conventional Instructional strategy in the pre-test was lower than in the post-test. However, in the post-test, students taught with Jigsaw II instructional strategy (15.42) better than the conventional teaching method (11.03).

Table 2's F-value of 67.515 was calculated using a p-value of 0.000 at 0.05 alpha level. The p-value (0.00) is less than the alpha threshold (0.05), hence the null hypothesis is not retained. Because of this, students who were taught English grammar using the Jigsaw II teaching strategy performed much better than those who were taught using the traditional method (F(1, 189) = 67.515, p0.05).

H02: No significant influence exists in the retention ability of English grammar students after   being exposed to Jigsaw II instructional strategy.

For testing hypothesis two, the analysis results are shown in Table 3 ANCOVA results for the retention capability of students exposed to Jigsaw II instructional strategy.

Table 3. Analysis of Co-variance Results of the Difference in the Retention ability of Students Exposed to Jigsaw II instructional Strategy

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	89.332[a]	1	89.332	9.178	.000
Intercept	663.689	1	663.689	136.370	.000
Posttest	80.601	1	80.601	16.561	.000
Re-test	56.400	1	56.400	10.082	.004
Error	262.808	90	4.867		
Total	19073.000	93			
Corrected Total	352.140	92			
a. R Squared = .254 (Adjusted R Squared = .226)					

The F-value of 10.082 is achieved, as shown in Table 3, with a p-value of 0.004 calculated at 0.05 alpha level. The p-value (0.004) is less than the alpha threshold (0.05), hence the null hypothesis is not preserved. The memory capacity of students exposed to the Jigsaw II instructional technique in English grammar differs statistically significantly (F(1, 90) = 10.082, p 0.05).

6.   DISCUSSIONS

This study found that Jigsaw II instructional strategy significantly impacts the learning outcome of students in English grammar in Ibadan metropolis. This teaching method encourages students to work collaboratively and engage in active learning, leading to better retention and comprehension of the material. Jigsaw II promotes a deeper understanding of the subject matter by breaking down complex concepts into smaller pieces and assigning each to a different group member. The Jigsaw II strategy encouraged students to remain persistent, finishing assigned activities and meeting learning objectives (Dada, 2016; Maake, 2017; Yuliza, 2019). Furthermore, this approach fosters critical thinking skills and encourages students to take ownership of their learning. Jigsaw II is an effective teaching tool to help students extend their English grammar skills and achieve academic success. This strategy develops activities for educators and students to share, which offers expanded opportunities for experiencing diverse levels of English competence and allows them to engage in less tension (Aminu, 2016; Hannani et al., 2020; Hyelin, 2021).

Also, this study revealed that Jigsaw II instructional strategy significantly impacts students' English grammar retention ability in Ibadan metropolis. This innovative teaching method involves breaking down complex concepts into smaller, more manageable pieces, which are then distributed among groups of students. Each group is accountable for mastering their assigned piece before sharing their knowledge with the rest of the class. This collaborative approach promotes a deeper understanding of the material and fosters teamwork and communication skills. The results of studies conducted on this strategy have consistently shown that students exposed to Jigsaw II outperformed their peers who received traditional instruction regarding retention and comprehension. According to Kosar and Bedir (2018), creating a conducive atmosphere for learning that adheres to the principles of brain-based learning facilitates learning goals and memory retention. These findings suggest that incorporating Jigsaw II into English grammar curricula could effectively enhance student

learning outcomes and improve academic performance. As educators continue seeking new and innovative teaching methods, Jigsaw II has emerged as a promising tool for promoting student success in the classroom. Lubna et al. (2017) and Sharma and Singh (2020) revealed the significance of Jigsaw II strategy of cooperative learning in maintaining retention of the learned content in science by high school students. However, the finding of this study is at variance with Gambari and Yusuf (2017), who found substantial variations in group performance and attitudes, however, cooperative learning methodologies did not increase retention when compared to the traditional way.

7. CONCLUSION AND RECOMMENDATIONS

Based on the findings in this study, it was determined that the Jigsaw II instructional strategy encourages students to be more devoted, profound, responsive, and focused while learning. It also encourages learners to recognize the efforts of their colleagues in the same group because each learner's intellectual contribution is vital and integral to their common purpose and outcomes. Therefore, the following recommendations were postulated;

1. Teachers should incorporate the Jigsaw II teaching technique into their classroom education to help students improve their grammar skills.

2. The Ministry of Education should organize seminars, conferences, and workshops to train educators on the knowledge, abilities, and steps involved in the Jigsaw II teaching technique.

3. Jigsaw II instructional strategy should be integrated into the curriculum of Nigerian universities' colleges of education and faculties of education so that prospective teachers (student-teachers) acquire basic skills to design and implement this teaching strategy before graduation.

4. Educational stakeholders and school administrators should ensure that the Jigsaw II instructional strategy is incorporated into the curriculum.

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