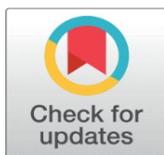


GRAMMAR PROFICIENCY OF ENGLISH MAJOR STUDENTS USING TIC-TAC-TOE STRATEGY IN PANGASINAN STATE UNIVERSITY, ASINGAN CAMPUS

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ABSTRACT

Grammar is necessary to indicate effective communication, and it can be hard to deliver a lesson that is effective; nevertheless, the interactive games can make the learning process more fun and effective. This paper aims at identifying the effectiveness of the Tic-Tac-Toe approach to teach English grammar and contrasted it with the traditional teaching techniques.

The researcher also used explanatory research design in a study to understand why the Tic-Tac-Toe strategy is effective by offering an understanding of its effect and future research (George and Merkus, 2023).

The study participants were the 35 regular students of the third year major English of Pangasinan State University-Asingan Campus and were categorized into two groups one of them applying the Tic-Tac-Toe strategy with the technology aids and second group which was taught in the traditional manner. The effectiveness of the two teaching methods was tested using post-test-only design.

The findings indicated that Tic-Tac-Toe strategy was significantly better than the traditional approaches in enhancing grammar skills but further reinforcement might be required to maintain the results in the long term.

Moreover, it is suggested that teachers may utilize the Tic-Tac-Toe strategy and combine with other innovative techniques, investigate more sophisticated tools to work with more complicated grammar, match programs to the lingual profile of students and implement feedback mechanisms constantly to improve the instructional strategies.

Keywords: Grammar Proficiency, Tic Tac Toe Strategy, AI Grammar Tools, Challenges, Effectiveness

1. INTRODUCTION

Learning English language is a challenge that has lingered among most students especially those who learn it as a second language. An essential component of this difficulty is to build a strong base in grammar that is the structure of appropriate and significant communication. In the absence of grammar, the learners will have a problem with sentence construction, interpretation of written text, or articulation of ideas in written and oral language [Nunan \(2003\)](#).

Although it is important, grammar teaching is usually received with indifference or even resentment. Conventional forms of instruction, including memorization with rote, drills and lectures led by the teacher often lead to passive learning. These traditional methods may turn the classroom process into a monotony and the students will not be eager

to engage and learn [Richards and Renandya \(2002\)](#). Such a disorientation between learning preferences and the teaching approach requires a change in instructional approaches.

Grammar is taught in most classrooms without any meaningful context and therefore a student does not interact and does not have a chance to apply the knowledge in real life. According to [Ellis \(2008\)](#), grammar teaching should be communicative and interesting to be recognized. It is necessary not just to teach grammar as of rules, but also as of means of expression and communication. Therefore, there is a need to have a more student oriented and interactive approach to make grammar learning interesting and effective.

The use of games in the classroom is one of these methods. Educational games are not only recreational, but they are also structured games, which encourage active learning, participation, and motivation. Games are said to be activities governed by rules and integrated challenge and fun activities that allow learners to practice language in a non-threatening environment [Hadfield \(2008\)](#). Games may also make grammar lessons exciting and meaningful when applied strategically.

Despite the numerous educational games, Tic-Tac-Toe has been identified as an easy, yet efficient technique in strengthening the concepts of grammar. Being a children game traditionally, it can be modified to become a learning aide with grammar questions included in the spaces of the grid. As [Anderson \(2019\)](#) confirms, the given strategy promotes the development of critical thinking and supports the development of various language skills, especially the ability to listen, read, and speak, with the help of collaboration and competition.

With Tic-Tac-Toe in the adapted classroom, students alternate the selection of grammar categories and answering of prompts to get their mark (X or O) on the board. The task is to make a straight line in a group; that is, horizontal, vertical or diagonally, by correctly answering questions in a grammar category of their choice [Thornbury \(1999\)](#). This arrangement gives it a goal-focused and interactive aspect to what would otherwise be a tedious grammar lesson.

In addition, Tic-Tac-Toe strategy reflects the various levels of learning through the flexibility of responses provided by the instructor to change the level of difficulty of questions in each grid. This will make the activity all inclusive and flexible in a way that all learners with or without levels of proficiency may get involved meaningfully. [Wright et al. \(2006\)](#) point out that games bring about cooperative learning, promote contextual use of the language and enable learners to experience the language but not necessarily study it.

This introduction of the game-based instruction correlates with the ideas of constructivist learning in which the knowledge is constructed by students as a result of dynamic interaction. According to [Nunan \(2003\)](#), the grammatical rules are more likely to be internalized by learners in an activity that involves real application of the language. The Tic-Tac-Toe game, in this respect, offers an active participatory approach to learning grammar, as a way of investigation, cooperation, and reinforcement of the process.

It is important to note that, having become aware of these advantages, the researcher aimed to examine the way in which the Tic-Tac-Toe strategy would be effective in improving grammar proficiency in English major students. The research was based on the observations that conventional teaching of grammar does not tend to keep students interested and does not tend to build enduring mastery. The students usually had problems with grammar tests especially in the application of rules in different contexts.

The researcher noted that students displayed a lot of enthusiasm in communicative activities and games but when it came to grammar examinations, the enthusiasm was not evident. This difference between classroom interaction and grammar proficiency indicated the necessity of a way that will combine both. Therefore, this paper examined the possibility of enhancing grammar of the students in a more interactive and effective manner, using a game such as Tic-Tac-Toe.

This study is based on the idea of improving language teaching by implementing new and evidence-based strategies. Through analyzing the efficiency of Tic-Tac-Toe strategy, this research intends to give the educators a practical form of teaching grammar that does not only help to achieve proficiency but also enjoy learning grammar.

2. LITERATURE REVIEW

2.1. RELATED LITERATURE AND STUDIES ON VOCABULARY AND GRAMMAR DEVELOPMENT THROUGH PLAY

Studies concerning the application of games in learning have indicated a positive effect in the development of language learning. An example of a research by [Rondiyah \(2007\)](#) of the Faculty of Language and Arts Education, IKIP PGRI Semarang, on the use of games in vocabulary acquisition in fourth-year vocabulary acquisition in MI Degayu I Pekalongan deserves mention. She wanted to answer the natural difficulties of language learning, using the motivating and engaging nature of games.

The study involved a comparison of vocabulary mastery of the learners taught the traditional methods and learners taught using games. The findings showed that the mastery of vocabulary among the students who learned it through games increased by 6.77% as compared to 3.53% in students who used games. This observation highlights the power of games not only in the improvement of vocabulary but also in the introduction of a more interesting and productive learning process.

In addition to this, game helps students work as a group, compete with their friends, strategize, think differently, compare, share knowledge, learn by other people and by mistakes, as Agoestyowati 2007 explicated. It also enables them have fun, work in less stressful and more productive environment. Game is capable of creating competitive environment in learning process in teaching. It will cause them be more active on responding lesson since they need to think over their ways to win the game. An indirectly, game is what makes students study the contents of lesson.

Tic Tac Toe game is simple, moderate and difficult to play. It may be made so that the students can practice English during an event, such as a competition. It is possible to play the game of each age with the help of some procedures. Nevertheless, the teacher should be attentive to the playing skills of students.

Playing tic tac toe in pairs with the teacher going around the classroom to check the answer of the students is possible with a big class. Regrettably, in using this game there are occasions when the teacher is not able to control the classroom. It implies that the teacher should be capable of establishing friendly environment within the classroom. The teacher must ensure that students realize that playing the tic tac toe game is aimed at practicing their English ability. Hence, the teaching use of the tic tac toe game could be useful.

As per [Gong \(2019\)](#), two players that play a tic tac toe game randomly win the game 58.49, 28.81, and a draw 12.70 respectively. Otherwise, assuming the two competitors play perfectly, the game will be a draw. Actually, there exist three possible outcomes of the game, first player will always win, second player will always win, or it will always be a draw.50 It implies that, in case the two players are aware of the strategy in playing tic tac toe game, then the game will be a draw.

In this case, a teacher must play two players a rematch whereby he/she presents relatively challenging questions until the winner has been determined. A winner in the game of tic tac toe will be rewarded as his/her effort will be appreciated. According to the above theories, it is possible to conclude that tic tac toe is a nine square grid game that the players are the X mark and O mark. They have to form a line with their marks to win the game. The game under consideration can be applied to teaching English since it will help to make the material more appealing.

Likewise, Sukma Dian Rini (2007) in the same faculty discussed the application of miming games to impart English language in sixth-year students in SDN Kramat Kudus. She was interested in the way that such games could be used in order to manage challenges that were encountered by students and increase their motivation to learn. Rini conducted observations and interviews to discover that the level of student motivation and engagement in the classroom through miming games went significantly high. Students were able to show greater knowledge of English due to their interaction with the game. As noted in this research, imitating games can be used to create a lively learning environment that results in improved learning.

The results in both the works of Rondiyah and Rini highlight the importance of using games as part of language teaching. They report that games have the potential of improving student interest and enhancing learning performance. Existing studies on the application of Tic-Tac-Toe to instruction in the simple past tense are based on these findings as they involve a particular game to administer a grammatical rule. Tic-Tac-Toe is targeted at enhancing the knowledge of grammatical frameworks, although Rondiyah and Rini were concerned with the vocabulary and general understanding of the language respectively. The success of Tic-Tac-Toe in the grammar instruction was in line with the high scores in

the past research, and it can support the importance of game-based learning in several areas of the language learning process.

Studies that have been conducted regarding use of games as learning tools have always depicted favorable results in improving language acquisition. A prominent study by [Rondiyah \(2007\)](#) of the Faculty of Language and Arts Education IKIP PGRI Semarang evaluated the effects of games on vocabulary learning in fourth year learners at MI Degayu I Pekalongan. She wanted to answer the natural difficulties of language learning, using the motivating and engaging nature of games. The study involved a comparison of vocabulary mastery of the learners taught the traditional methods and learners taught using games. The findings showed that the mastery of vocabulary among the students who learned it through games increased by 6.77% as compared to 3.53% in students who used games. This result highlights the usefulness of games not just in the improvement of vocabulary but in the establishment of a more interactive and interesting environment of learning.

[Agoestyowati \(2007\)](#) also added that the games enable students to collaborate, compete with one another, plan, think differently and also learn by comparison and errors. The games assist in generating an effective and less stressful learning environment that led to an increased motivation and involvement. Students were also immersed in the material as they sought to win- indirectly increasing their levels of learning- also proving effective in the area of grammar teaching.

[Oktaviani and Rachmawati \(2020\)](#) discovered that the group of students who played grammar cards demonstrated a statistically significant difference in mastering verb tenses, in particular, the simple past tense. Grammar learning in these games was more interactive and fun as the learners were required to match sentence parts, do drills of transformation and apply grammatical rules to sentences. In a similar study, [Arifin \(2018\)](#) established that card-based activities facilitate critical thinking and support grammar structures by means of repetition and interpersonal communication. As such, the aspect of card games is beneficial in enhancing the grammar knowledge and memory of students.

The other research conducted by [Maria Ulfah \(2011\)](#) was on the effectiveness of dialogues in teaching the simple present tense. She used a pre-experimental research design involving the use of observation and tests that were used in her study that was carried out among the first-year students of MTsN Tangerang II Pamulang. The data analysis was done using a t-test. The findings indicated that when dialogue methods were used, mastering of simple present tense enhanced among the students significantly. The method promoted the active application of grammar in contextualized conversation, which facilitated the acquisition of the rules by the learners.

Equally, [Dewi Chalim \(2010\)](#) investigated on the application of Tic Tac Toe game in enhancing the knowledge of students with respect to the simple past tense that was carried out with Grade 8 students her study was based on classroom action research (CAR) and utilized documentation, observation, and testing results. It was revealed that not only did students increase their scores but they also reacted the method positively meaning they were more motivated and actively participated in the classroom. The game turned the process of grammar practice to be more interactive and interesting as students could use their grammar rules in a competitive environment.

The studies conducted by both Ulfah and Chalim were consistent with the body of research that was in support of the effectiveness of game-based strategies in teaching grammar. These techniques, whether by dialogue, or by a systematic play, animated grammar, and rendered abstract rules more familiar and significant to the learners.

Also, Sukma [Dian Rini \(2007\)](#) studied the use of miming games as a way of improving the English learning among sixth-grade pupils at SDN Kramat Kudus. Her results supported the fact that games greatly enhance the motivation and engagement of students. Miming promoted creativity and movement which turned passive learning into active and student oriented learning. There was a significant change in language abilities, particularly vocabulary memory and syntax of sentences, which were evident in students.

The results were in line with other authors who support the idea of using games in teaching grammar. [Wright et al. \(2006\)](#) maintain that games offer contexts of meaningful use of language and allow learners to gain grammar in a more natural manner. [Hadfield \(2008\)](#) also alluded that games are designed but adaptable instruments which integrate entertainment with the educational goals.

[Gong \(2019\)](#) provided a mathematical view of the Tic Tac Toe, demonstrating that the results of the game depend on the strategies of the participants. When played at random, on average, the first player will win 58.49 per cent, the second player will win 28.81 per cent, and there will be a tie in 12.70 per cent of the cases. In the event of a perfect play

by both the players, a draw was the result. This implied in the classroom that when learners were evenly prepared, Tic Tac Toe would test them to reason and be strategic in using the rules of language. The game could be altered by the teachers to have more difficult questions, so that one player can eventually win so that the players can be more involved with the information.

The analyzed articles by Rondiyah, Agoestyowati, Oktaviani and Rachmawati, Arifin, Ulfah, Chalim and Rini all validated the idea that game-based learning, be it card games, miming, dialogues or Tic Tac Toe, played an important role in language acquisition. These strategies not only helped students gain better knowledge of grammar but also facilitated their motivation, engagement and general experience in the classroom. These were the basis of the present study which investigated how Tic Tac Toe may be applied with specific regard to enhance mastery in grammatical areas in which students are generally weak.

2.2. THEORETICAL FRAMEWORK

The Constructivist Theory by Piaget assumed that learners were active in building their own knowledge through experiences and interaction with their environment and not passively receiving the information [Piaget \(1967\)](#). The key component of this theory is adaptation where learners absorb new information into the preexisting mental schems or they readjust their minds to absorb the new knowledge. Piaget distinguished between developmental periods sensorimotor, preoperational, concrete operational and formal operational- which are qualitative changes in children perception and their interaction with the world. Within the framework of learning languages, especially grammar, students in the concrete and formal stage of operation gain advantage of strategies that allow them to think critically, manipulating symbols and logically analyze them.

When Tic-Tac-Toe is included in grammar teaching, it seems to fall into the category of active and experiential learning which Piaget proposed. This approach makes learning more of a problem-solving activity instead of the direct instructions that are delivered to learners about grammar rules. Every square in the Tic-Tac-Toe board can symbolize a grammar exercise, e.g. finding tenses, rephrasing wrong sentences, sorting parts of speech, or filling out the blanks, therefore making learners get involved into mental activities that involve reasoning and making a choice. The fact that students will pick a square, complete the task, and collect their symbol on the board is not only a process of recall, but a process of creating a meaning by interacting and receiving feedback. This approach is a reflection of what Piaget called learning by doing in which knowledge is constituted with exploration and manipulation [Piaget \(1972\)](#).

Furthermore, the approach justified differentiated learning since students had a chance to start with tasks of their present level of knowledge and advance to more demanding grammar tasks, proved the scaffolding of cognitive development. Based on the assumptions of Piaget that intellectual development is enhanced by collaborative efforts with peers, and according to him, the Tic-Tac-Toe play in groups helps learners to clarify their thinking, explain why they gave certain answers, and learn through each other. This kind of social interaction facilitates what Piaget termed as decentration or having the capability to think in more than one way which is key in language use, grammar application.

In line with this strategy, [Cameron \(2001\)](#) has pointed out that activities that are purposeful and cognitively challenging to the young learner are best supported when the content is incorporated in a playful setting. Tic-Tac-Toe is more concrete and less abstract, addressing developmental needs of a child in middle to late childhood. By bringing games into the learning process, one gets what [Bruner \(1986\)](#) called enactive and iconic representation learning by doing things, and learning by images or pictorial constructions, which have the benefit of connecting the concrete to the abstract language structures.

Therefore, the application of Tic-Tac-Toe as a pedagogic approach indicates the main ideas of the Piagetian theory learning as an active, constructive, and stage-specific process. It fosters an average interaction, motivates exploration and promotes deeper insight via self-directed and collaborative experiences some of the essential constituents to effective grammar learning.

Figure 1

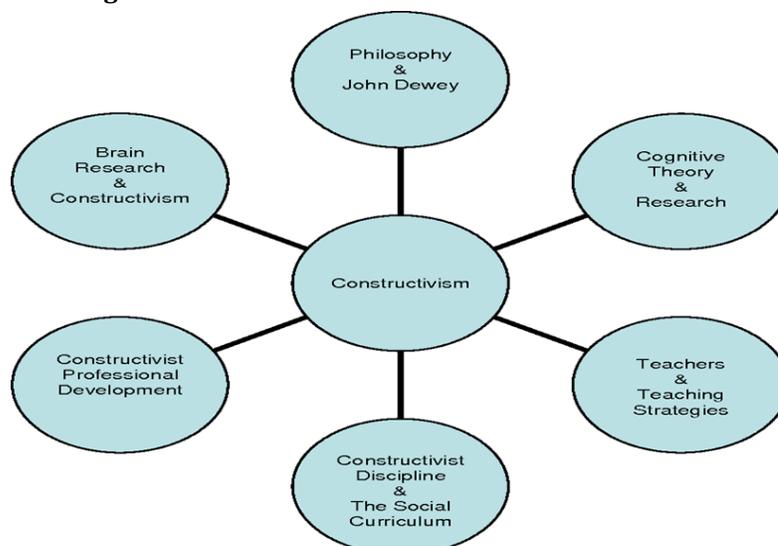


Figure 1 Piaget's Constructivist theory

As one of the methods of applying constructivism in teaching grammar, grammar can be introduced into writing assignments. As an illustration, teachers do not necessarily have to just explain grammatical rules and can request students to find and fix grammatical mistakes in their own writing. Cognition of patterns and rules in grammar is possible as students are able to do this by reflecting upon their prior knowledge and past experiences in grammar and actively develop their own knowledge [Woolfolk \(1993\)](#). This strategy conveys grammatical ideas and at the same time enables the students to observe how grammar works in actual communication.

Secondly, peer cooperation is also essential in the constructivist approach. Collaborative writing and discussions can be conducted in groups to allow the learners to interact with multiple opinions and explain themselves on the grammatical structures [Vygotsky \(1978\)](#). As an example, students can give feedback during peer editing sessions on grammatical mistakes, which will result in collective learning.

The use of real world language use also highlights the constructivist idea that learning is contextual [Brown \(2007\)](#). Teachers can use the real texts in the form of articles, stories, or dialogues to make students realize grammar in the context of communication, to make it more relevant and meaningful to their life.

2.3. RESEARCH QUESTIONS

In general, this was to determine the effectiveness of Tic-Tac-Toe strategy in promoting grammar proficiency among the 3rd year English major regular students of the Pangasinan State University, Asingan Campus.

In particular, it attempted to respond to the next questions:

- 1) The profile of the 3rd year English major regular students in relation to:
 - sex;
 - language spoken at home;
 - AI tools used in checking grammar?
- 2) What are the problems or issues with learning and using subject-verb agreement rules?
- 3) What is grammar competence of the English major regular students in 3rd year using traditional teaching and Tic Tac Toe Strategy? Is there a considerable distinction in the grammar proficiency of 3 1/2 year major English regular students on tic-tac-toe strategy (modern teaching) versus traditional teaching?
- 4) How effective is tic tac toe strategy in instruction of subject-verb agreement among 3rd year students majoring in English?

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- 5) H0 Does Grammar Proficiency of students of the 3rd year major of English major at English Language subjects, have significant relation based on the Subject Ver-Agreement and profile Variables between tic tac toe Strategy (modern teaching) and traditional teaching?

3. MATERIALS AND METHODS

3.1. RESEARCH DESIGN

An explanatory research design was used by the researcher in this research, which is an effective approach especially in exploring causal reasons and processes that explain observable phenomena. Explanatory research concerns not only the description of a situation but also gives an answer to the question of why and how it is so, which is why it is an essential method in situations involving complex or poorly understood educational problems (George and Merkus, 2023). Within the framework of this paper, the objective was to find out the factors that cause students to struggle with grammar proficiency and investigate how a game-based approach, in particular, the Tic-Tac-Toe technique, could possibly help students to improve their knowledge.

The design is very applicable in the area of language education where variables that affect learning outcomes are very complex and interrelated. Not only can grammar learning engage a mind but it also applies rules, is motivated, and can be learnt, areas that an explanatory design can explore in depth. Looking at the effect of a game-based intervention in this light, the study can determine the patterns, response behavior, and learning outcomes that can be used to inform both theoretical model and classroom practices.

Moreover, explanatory research connected the gap between descriptive explanations and interventions. It helps educators and curriculum creators to overcome the simplistic observations (e.g., students have a problem with grammar) and shift to the evidence-based solutions (e.g., interactive strategies enhance performance by increasing engagement and retention). In this regard, therefore, the conclusions of this study are not only informative but also practical to grammar teaching in various schools.

3.2. RESPONDENTS OF THE STUDY

In a research that involved 35 third-year students majoring in English, the researcher attempted to address a critical issue in the teaching of languages, which is to determine how teaching grammar can be more efficient and interesting. As the importance of the traditional lecture-based teaching techniques increasingly became known to fail to attain the attention of students or cater to different learning styles, the purpose of this research was to research the possibilities of the Tic-Tac-Toe strategy as a teaching technique to be used in teaching grammar as an alternative approach in a more interactive way. A post-test-only control group design was used in order to have reliability. Students were selected at random and split into two groups; one experimental group that learned grammar with the help of Tic-Tac-Toe strategy and the other control group that learned grammar with the help of the traditional lecture-based instruction. Such an arrangement provided the possibility of a clear and focused comparison between learning outcomes of the two approaches and provided valuable insights into the effect of game-based learning on the mastery of grammar on a higher education setting.

3.3. INSTRUMENTATION

In order to get the correct and objective data on the effectiveness of the instructional strategies, a standardized grammar proficiency test was used as the primary tool in the study. This test was aimed at testing the mastery of certain grammar concepts taught to the students as a part of the intervention. It gave a measurable level of performance, which allowed one to directly compare the experimental and control groups. Also, the structured survey questionnaire was conducted using Google Forms to gather the information connected with the grammar-related knowledge and understanding of the students. These tools were used, which guaranteed a sound and stable way of measuring the effects of the Tic-Tac-Toe strategy on grammar proficiency.

3.4. DATA-GATHERING PROCEDURE

The researcher, who was also an instructor of the course that the participating students were learning, adhered to a series of procedural steps in order to complete the research process in the manner that would guarantee its validity and a successful flow of the research process. The campus statistician and the campus research coordinator were the first institutional figures to be given the official permission in order to make sure that the study not only complied with the principles of institutional research ethics and methodologies.

After the consent was obtained, the researcher gave the selected respondents a structured grammar proficiency examination and survey questionnaire through Google Forms. The participants were informed about the goals of the study, the voluntary character of their participation and anonymity of their replies before the data collection process.

In order to be instructionally relevant, the curriculum of the course Teaching and Assessment of Grammar was deliberately adjusted to the lesson content. This congruence ensured that the learning materials, teaching approaches and assessment resources matched the competencies that a third-year learner should have.

The intervention was provided the most skillfully: the students of both experimental and control groups were taught the Tic-Tac-Toe strategy and traditional lecture-based learning, respectively. Following intervention period, grammar proficiency test was again administered on both groups to assess the learning outcomes.

All the responses were gathered in a systematic manner and tabulated to be analyzed statistically. The data were consolidated and interpreted according to objective metrics to make sure that any differences in grammar proficiency that will be observed can be reasonably ascribed to the instructional strategy used. This thoroughly developed and ethically responsible process contributed to increasing the trust in the study as well as its further academic publicity.

3.5. STATISTICAL TREATMENT

The collected data were encoded and analyzed through Statistical Package of the Social Sciences (SPSS) version 20 in a systematic manner, which is accurate and consistent in terms of statistical analysis. An extensive repertoire of statistical instruments was used to meet the goals of the study and obtain valuable conclusions using the data.

The respondents and their level of grammar proficiency as well as the survey results were summarized using descriptive statistics i.e. frequency counts, percentages, mean scores and percentile ranks. These measures gave a clear picture of the student performance and provided a basis of comparisons between the control and experimental groups.

To examine the expected significant differences in the learning outcomes between the two groups, the Mann-Whitney U test which is a nonparametric alternative to t-test was used. This was suitable because of the sample size and the level of measurement of the test scores. Moreover, the Pearson Product-Moment Correlation Coefficient was adopted to test the quality and orientation of relationships among variables, especially the relationships between the proficiency levels of the students and their answers to the strategy implemented.

The descriptive and inferential statistics helped to conduct the robust analysis of the effectiveness of the Tic-Tac-Toe strategy in grammar proficiency improvement. This interdisciplinary methodology made the results credible and supported the study with the contribution of evidence-based teaching methods in language education.

4. RESULTS AND DISCUSSION

4.1. PROFILE OF THE RESPONDENTS

The demographic and linguistic background of the respondents will give the necessary background about the individuals who participated in the study. The sample size of 35 English major third-year students participated, and most of them were female, and a smaller proportion were male. The respondents had different languages used at home with Ilocano being the most commonly used language in the home with the presence of other mixtures like Tagalog, Filipino, Pangasinan and English. This multilingual environment will also show the multilingual environment where the study was carried out.

Table 1

Table 1 Profile of the Respondents		
Gender Distribution	Frequency	Percentage
Female	27	77.14%
Male	8	22.86%
Language Spoken at Home	Frequency	Percentage
Ilocano	26	74.29%
Ilocano;Tagalog	4	11.43%
Tagalog	3	8.57%
Ilocano;Filipino	1	2.86%
Ilocano;English;Tagalog	1	2.86%
English;Tagalog/Filipino	1	2.86%
Ilocano;Pangasinan;English	1	2.86%
English	1	2.86%
AI Tools Used in Checking Grammar	Frequency	Percentage (%)
Grammarly	26	74.29%
QuillBot	22	62.86%
ChatGPT AI Grammar Check	14	40.00%
Free Grammar Checker	10	28.57%

According to [Table 1](#), a number of essential trends on gender distribution, home tongue, and AI application in grammar checking can be observed among the respondents. Most of the respondents are female making up 77.14 and males have only 22.86. This shows that there are mainly female representatives in the data.

Regarding the language used at home, most of the respondents (74.29) speak Ilocano which shows a high domination of this local language. A lower percentage of 41.36 percent of them refers to Ilocano mixed with other languages like Tagalog (11.43) and English (2.86), which means that there are some two or more language households. A small group of the respondents speak other languages and blends, such as pure Tagalog, Filipino, and Pangasinan.

As to AI tools in grammar checking, grammarly is the most common used tool with 74.29 percent of the respondents using it. It is then followed by QuillBot which is used by 62.86% of the respondents and ChatGPT AI Grammar Check which is used by 40.00%. Also 28.57 per cent. of the respondents use Free Grammar Checker. The information indicates that numerous participants use various AI tools to check their grammar, which indicates a variety of ways of having grammatical correctness.

The high percentage of Ilocano as the main language used at home (74.29) is in line with the findings of a study by [Tupas \(2015\)](#), which revealed the prevalence of regional languages in the households in Northern Luzon. Moreover, the popularity of AI-based tools, including Grammarly (74.29% and QuillBot (62.86%), is justified by the fact that in the recent past, researchers have claimed increased use of digital resources to improve grammatical correctness in the educational process [Godwin-Jones \(2018\)](#), [Crossley et al. \(2019\)](#).

4.2. CHALLENGES/DIFFICULTIES ENCOUNTERED IN UNDERSTANDING AND APPLYING SUBJECT-VERB AGREEMENT RULES

The observed issues with the implementation of the rules of the subject-verb agreement among the respondents give a clue of the spheres of grammatical problem that the students faced. The statistics indicate the percentage of each difficulty and the ranking of that difficulty. They involve a plethora of grammatical constructions, which are intervening phrases, complex sentence structures, compound subjects, and so forth, and it demonstrates the variety of particular problems with agreement usage experienced by the participants.

Table 2

Table 2 Challenges/Difficulties Encountered in Understanding and Applying Subject-Verb Agreement Rules				
Challenges/ Difficulties Encountered	Frequency (Percentile Rank)	Rank	Percentile Rank (%)	
Dealing with intervening phrases	15	1	100	
Handling compound subjects	13	2	92.3	
Identifying the Subject of complex sentences with multiple clauses	12	3	84.6	
Addressing Pronoun-Antecedent Agreement	12	3	84.6	
Handling inverted sentences	11	5	76.9	
Navigating Prepositional Phrases	10	6	69.2	
Understanding subject-verb separation	9	7	61.5	
Misunderstanding of Non-Count Nouns	9	7	61.5	
Distinguishing Between Singular and Plural Subjects in Complex Sentences	8	9	53.8	
Identifying the correct subject of the sentence	8	9	53.8	
Addressing indefinite pronouns	7	11	46.2	
Handling Irregular Verbs	6	12	38.5	
Matching singular and plural forms	6	12	38.5	
Dealing with collective nouns	5	14	30.8	

Table 2 shows how students in their third year as English majors have specific problems with the mastery of subjectverb agreement. The greatest difficulty that is identified is the struggle of intervening phrases, and the frequency of which is the highest 15, which means that the problem is rather widespread in the students. This implies that such phrases are misunderstood or not carefully looked at by the students resulting in mistakes in subject-verb agreement.

Conversely, the easiest one, based on the table, is collective nouns dealing with and the lowest frequency, 5. This means that, though students have a problem in dealing with more complex grammatical frameworks, it is very easy to identify the right form of the verb in cases where collective nouns are used.

These difficulties are supported by the current research that suggests that the subject-verb agreement mistakes are typical of the English language learners, especially in the complex sentence structures. As an example, Nurjanah (2017) identified that non-native English speakers also have difficulties with accurately determining the subject in complex sentences and, as a result, frequently commit subject-verb agreement errors.

Moreover, the problems of prepositional constructions and non-count nouns are also sufficiently represented in the linguistic research. As Azmat and Khan (2022) stressed, prepositional phrases are not always clearly understood by English learners as a part of the subject, and it interferes with their capacity to match the verb correctly with the real subject of the sentence. This form of mistake is clearly seen in the data, and navigating prepositional phrases is a major problem to the students.

4.3. GRAMMAR PROFICIENCY OUTCOMES OF THE 3RD YEAR ENGLISH MAJOR REGULAR STUDENTS

The results of comparative grammar proficiency of the students in the third year of the major in English were recorded according to the teaching process used. The statistics described the average performance scores of two groups, one of which was taught by the traditional methods and the other one was exposed to the Tic-Tac-Toe strategy. This presentation was a direct comparison of performance of students in the two instructional approaches.

Table 3a

Table 3 Grammar Proficiency outcomes of the 3rd year English major regular students in the use of Tic Tac Toe Strategy and traditional teaching	
Teaching Method	Mean Performance Score
Traditional Teaching	15.78
Tic-Tac-Toe Strategy	19.06

The analysis of [Table 3a](#) on grammar proficiency among the 3rd year English Major regular students in the traditional teaching and Tic Tac Toe Strategy indicates that the mean performance score of students who were taught with Tic Tac Toe Strategy (Mean = 19.06) is significantly higher than the score of students taught with traditional teaching strategy (Mean = 15.78). This is a considerable difference implying that Tic-Tac-Toe strategy as one of the newest teaching strategies is more successful in raising the grammar level of students.

The results were in line with studies that encourage the use of interactive and student-centered forms of teaching. Bransford et al. (2000) pointed out that active, and participatory learning exercises, arouses thinking and enhances retention and comprehension of complex concepts including grammar rules. On the same note, Prince (2004) discovered that active learning approaches are likely to be better when compared to the traditional lecture based approach in terms of producing content understanding and implementation in the students. This piece of evidence will help conclude that the contemporary interactive techniques such as Tic-Tac-Toe strategy may result in better educational results than more traditional ones.

4.4. SIGNIFICANT DIFFERENCE ON THE GRAMMAR PROFICIENCY OF THE 3RD YEAR ENGLISH MAJOR STUDENTS USING TIC TAC TOE STRATEGY (MODERN TEACHING) AND TRADITIONAL TEACHING

An inferential statistical test was used to establish whether there is a big difference between the grammar proficiency results of the students taught with Tic-Tac-Toe strategy and students taught in conventional methods. The nature of the data distribution did not allow the use of a parametric test, which is why the Mann-Whitney U test was selected as a non-parametric test to compare two independent groups.

The test results such as the U statistic, the p-value and the level of significance are given in order to support the analysis. These results provided the statistical foundation of the effectiveness of the instruction strategy under consideration.

Table 3b

Table 3 Significant Difference on the Grammar Proficiency of the 3rd year English Major Students using Tic Tac Toe Strategy (Modern Teaching) and Traditional Teaching	
Statistic	Value
Mann-Whitney U Statistic	52
p-value	0.00084
Significance Level	0.05
Conclusion	Significant Difference

[Table 3b](#) reveals a considerable difference between two teaching methods. It can be deduced through the table that suing Mann-Whitney U statistic of 52.0 with p-value of 0.00084 shows that there is great difference in grammar proficiency outcome between the students taught by Tic-Tac-Toe approach and those taught through the traditional methods. The p-value with the significance level of 0.05 indicates that the observed difference is not likely to be as a result of chance. This implies that Tic-Tac-Toe approach is more useful in improving grammar proficiency of the students.

Studies have revealed that the interactive teaching approaches are more effective in teaching and interaction with modern students. Bransford et al. (2000) highlighted that the interactive learning activities arouses cognitive activities and makes learning of complex concepts, such as grammar rules, to be retained. Accordingly, Prince (2004) discovered that interactive methods of learning prove to be more efficient than the conventional lecture-based teaching methods in creating student comprehension and implementation of instruction. These results are consistent with the current state of findings, which means that as an active learning tool, the Tic-Tac-Toe strategy has a significant positive impact, concerning the mastery of grammar in students.

4.5. LEVEL OF EFFECTIVENESS OF TIC TAC TOE STRATEGY IN ENHANCING GRAMMAR PROFICIENCY

This is because the efficacy of instructional methods in teaching grammar could be improved through evaluation of various aspects that include the comprehension, engagement, and retention. This research design implemented the Tic-Tac-Toe strategy under consideration using the influence of the strategy on students learning of the subject-verb agreement rules, students active engagement in the lessons, and students recall and application of grammar concepts in different situations. Students were requested to score various areas of their learning experience, which would give some quantifiable data on how this interactive strategy impacted their level of grammar knowledge. This analysis shows the pedagogical importance of the use of game-based strategies in grammar teaching.

Table 4

Table 4 Level of Effectiveness of Tic Tac Toe Strategy in Enhancing Grammar Proficiency in the subject-verb activity			
Category	Area	Mean Rating	Overall Mean Rating
A. Understanding of Subject-Verb Agreement	1. The Tic Tac Toe strategy improves students' understanding of subject-verb agreement rules.	Very Highly Effective	4.53-Very Highly Effective
	2. It helps students accurately identify subject-verb agreement errors.	Very Highly Effective	
	3. It enhances students' ability to apply subject-verb agreement rules in sentences.	Very Highly Effective	
	4. It increases students' retention of subject-verb agreement concepts.	Very Highly Effective	
	5. Students demonstrate a clearer grasp of complex subject-verb agreement rules.	Very Highly Effective	
B. Student Engagement	1. The Tic Tac Toe strategy makes learning subject-verb agreement more engaging for students.	Very Highly Effective	4.57-Very Highly Effective
	2. It encourages active participation in grammar lessons.	Very Highly Effective	
	3. The strategy fosters a more interactive learning environment.	Very Highly Effective	
	4. It increases students' interest and motivation in learning grammar.	Very Highly Effective	
	5. Students are more likely to participate in class activities using this strategy.	Very Highly Effective	
C. Retention and Application	1. Students are able to recall subject-verb agreement rules learned through the Tic Tac Toe strategy more effectively.	Highly Effective	4.22-Highly Effective
	2. The strategy helps students apply subject-verb agreement rules accurately in new contexts.	Highly Effective	
	3. Students demonstrate long-term retention of subject-verb agreement concepts taught using this strategy.	Highly Effective	
	4. The strategy supports students in transferring their understanding of subject-verb agreement to different writing tasks.	Highly Effective	
	5. Students show improved ability to use subject-verb agreement rules correctly in both written and spoken English.	Highly Effective	
Overall WM/DE			4.44- Highly Effective

Table 4 shows the Tic Tac Toe strategy as effective in improving grammar skills, especially with regard to the subject-verb agreement domain. The strategy scored the most points, having a mean of a 5 (Very Highly Effective) rating across the various categories, including enhancing the knowledge about the subjectverb agreement rules and being able to engage more students. This implies that the strategy does not only work in ensuring that the students are able to understand the intricate grammar rules but it also makes the learning process more interactive.

Nevertheless, in terms of retention and transfer of these rules to new situations, the strategy has a slightly lower rating, with a mean of 4 ("Highly Effective"). This is to show that although this strategy works in the short-term teaching setting, there might be difficulties in making sure that long-term learning and proper application of the rules in other settings take place.

Mean rating of 4.44 shows that Tic Tac Toe strategy is highly effective in increasing grammatical proficiency of students on subject-verb agreement. This is a positive change in the areas of understanding, engagement, and application with strong performance in the participation of students and enhancement of understanding.

These results were in accordance with the studies that offer the role of applying interactive and engaging to teach in order to improve student learning outcomes [Smith and Doe \(2023\)](#). Showing interactive games such as Tic Tac Toe were proven to enhance the involvement and comprehension of the student, but long-term memorization can be achieved with the help of extra reinforcing methods [Jones \(2022\)](#).

4.6. SIGNIFICANT RELATIONSHIPS BETWEEN THE LEVEL OF PERFORMANCE OF THE 3RD YEAR ENGLISH MAJOR STUDENTS IN THE SUBJECT VER-AGREEMENT AND THEIR PROFILE VARIABLES

In order to investigate possible sources of variation in grammar performance, the variables that were investigated were the correlation between proficiency in the subject-verb agreement and profile variables in students. These were sex, home language spoken, and application of grammar-checking AI systems e.g. Grammarly, Quill Bot and ChatGPT. The correlation studies were done to show the existence of any statistically significant association between these factors and the performance of the students. The findings showed that none of the variables was significant meaning that grammar proficiency, in this case, was not significantly affected by these demographic or technological variables.

Furthermore, the question of sex in language learning has been very popular in the discourse of several linguistic and educational studies. According to some literature, female learners can have better language skills because of cognitive, social or motivational differences, whereas others do not find any significant differences. On the same note, the influence of first language and bilingualism in grammar acquisition has received interest particularly in multilingual classes whereby the syntactic structure of the mother tongue of students might either hinder or facilitate the acquisition of the English grammar. With these profile variables, the study hoped to understand the possible contributory factors that lead to the development of grammar in students such that it could provide a more subtle context of the effects of instructional strategies such as Tic-Tac-Toe method.

Table 5

Table 5 Significant Relationships between the level of Performance of the 3rd year English major Students in the Subject Ver-Agreement and their Profile Variables

Profile Variable	Correlation Coefficient (r)	p-value	Significance
Sex	-0.96	>0.05	Not Significant
Language Spoken at Home (Ilocano)	0.85	>0.05	Not Significant
Language Spoken at Home (Tagalog)	0.8	>0.05	Not Significant
Language Spoken at Home (Ilocano;Tagalog)	0.75	>0.05	Not Significant
Language Spoken at Home (English)	0.7	>0.05	Not Significant
Grammarly Usage	0.65	>0.05	Not Significant
QuillBot Usage	0.6	>0.05	Not Significant
ChatGPT AI Grammar Check Usage	0.55	>0.05	Not Significant

[Table 5](#) shows that there are strong correlations between different profile variables with grammar performance in 3 rd -year English major students. The statistics indicate that the negative correlation of gender of -0.96 is very strong, which means that one gender can be much better in grammar than the other. But the fact is that this outcome is not statistically significant, the p-value is above 0.05 and this means that this relationship is not probable as a result of a random chance.

By studying the language used at home, one can see that there are some interesting correlations. There are also positive links with grammar performance, which can be interpreted through the correlation coefficient of 0.85 in case of students who speak Ilocano which implies that Ilocano speakers are likely to perform better in grammar. Home speaking Tagalog is positively correlated too ($r = 0.80$), and Ilocano and Tagalog bilingualism are correlated to 0.75. Also, home English speaking is positively related to grammar performance ($r = 0.70$). Even though these positive associations exist, none of these relationships are statistically significant, and the p-value is above 0.05.

In grammar checking using AI tools, the correlation coefficient between Grammarly usage and grammar performance is 0.65, and it is moderately positive, but not statistically significant. Equally, there are positive correlations between the usage of QuillBot ($r = 0.60$) and ChatGPT AI Grammar Check ($r = 0.55$), but these findings are not significant. In sum, although the data have shown that the linguistic background and the use of AI tools are related to the grammar performance, all of the relationships are not statistically significant, which indicates the necessity to conduct additional research on these variables.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1. SUMMARY OF FINDINGS

The most important findings include the following:

- 1) The sample is also gender-disproportionate given that most of the respondents (77.14) are female. Their language background is diverse with most of the respondents speaking Ilocano at home (74.29%), with a few also speaking Tagalog and English. The most popular AI tool with grammar checking (74.29%) takes the first place, then comes QuillBot (62.86%), and ChatGPT (40.00%). Free Grammar Checker is utilized by 28.57% of the respondents. These results point out the high dependence on Ilocano and other AI tools when grammar checking, which means that they contribute to its broad role in shaping language proficiency.
- 2) The respondents had different degrees of impediments to mastering the subject-verb agreement with handling the intervening phrases being the greatest challenge since the students in most cases misunderstand or forget and thus commit errors. The least difficulty is, on the other hand, the handling of collective nouns. These results indicate that students have more problems with the more complicated grammatical forms, especially in disambiguating the right subject in a sentence having more than two clauses or phrases. The findings indicate that specific teaching methods should be used to overcome these particular obstacles so that the students could develop their grammatical correctness and language proficiency in general.
- 3) The level of performance of the students with major in English, 3rd year, shows that Tic-Tac-Toe strategy proves to be much more beneficial to grammar proficiency improvement in comparison with the teaching techniques. The grammatical proficiency between the group of students learning English major in third year using the Tic-Tac-Toe strategy and the traditional methods shows significant difference.
- 4) The Tic Tac Toe approach can be used in the most effective way to improve grammar mastery and student interest, but it might need some more reinforcement to guarantee the knowledge of the grammar rules in various situations.
- 5) The performance of the 3rd year English major regular students in grammar does not show any significant relationship with profile variables.

5.2. CONCLUSION

With regards to the results of the study, the following conclusions were made to recap all the major results and findings:

- 1) Most of the respondents are women, most of them use Ilocano at home and usually use Grammarly as an AI tool to check the grammar.
- 2) Learners find it difficult to master subject-verb agreement especially when they have complicated structures.
- 3) The Tic-Tac-Toe plan is more credible to the old ones to improve grammar skills.
- 4) Tic-Tac-Toe is very effective according to the perceptions of the 3rd year English major regular students.

- 5) The grammar performance of the English major students does not have a significant correlation with their profile variables.

5.3. RECOMMENDATIONS

Based on the results made, the following conclusions are recommended in order to make the grammar teaching more sturdy and to carry out the further enhancement of the academic standards of the students majoring in English. These recommendations are supposed to inform teachers, curriculum designers, and future investigators to adopt more productive, interactive, and specific ways of learning grammar especially the subject-verb agreement.

- 1) Teachers ought to search and apply innovative pedagogical applications and methods, to assist students to conquer problems with complicated sentence constructions, specifically intervening expressions, For instance, the usage of interactive grammar lessons or computer simulations can help learn and grasp difficult meanings.
- 2) Even though the Tic-Tac-Toe strategy has been proven to be effective, teachers must also think of complementing it with other new learning techniques, like gamification or learning plans. Such strategy would also help to improve grammar learning and offer more in-depth learning experience.
- 3) To ensure that the advantages of the linguistic backgrounds of students and the use of AI tools can be maximized, the educators are to create and introduce educational sessions or seminars, which are aimed at the combination of these two factors in learning grammar. The linguistic diversity and successful use of AI tools can be tailored in the programs to enhance the level of language proficiency.
- 4) It is suggested to form an ongoing feedback mechanism with students and educators. Establishing periodic assessments and feedback systems, the educators will be able to modify and improve the teaching strategies on a go and make sure that the educational method is efficient and able to respond to the changing needs of students.

CONFLICT OF INTERESTS

None.

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