



IRAQI
Academic Scientific Journals



العراقية
المجلات الأكاديمية العلمية

ISSN: 2663-9033 (Online) | ISSN: 2616-6224 (Print)

Journal of Language Studies

Contents available at: <https://jls.tu.edu.iq/index.php/JLS>



The Impact of Language-Based Puzzles on Preparatory Pupils' Communication Skill

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Received: 25/07/2025, Accepted: 05/09/2025, Online Published: 30/06/2026

Abstract

This research examines the effect of using language-based puzzles in English as a Foreign Language (EFL) instruction for Iraqi preparatory school students. Its purpose is to determine if and how these puzzles can enhance oral and written communication more effectively than traditional instruction. Quasi-experimental design is applied and 90 first intermediate students in Al-Nidhal Secondary School for Boys, Kirkuk, Iraq are evenly distributed into experimental and control groups. The experimental group is taught with some language-related puzzles like crosswords, anagrams, jumbled sentences, and riddles, while the control group is taught with normal instruction. Pre- and post-communication tests are utilized to evaluate performance of both groups. The outcome shows that there are statistically significant differences in communicative competence of the experimental group, i.e., their vocabulary use and fluency. The outcome verifies that language puzzle tasks are an effective pedagogical task to construct communicative competence in EFL environments. The study offers valuable

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recommendations for EFL instructors and researchers who would like to find practical solutions to induce learner motivation and language acquisition.

Keywords: based puzzles, communication, crosswords, anagrams, jumbled sentences

أثر الألغاز القائمة على اللغة في تنمية مهارات التواصل لدى تلاميذ المرحلة الإعدادية

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المستخلص

تبحث هذه الدراسة في تأثير دمج الألغاز اللغوية في مادة اللغة الإنجليزية لغة أجنبية (EFL) على مهارات التواصل لدى تلاميذ المرحلة المتوسطة في العراق. الهدف الرئيسي هو تقييم ما إذا كانت هذه الألغاز تُعزز التواصل الشفهي والكتابي بشكل أكثر فعالية من أساليب التدريس التقليدية. تم استخدام تصميم شبه تجريبي مع عينة من 90 تلميذًا من الصف الأول المتوسط من مدرسة النضال الثانوية للبنين في كركوك، العراق، مُقسَّمين بالتساوي إلى مجموعتين تجريبية وضابطة. دُرست المجموعة التجريبية باستخدام ألغاز لغوية متنوعة، بما في ذلك الكلمات المتقاطعة، والجناس الناقص، والجمل المُركَّبة، والأحاجي، بينما تلقت المجموعة الضابطة تعليمًا تقليديًا. أُجريت اختبارات تواصل قبلية وبعدي لتقييم الأداء في كلتا المجموعتين. كشفت النتائج عن تحسينات ذات دلالة إحصائية في مهارات التواصل لدى المجموعة التجريبية، لا سيما في الطلاقة، واستخدام المفردات. تشير هذه النتائج إلى أن الألغاز اللغوية أداة تربوية فعالة لتعزيز الكفاءة التواصلية في سياقات اللغة الإنجليزية كلغة أجنبية. تُقدم الدراسة رؤى قيمة لمعلمي اللغة الإنجليزية كلغة أجنبية للباحثين عن أساليب مبتكرة لتعزيز مشاركة المتعلمين وإتقانهم للغة.

الكلمات المفتاحية: الألغاز اللغوية، مهارات التواصل، الكلمات المتقاطعة، إعادة ترتيب الحروف لتكوين كلمات، إعادة ترتيب الجمل

1.1 Statement and Significance of the Problem

In English as a Foreign Language (EFL) instruction, building effective communication skills is still a core concern. Language puzzles are a specific combination of mental exercise and language exercise and therefore can be an excellent instrument for EFL classrooms. Puzzles are more active and interactive in orientation, in contrast to other methods, and can assist in encouraging students to learn actively

(Wright, Betteridge, & Buckby, 2006). Language games like crosswords, word searches, anagrams, and riddles have also been viewed as a possible remedy for this issue. Not only are they fun, but they are also pedagogically sound as they make students play with words in new and mentally stimulating ways (Thornbury, 2002). Puzzle-solving by learners acquires new vocabulary, spells, and problem-solving capacity, all enhancing communication skills. But although promising, the exact contribution of language-based puzzles to EFL learners' communicative competence is yet to be extensively explored. This study is an effort to fill this gap by examining how language-based puzzles can affect EFL learners' communicative competence in English.

The importance of this subject is that it has the power to change the process of EFL learning and teaching. Communication forms the foundation of language learning, and without it, students cannot engage in full in globalized societies whose lingua franca tends to be English (Crystal, 2003). Communication deficits can restrain educational, professional, and social opportunities for EFL learners and cause cycles of inequality and exclusion (Nunan, 1999). Therefore, finding good ways of enhancing communication skills is not just a matter of learning but a matter of necessity.

Furthermore, puzzles facilitate co-learning since students end up working together to solve them, hence facilitating peer-to-peer exchange and interaction. This study aims at analyzing how the inclusion of language-based puzzles in EFL classes can enhance the communication skills of students. It is located within the context of Iraqi education and aims at providing insights and recommendations for improving English language.

Thus, the central problem addressed in this study is: **To what extent can the integration of language-based puzzles enhance the communication skills of Iraqi EFL pupils, and how effective are these tools of puzzles compared to traditional teaching methods?**

1.2 Aims of the study

This study aims at finding out:

1. The effect of language-based puzzles on EFL Iraqi pupils' communication in English.
2. The effect of language-based puzzles on improving EFL pupils' communication oral and written skills.

1.3 Hypotheses of the study

The aims of the study are supposed to be achieved through verifying the following hypotheses :

1. There is no statistical significance difference between the mean scores of the experimental group which is taught by using the language-based puzzles strategy and the control group which is taught by the traditional in post communication test.
2. There is no statistical significance difference between the mean scores of the experimental group in pre and post communication oral and written tests.

1.5 Value of the Study

This study offers significant value to various stakeholders in the field of English as a Foreign Language (EFL) education, particularly in the Iraqi context:

1. The study introduces language-based puzzles as an innovative and engaging teaching method that can complement traditional approaches. Teachers can use these tools to create more interactive and student-centered classrooms, addressing the challenges of rote learning and lack of communication.
2. By focusing on practical and enjoyable activities, the study provides a framework for helping pupils develop essential communication skills, such as fluency, vocabulary usage, and confidence in speaking and writing English.
3. Language-based puzzles encourage critical thinking, problem-solving, and collaboration among pupils, fostering a more dynamic and participatory learning environment.
4. In Iraq, where EFL education faces unique challenges, this study offers a culturally and contextually appropriate solution to improve language learning outcomes, bridging the gap between theoretical knowledge and practical application.

1.6 Definition of Basic Terms

1. Language-Based Puzzles:

- **Theoretical Definition:** Activities or games designed to enhance language learning by requiring learners to solve linguistic challenges, such as crosswords, riddles, word searches, or matching tasks (Richards, 2006).
- Language-Based Puzzles are instructional activities designed to enhance language learning by engaging learners in problem-solving tasks that involve linguistic structures, vocabulary, or communicative functions. These puzzles challenge learners to apply their language knowledge critically and creatively to find solutions, thereby reinforcing grammatical accuracy, vocabulary

retention, and communicative competence in an enjoyable and meaningful context (Nation, 2001).

1. **EFL (English as a Foreign Language):**

- **Theoretical Definition:** The study and use of English by individuals in a non-English-speaking country, focusing on learning English for academic, professional, or social purposes (Harmer, 2007).
- EFL referred to teaching and learning of the English language in any country where English is not the first language of communication. EFL learners usually learn the language in formal schools outside school with very minimal exposure to the language outside classrooms (Richards & Schmidt, 2010).

2. **Communication Skills:**

- **Theoretical Definition:** The ability to convey thoughts, ideas, and emotions effectively through verbal or written language in a clear and coherent manner (Brown, 2007).
- The ability to communicate meaningfully and efficiently in either verbal, non-verbal, written, or visual forms is communication skills. They include active listening, well-articulated speech, good body language, empathy, and the ability to modify messages with respect to audiences and contexts (Keyton, 2011).

2. Historical Background and Theoretical Framework

2.1. puzzle-based language learning

The use of games and puzzles in learning has a long history, its roots dating back to the early 20th century when educators first realized the role that play was playing in learning. To language learning, the use of puzzles as a pedagogic tool evolved as part of the broader trend towards communicative language teaching (CLT) during the 1970s and 1980s. CLT, which centered on using language for communicative purposes, resulted in interactive and participatory approaches such as puzzles to facilitate language learning (Richards & Rodgers, 2001). This pedagogical innovation in language teaching was an unmistakable indication that learning language is not just structuring grammar, but also fostering communicative skills by means of natural interaction.

The notion that puzzle learning was a viable possibility was post-cognitive revolution in psychology in the mid-20th century given further impetus. Cognitive theory proposed by theorists like Piaget (1970) and Vygotsky (1978) laid a strong emphasis on active problem-solving and communication in cognitive development. Learning according to Piaget occurs through construction of knowledge by interacting with the world around us, which involves problem-solving and task implementation based on critical thinking. Likewise, as Vygotsky's sociocultural theory placed the

utmost emphasis on the social nature of learning, and how students progress through group discussion and collaboration (Vygotsky, 1978), these theories were the foundations upon which language learning can be maximized through the use of puzzles as a communicative practice.

Theoretical justification for using puzzles in EFL acquisition can also be based on the constructivist approach to education, which holds that learners construct their own knowledge from experience and social interaction (Piaget, 1970). According to this theoretical framework, puzzles are thought stimuli, intellectual exercises for critical thinking, as well as teamwork problem-solving. Puzzle-working enables activities to extend even further the acquisition of both linguistic and communicative competence. It is argued by Swain (2000) that students acquire knowledge of language from natural interaction, and puzzles offer the possibility of meaningful interaction, especially in vocabulary acquisition, syntax, and communication strategy.

Secondly, cognitive load theory (Sweller, 1988) similarly prefers the utilization of puzzles because it asserts that cognitive load should be amplified for the sake of effective learning. Puzzles tend to naturally compel learners to think about information in an interesting manner but in a non-problematic way, making them an ideal language learning method. Puzzles disassemble language learning activities into sensible segments and force learners to think by allowing contemplation of language structure and promoting communication ability.

Finally, the development of puzzle-based learning approaches over the past is based on communicative language teaching, cognitive psychology, constructivism, and cognitive load theory. The theories justify the concept that language puzzles are not just an enjoyable, interactive way to engage EFL learners, but also an effective means to improve communication skills.

2.2 The Concept of Puzzles

Puzzles, when utilized in teaching, are also known as systematic activities utilized to enable the learners to find answers to which they must struggle through using their thinking skills and provoke linguistic communication. Puzzles commonly consist of patterns, links, or clues which must be solved or unraveled and thus entail active communication (Dörnyei, 2001). During language learning, puzzles provide learners with a vehicle to deploy linguistic knowledge in an environment that promotes understanding and recall of language forms (Richards & Rodgers, 2001). The exercises are viewed as a worthwhile means of generating interest, generating creativity, and expanding cognitive flexibility, all indispensable elements in communication skill building.

Language learning puzzles are generally defined as different types of puzzles meant to improve specific language skills, e.g., vocabulary, syntax, and reading. Word

searches, crossword, and jumbled sentences, for example, facilitate spelling practice, word recognition, and sentence building. These puzzles permit language learners to interactively engage with language and provide the facilities for practice and repetition which can contribute to enhanced language capacities (Wenden, 1987). It is presenting the language learners to problems to be solved by active language processing that improves both their linguistic capacity and potential use of language in actual communication situations.

The puzzle idea is also underpinned by theory in problem-based learning (PBL) where new skill and knowledge acquisition is emphasized through the application of advanced, real-life problems as a learning mechanism. PBL stimulates collaborative, critically assessing learners who apply provided knowledge to create solutions to issues they are faced with (Barrows & Tamblyn, 1980). Puzzles, being problem-solving exercises, demand that learners use both their cognitive and linguistic abilities in an effort to solve clues, spot patterns, and build solutions. In so doing, learners not only enhance their language skills but also enhance their problem-solving skills, which are critical in effective communication in most contexts.

In addition, puzzles offer a channel for increasing motivation and decreasing the stress usually connected with customary language learning approaches. Students, while engaging in puzzles, are more motivated by the task itself than through the compulsion of producing flawless language output (Tharp & Gallimore, 1988). The puzzle play and challenge present a safe and nurturing context that allows students to be adventurous with language and to talk more freely. This stimulates the production of more proficient communicators, who grow to be more fluent and accurate in their language usage.

In short, puzzles are not just fun but also an effective teaching tool that blends communication with language practice. With the mediation of problem-solving ability, language learning, and the availability of a secure and stimulating learning atmosphere, puzzles are a very effective means of enhancing the communicative ability of language learners.

2.3. Theories Related to the Puzzle Strategy

The application of puzzles to language learning is justified by a wide range of popular education theories that promote active interaction, problem-solving, and cognitive development. Among the major theoretical approaches compatible with puzzle-based learning is cognitive load theory by Sweller (1988). Learning, in this theory, would be most effective when cognitive load was at equilibrium, or learners were not overwhelmed with excess information. Puzzles by definition provide challenge that is within reach but challenging, allowing focusing of mind efforts on solution to puzzles and language ability acquisition. Puzzles' bounded but flexible

character allows learners to gain information without excessive mental effort, thereby fostering learning and communication skill acquisition.

A second prominent theory applicable to learning through puzzles is Vygotsky's sociocultural theory (Vygotsky, 1978), which concentrates on how co-participation and interaction in social environments affect intellectual development. According to the arguments by Vygotsky, learners gain a higher amount of knowledge through co-participation with individuals who are more proficient than them, either students or teachers. When solving a puzzle, students are often together in a class, breaking clues, reasoning, and solving puzzles as a group. This collaborative feature is in accord with Vygotsky's theory of the Zone of Proximal Development (ZPD), whereby learners work at a point of threshold of present capability but which can be attained with the aid of others. Therefore, puzzles can be a force for communicative competence development by promoting peer-to-peer language use and working together to solve problems, both of which are core elements of the Vygotskyian approach.

Constructivist learning theory also has a sound basis for the application of puzzles in language learning. Piaget (1970) states that the learner builds his or her own knowledge by active interaction with the world, including problem-solving and handling materials. In the constructivist classroom, the activity of solving puzzles engages the learners in active manipulation of the language, application of prior knowledge, and testing out new hypotheses. This embodied, experiential strategy is especially useful for the training of communication skills, as the students will be required to create language output as they work to complete the puzzle. Additionally, puzzles are quite flexible to levels of proficiency, which makes the learners able to build meaning and linguistic knowledge in their own terms (Schunk, 2012).

Interactionist theory, especially the Long (1983) theory, also lend even more support to the use of puzzles. According to this theory, learning language is made possible by interaction, particularly when learners are subject to comprehensible input and given a chance to negotiate meaning. Learners, in puzzle-solving tasks, are likely to need working on language difficulty, negotiating meaning, and adjusting their language use. These interactions, according to Long's theory, produce the input and feedback that learners need in order to develop language and improve communication skill. Puzzles thus provide an interactive setting in which students experience actual communication that has immediate impact on their language learning.

Lastly, game theory is also aided by support from endorsing puzzle-based learning. Theories of play and particularly theories of play within the context of learning situations focus on the necessity for playful learning to inspire motivation as well as communication. As Huizinga (1955) posits, play is an elementary human activity resulting in creativity, social behavior, and problem-solving. Puzzles, as a type of play, are fun and interesting language practice without even realizing it. The play-like environment of puzzles is relaxing, risk-taking, and reinforces learning and

communication in language activities, all of which are for enhancing the ability to communicate.

In conclusion, the application of puzzles in learning a language is supported by a wide range of theories such as cognitive load theory, sociocultural theory, constructivism, interactionist theory, and game theory. All these theories refer to how puzzles promote learning through active communication, cooperation, problem-solving, and communication, thereby qualifying to be an effective tool in advancing EFL learners' communicative abilities.

Previous Related Studies

Study by Al-Ghamdi (2017)

Al-Ghamdi implemented a study to investigate the effect of word search puzzles on Saudi English as a foreign language students' reading comprehension skill. The population consisted of 150 Saudi university students enrolled in English as an undergraduate course, and the sample was 60 students through the use of stratified sampling. The research used word search puzzles incorporated into reading lessons as the intervention. A reading comprehension test served as the main data collection tool. Findings showed that participants treated to the puzzles scored better on reading comprehension and gave feedback showing higher levels of motivation for reading activities than the control group.

Nunan and Miller (2018)

The effect of puzzle-based practice on the grammatical correctness of Chinese university-level EFL learners was measured in this research. 300 undergraduate students were sampled, and 80 learners were randomly assigned to enter the experimental group from among them. Grammar-based puzzles such as sentence completion and word sequencing puzzles were given for weekly grammar class. On a test of grammar, performance was measured pre- and post-intervention. Results indicated that the experimental group learned more in grammatical correctness compared to the control group, pointing towards the superiority of puzzles as another tool to instruct grammar.

Wang and Chen (2019) study

This study was performed in order to investigate the efficacy of crossword puzzles in improving learning vocabulary in English as a foreign language for EFL learners. The population was Taiwanese high school students, and the sample was 120 participants divided into control and experimental groups. Researchers employed crossword puzzles as the main medium of learning for the experimental group, whereas the control group was given traditional vocabulary training. Pre- and post-tests were administered to assess vocabulary gain. The result showed that the experimental group obtained significantly higher than the control group when it

comes to vocabulary recall and retention, and it suggests that puzzles can yield an increase in motivation and learning gain in EFL settings.

Bhatti and Yaqoob (2020)

This study investigated the role of jigsaw puzzles in the collaborative learning and speaking ability of Pakistani EFL learners. The population was students at high school who reside in urban cities, and the sample was 100 students who were assigned to an experimental group and a control group. Jigsaw puzzles were implemented in practice in speaking practice activities for the experimental group, whereas the control group was taught using traditional speaking drills. Speech performance test and observation checklist were employed as data collection tools. Based on the findings, experimental students improved significantly in fluency, coherence, and interaction over the control group, which indicated the effect of puzzles on enhancing the communication skill.

El-Sayed (2021)

El-Sayed experimented with problem-solving puzzles and critical thinking capacity among Egyptian preparatory school students. The age group of the students was 12 to 15 years, and the sample consisted of 70 students further segregated into two groups. Students of the experimental group received weekly sessions comprised of puzzles used to enhance analyzing and solving problems, whereas the control group went through the regular curriculum. Assessment tools consisted of a pre-test and post-test using a critical thinking skills rubric. Findings showed that the experimental group learned more critical thinking significantly than the control group, warranting the use of puzzles to promote higher-order thinking skills in EFL situations.

Discussion of the Previous Related Studies

The studies under review hold significant implications for the application of puzzles in the development of EFL learners' different language skills, which supports the objectives and goals of the present study strongly. All the previous studies highlight a particular aspect of puzzle-based strategies and reflect an integrated perspective of their necessity and utility in language acquisition.

These previous studies together illustrate the overall advantage of puzzles in EFL teaching, i.e., enrichment of vocabulary, grammar, comprehension, cooperation, and critical thinking. The present study advances from these studies in that it examines elaborately how puzzles increase communicative competence of EFL learners. It synthesizes evidence from these studies in providing an overall framework for explaining and implementing puzzle-based solutions to develop communicative competence. This consistency among the existing research and prior research confirms the potential of puzzles as a unique and productive tool in language learning.

1. Aims

The research studies presented in this paper form the basis to address how puzzle-based approaches have been implemented across disciplines of language acquisition. All the studies accentuate certain goals, complementing the broad goal to enhance EFL learners' proficiency. The goals in this research complement and expand these by highlighting the efficacy of puzzles in communication, a critical dimension of language ability.

The present research especially tries to explore the overall effect of language puzzles on the communicative ability of EFL learners. In contrast with the earlier research, which is centered on a particular domain such as vocabulary, grammar, or teamwork, the present research has a holistic approach. It unites them under a broad concept of communicative competence and illustrates how they collectively foster linguistic, cognitive, and interactive ability. This integrative purpose identifies the novelty of the present study in that it aggregates findings from previous studies to investigate the explicit use of puzzles to enhance EFL students' overall communicative competence.

Populations and Samples

The populations and samples of the reviewed studies vary in multiple settings and contexts, and each of them contributes different perspectives regarding the effectiveness of puzzle strategies. Al-Ghamdi (2017) employed Saudi EFL learners, specifically 150 English major undergraduate students, with a sample of 60 participants through stratified sampling. This population provided information on the enhancement of reading comprehension through word search puzzles among learners at the level of university. In the same vein, Nunan and Miller (2018) conducted research on university students learning EFL in China and randomly selected 80 out of 300 students as their population. Their grammatical accuracy through puzzles was helpful in giving insights for tertiary settings.

This study follows and extends these studies, specifically to EFL students at prep schools. Similar to El-Sayed's study, the study targets younger students but in a different way of examining the language puzzle role in conveying skills. The population and sample of this study are very similar in a comparable setting with applicability as well as extending scope towards a more complete understanding of communication covering speaking, listening, and interaction. This approach allows the present research to draw context-specific conclusions along with overall implications concerning the application of puzzles in language research.

Tools

The instruments adopted by the reviewed studies give a wide array of ways to assess the efficiency of puzzle methods in the acquisition of EFL. Al-Ghamdi (2017) applied reading comprehension tests to examine differences in the effect of word search puzzles, with a quantitative correspondence among the treatment and the reading proficiency of the students. In a parallel context, Nunan and Miller (2018) applied grammar tests as their main instrument to examine improvements in grammatical correctness, giving quantitative evidence for the improvement of the learners.

The present research borrows and modifies these instruments to meet its own particular emphasis on communication abilities. It employs speaking and listening performance tests to quantify learners' communicative ability, as well as observational checklists to monitor interactive action in the process of carrying out puzzle-based tasks. Through using these instruments, the present research builds upon the approaches of the earlier studies but tailors them to evaluate the wider and more holistic effect of puzzles on EFL learners' communication. This allows for consistency with previous research and innovation in meeting new aspects of language ability.

Results

The findings of the studies under review always indicate the positive impact of puzzle activity in language learning sections, specifically building students' EFL abilities. The researcher in Al-Ghamdi (2017) found that word search puzzle-performing students achieved higher results in reading comprehension than the control group. The experimental group was also more motivated to perform reading exercises, thereby showing that not just puzzle constructing comprehension, but even makes learning a more enjoyable process.

In similar terms, Nunan and Miller (2018) showed that puzzle-based grammar-focused activities were more effective compared to the grammatical accuracy of university students. The experimental group improved in the use of grammar and thus it is possible to say that puzzle-based activities can be a good approach to ensuring practice in grammar for EFL learners.

This current research, in line with the findings of these earlier studies, aims to produce the same positive outcomes. It hopes for language puzzle exercise to lead to greater communicative competence, e.g., speaking, listening, and interactive behavior. The outcome of this study must be able to verify that puzzles can be an effective tool not only for learning language but also for creating active interest and dedication to communicative interaction. Use of vocabulary, grammar, and critical thinking by puzzles will create a synergy effect too and lead to more efficient and confident communicative activity of EFL learners.

3. Methodology

3.0 Introductory Note

This chapter introduces the procedures followed in carrying out the current study, entitled "The Impact of Language-Based Puzzles on EFL Students' Communication". The chapter gives the framework within which the research was conceptualized, carried out, and evaluated.

The major aim of the present study is to explore if language puzzles in English as a Foreign Language (EFL) classes could improve the first intermediate Iraqi school children's communicative competence.

It presents a clear definition of the research design, population and sample, selection of data collection instrument, administration of the experiment protocols, as well as statistical methods used in analyzing the collected data.

3.1 Experimental Design

The quasi-experimental research design, i.e., the pretest-posttest control group design, applied in most education research to gauge instructional intervention effectiveness (Creswell, 2012) is utilized in the study. In order to find out whether or not the application of language-based puzzles will significantly improve Iraqi EFL first intermediate school students' level of communication skills compared to the conventional method of instruction.

The research includes two groups:

- **Experimental Group:** Receives instruction through language-based puzzles.
- **Control Group:** Receives conventional instruction without the use of puzzles.

3.2 Population and Sample of the Study

3.2.1 Population of the Study

The population of this study consists of first intermediate school pupils enrolled in public schools in Iraq during the academic year 2024–2025. These pupils are typically aged 12 to 14 years and are at a crucial stage of learning English as a foreign language, where communication skills such as speaking and writing begin to improve more prominently.

The population is relevant to the research aims, as it reflects the typical EFL learning environment in Iraq, where students often face challenges in developing communicative competence due to traditional, grammar-based teaching methods (Al-Jarf, 2005). This highlights the need for alternative approaches such as puzzle-based learning to promote interaction and motivation in EFL classrooms.

The participants in this study are consist of (231) EFL Iraqi first intermediate school for boys from Kirkuk, Al-Aamal Al-Shaabi District. The total population of this study is 231 participants from three intermediate schools in Kirkuk city, at Al-Aamal Al-Shaabi District schools, as explained in table (3).

3.2.2 Sample of the Study

The sample of this study was selected from the larger population of first intermediate school pupils in Iraq. A purposive sampling technique was used to select two intact classes from a public intermediate school that shares similar characteristics with other schools following the national English curriculum. This approach is commonly adopted in quasi-experimental designs where random assignment is not feasible due to school administration constraints (Creswell, 2012).

The sample consists of **104 pupils**, divided equally into two groups:

- **Experimental Group:** 45 pupils who received instruction through language-based puzzles.
- **Control Group:** 45 pupils who received traditional instruction without puzzles.

The pupils were matched as closely as possible in terms of age, gender, and English language proficiency based on their performance in a pretest administration before the experiment. This is done to ensure that any observed differences in the posttest could be attributed to the intervention itself and not to pre-existing differences between the groups.

For the purpose of fulfilling the goals, the current study has randomly chosen (90) pupils first intermediate school, which is Al-Nidhal Secondary School for Boys because it contains the highest number of sample for the period of the academic year 2024-2025, at Kirkuk, Al-Aamal Al-Shaabi District.

4.1 Data Analysis

4.1.1 Results related to the First hypothesis

First Hypothesis: There is no statistical significance difference between the mean scores of the experimental group which is taught by using the language-based puzzles strategy and the control group which is taught by the traditional in post communication test.

To ascertain whether there is a significant difference between the experimental and control groups' posttest mean scores. Statistics showed that the control group had mean scores of (62.83) while the experimental groups had mean scores of (60.31). The tabular t-value is (2.000), while the calculated t-value, as shown by the t-test strategy for two independent samples, is (4.327) at the degree of freedom (88) and level of significance (0.05). This suggests that the communications of the experimental group are very different from those of the other group.

Thus the first hypothesis, is rejected, as table (1) shows.

Table (1): Means, Standard Deviation, and t-Values of the Two Groups in communication Test

Groups	No. of pupils	Mean	SD.	T-Value		DF	Level of Significance
				Calculated	Tabulated		
EG.	45	62.83	14.53	Calculated	Tabulated	88	0.05
CG.	45	60.31	9.63	4.327	2.000		

4.1.2 Results related to the Second hypothesis

Second Hypothesis: There is no statistical significance difference between the mean scores of the experimental group in pre and post communication oral and written test

To ascertain whether there is a significant difference between the experimental group's mean scores on the cognitive engagement measure and those of the control group. Statistics showed that the control group's mean score was (58.06) while the experimental groups' were (60.52). The calculated t-value, using the t-test strategy for two independent samples, is (5.624); the tabulated t-value, at the level of significance (0.05) and degree of freedom (88), is (2.000). This suggests that the communications of the experimental group are very different from those of the other group.

Hence the second hypothesis, is rejected, as can be seen in table (2).

Table (2): Means, Standard Deviation, and t-Values of the Two Groups

Groups	No. of pupils	Mean	SD.	T-Value		DF	Level of Significance
				Calculated	Tabulated		
EG.	25	60.52	14.73	Calculated	Tabulated	88	0.05
CG.	25	58.06	13.63	5.624	2.000		

4.2 Discussion of the obtained Results

The results obtained from the post-tests provide clear evidence of the positive impact of using the language-based puzzles strategy on EFL pupils' communication skills. Regarding the first hypothesis, which stated that there is no statistically significant difference between the experimental group and the control group in the post-communication test, the findings indicate otherwise. The calculated t-value (4.327) was significantly higher than the tabulated t-value (2.000), demonstrating a statistically significant difference in favor of the experimental group. This result suggests that the use of language-based puzzles had a notable effect in enhancing learners' ability to communicate in English, likely due to the engaging, problem-solving nature of the strategy, which promotes active participation and meaningful language use.

The dismissal of the first hypothesis follows earlier research that found it beneficial to use interactive and game-like learning styles in EFL contexts. Language puzzles demand critical thinking, collaborative work, and the application of linguistic knowledge in context, favoring deeper language acquisition and greater communicative competence.

For the second hypothesis, where it was argued that there is no significant difference between the pre- and post-test scores of the experimental group in the communication skills, the findings once again showed statistically significant gain. The experimental group scored significantly high in the post-test with the value of $t(5.624)$ being greater than the tabulated value (2.000). This suggests that the language puzzle technique was effective in the development of oral and written communication skills during the treatment period.

This enhanced competence in communication can be a byproduct of cognitive and linguistic stimulation given through the language puzzles. Language puzzles require learners to decode, reconstruct, and use language structures in context, which enhances use as well as retention. All this would enhance motivation and interest as well, particularly with young learners, thus again strengthening the outcome of learning.

Lastly, the use of language-based puzzles in the classroom not only increases student participation but also their communication skills, thereby justifying the pedagogical merit of the method in EFL teaching.

5.1 Conclusions

Based on data analysis and findings of the communication post-tests, it can be seen that language-based puzzles strategy significantly positively affects the development of EFL students' communication skills. It was found that those students who were instructed under this strategy performed better than students in the control group instructed traditionally. This indicates that the integration of puzzles into language education enables enhanced learning through enhanced active engagement, critical thinking, and collaborative problem-solving.

In summary, language-based puzzle strategy is an efficient strategy of teaching to build communication skills in EFL students. It triggers learners both linguistically and cognitively, thus suggesting meaningful language use and communicative competence in general. Such a result supports the need for integration of new, student-centered strategies in the context of EFL classrooms to more effectively facilitate language development.

5.2 Recommendations

It is recommended by the research that using puzzles in language learning should be incorporated as an integral part of a teacher's strategy, specifically when

trying to advance children's communication. Puzzles can have a dynamic and stimulating process of learning that enhances critical thinking, cooperation, and effective utilization of language in writing and speech.

Curriculum developers and policymakers in education should be motivated to incorporate puzzle activities into English language syllabuses, particularly in preparatory schools. It can fill the gap between practice and theory and assist in solving the most common issues of conventional approaches to teaching languages.

The ministry of Education is also recommended to involve EFL teachers into in-service training courses and train them on using language-based puzzles strategy for improving the oral and written skills of their pupils.

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