

TRIZ as Innovative Method in English Language Teaching

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Abstract

Learning English is critical because English is an international language, and it plays a significant role in everyone's life. English serves as a gateway to the world. Education is a tool that allows students to both acquire knowledge and develop their creative thinking skills. The purpose of this study is to investigate the benefits of TRIZ implementation as an innovative method for foreign language teaching and learning, in English lessons to improve students' writing and reading skills. An experimental group and a control group were compared within the framework of a quasi-experimental research design. In the experimental group, English lessons, reshaped within the framework of TRIZ, an innovative teaching method, were held for two months. In the control group, any teaching activities shaped within the framework of the TRIZ method were not carried out. A pre-test and a post-test were used to analyze the effectiveness of the TRIZ method on students' writing and reading skills and to compare the experimental and control groups. In addition, observations (students' interactions with the teacher and their views on the teaching method used) were made to evaluate the participants in both classes and to compare their similarities and differences. In summary, within the framework of this research, it was concluded that the application of the TRIZ method in English lessons improves students' reading and writing skills and can help bring an innovative perspective to English Language Teaching.

Keywords: TRIZ, TRIZ Method, TRIZ principles, reading and writing skills, innovation, problem-solving

1. Introduction

1.1 Statement of the Problem

English is a global language, and increasingly more people are learning it. As English is an international language, it is integrated into the education system in many countries. For example, although Turkey is officially a monolingual country, English is considered a unique, additional language (Doğançay-Aktuna, 1998). Indeed, the English language is widely used in many parts of life, and therefore it is taught as a foreign language in schools all over the world from an early age (Broughton et al, 2003). Oliver (2016) stated that teaching English as a foreign language requires the use of various methods and techniques. Indeed, a range of different teaching methods has been developed by many professors and researchers for over a century, including innovative methods. Prior to this century, the methodologies of language teaching varied between two approaches; the first approach focused on using language for communication, while the second approach focused on analyzing language techniques, 2 including learning grammatical rules (Matus, 2011). The current study investigates the use of TRIZ - a method of inventive problem solving that contributes to making learners' minds more flexible and creative - as an innovative method of teaching English for the purpose of increasing learners' reading and writing academic achievements. Reading and writing in a foreign language have myriad benefits. Improved reading skills can also develop individuals' cognitive and physiological skills. In a study by Schwerdt and Wiederhold (2019), it was found that individuals who have achieved a suitable degree of reading ability invariably had higher educational outcomes which led them to have a favorable impact on the national economy. Cheng and Matthews (2016) also emphasized that reading skills are crucial for strengthening other language skills, such as writing. Improved writing skills are also greatly beneficial because they strengthen learners' intellectual abilities, for example thinking development, language effectiveness, and communication. Various studies have found that people's performance in various fields is strongly related to their writing abilities (Graham, 2007). Accordingly, improving both students' writing and reading skills should be a key component of English language learning. The goal of education is not only to provide the learners with information but also to develop their capacity for creative thinking and awareness of ever-advancing information. Researchers have analyzed the most effective teaching methods, which include TRIZ (Ekmekci & Nebati, 2019). TRIZ is a powerful method

that helps learners to tackle problems by inventing innovative solutions (Gadd, 2019). Kaplan (1996) stated that the use of TRIZ influences the neural networks within the brain, allowing individuals to become more inventive and approach issues from distinctive points. Indeed, Maan (2002) highlighted that TRIZ can help learners to replace old, chaotic methods of solving problems with organized, innovative methods. This study aims to address this gap by implementing the use of TRIZ as an innovative and creative method in English language teaching in order to support learners' reading and writing skills at an intermediate level in an Iraqi school in Gaziantep – Turkey. Vincent (2000) suggests that the TRIZ method develops learners' creative abilities in solving problems faced in their studies; the TRIZ method aims to make innovation a systematic process by using a set of creative principles and strategies. Therefore, implementing the TRIZ method in English language teaching could increase learners' ability to solve any problem.

1.2 Importance of the Problem

The goal of this study is to investigate the advantages of TRIZ implementing TRIZ as an innovative method in English language teaching and to analyze its efficiency in improving learners' academic achievements. This study will examine if TRIZ improves learners reading and writing achievements through a standardized test. Crucially, the use of the TRIZ method in English language teaching may have better outcomes for students when compared to more traditional methods. This study is novel, and it provides insight into the use of TRIZ in English learning for the first time. The outcomes of this study will contribute to understanding both how to develop learners' reading and writing achievements and also how to enhance teachers' teaching methods. This study will contribute to identifying reading and writing challenges that learners encounter at the level of recognition, understanding, and suggested solutions. Overall, there are many potential benefits of using the TRIZ method for learning the English language, and this study aims to examine how this method can benefit students of English and beyond.

2. Literature Review

Innovation education is a type of modern education pattern through which learners become independent, creative, and professional (Anusca Ferrari, 2009). Johnson (2019) found that teaching students using innovative and creative methods helps to develop their capabilities and makes them more creative in using their knowledge and skills. This implementation of innovative methods – such as TRIZ – consists of teaching students how to solve problems in a structured manner. TRIZ has a structured methodology for solving problems creatively in all fields and our society (Cerit, 2014). TRIZ is an innovative method based on many tools including brainstorming, mind mapping, morphological analysis, and lateral thinking. These tools help learners to both understand and solve the problem (Gadd, 2011). Therefore, the use of TRIZ in education helps learners to generate better ideas and helps teachers use creative and innovative teaching methods. Learners constantly face problems throughout their education and through life, and they need to solve them constantly. Often, there are certain methods for solving problems, which individuals follow in a specific context. However, learners may sometimes face new challenges for which they must devise their own solutions. According to Astronomy (2013), problem-solving is a cognitive process in which one must determine the problem and then discover a solution to that problem. There are various problem-solving techniques and methods; one of these is the TRIZ method. TRIZ was built on the idea that "there are universal principles of invention that are the fundamental of creative innovation that develops technology" (Jani, 2013, p.83). Sire, Haeffel, and Dubois (2012) noted that the TRIZ methodology engages students and helps them solve problems by allowing them to look for the knowledge they need. As a result, the TRIZ method implementation in education aids learners in solving their problems and challenges using new techniques.

TRIZ is a Russian theory that was developed in 1946 by Genrich Altshuller and his colleague in the 'Inventions Inspection'. It is an abbreviation of the Russian phrase 'Teoriya Resheniya Izobretatelskikh Zadatch', which is translated into English as the 'Theory of Inventive Problem Solving' (Barry, Domb, & Slocum, 2010). TRIZ is often considered as a methodology for creative problem solving; one which aims to promote ideas and increase creativity. Oliver Mayer (2015) stated that TRIZ is a systematic approach through which learners can understand and define challenging problems; its goal is to bring learners out of the usual education pattern. Nakagawa (2010) witnessed the benefits of implementing TRIZ methods in engineering and believed that it could enhance both learning and teaching in other subjects. Thus, he called for the introduction of TRIZ methods at the elementary, middle, and higher levels of education. TRIZ does not work only by helping learners to find solutions to specific problems, but it contributes to making the minds of learners more flexible and creative (Kaplan, 1996). The TRIZ method draws upon analytical tools that are important to solving problems. These tools are based on knowledge that is important for system transformation and its theoretical basis. The aim of using the TRIZ method is to identify the best solution to a problem. Further, the TRIZ methodology can be integrated with other, more traditional methods in order to solve problems more effectively (Nebati, 2019). Montecchi & Russo (2015) argued that TRIZ recognizes two types of contradiction: physical – relating to contradictory characteristics within the system – and technical – relating to subsystems in the system having contradictory requirements. Problems that include contradictions can be solved in one of two ways; firstly, by making tradeoffs, and secondly by reframing the objectives in the form of the contradiction and using this to overcome the

contradiction. TRIZ attempts to eliminate the contradictions instead of making tradeoffs (Albers, 2011). Altshuller discovered 40 'Inventive Principles' (IPs) in TRIZ. These principles help individuals along the path of solving a problem or any technical contradictions; for example, from breaking down the problem (principle 1. Segmentation) to considering feedback Figure 2 TRIZ process of innovation with its assigned methods (principle 23. Feedback). Being an effective teacher means the ability to bring a creative nature to teaching. Fisher (2004) states that creativity is an important element in education because it can improve the learners' outcomes. In language teaching, Maley (1997) emphasized that using a variety of different literary and non-literary tools can elicit creative thinking and increase one's ability to make a creative connection. TRIZ is a teaching method that is based on data, logic, and research; TRIZ helps learners to think clearly and to generate innovative ideas (Gadd K., 2019).

This study, therefore, is to investigate the effects of TRIZ implementation, as an innovative method of foreign language teaching and learning, in terms of increasing writing and reading skills for learners.

2.1 Research Questions

The aim of this study is to answer the following research questions:

Research Question 1: How useful does TRIZ be for teaching the English language?

Research Question 2: Do learners who utilize TRIZ as an innovative method perform better on a standardized reading and writing test than those who are not?

Research Question 3: Does TRIZ affect classroom interaction?

2.2 Theoretical Framework

Quasi-experimental designs are particularly beneficial for evaluating the cause-effect relationship between the independent and dependent variables in education processes (Gribbons, 1996). Loewen and Plonsky (2016) defined the independent variable as the variable that influences the end outcomes, and the dependent variable as the variable that is influenced. Among various types of experimental designs, there are two general categories: true experimental design and non-experimental design. Gravetter (2018) stated that a true experimental design includes manipulating one or more independent variables, and the dependent variables are attentively measured through pre-and-post testing. A true experimental design also is distinguished by random assignment, in which participants are assigned to the control and experimental conditions at random using a randomization technique (Nunan, 1992). The main difference that distinguishes true experimental design from non-experimental design is the lack of a completely random assignment. Quasi-experimental designs have several elements of experimental designs but vary in a few ways. For example, a comparison group is predetermined to be equivalent to the treatment group in important aspects, such as eligibility for the same services or being in the same school vogue (Rossi & Freeman, 1989). Therefore, researchers must ensure that the comparison group meets specific criteria in order to obtain more explicit conclusions about the causal relationship between two variables by using a quasi-experimental design (Marsden, 2012). Kelly (2008) stated that the learning environment in the quasi-experimental study is made up of independent features that could be controlled and manipulated by the researcher.

3. Method

Quasi-experimental was the main research design adopted in this study. Data was collected from non-random, gender-segregated, classes of eighth-grade students, aged 13 to 15, at an international, Iraqi school in Gaziantep-Turkey.

3.1 Instruments

In this study, a mixed-method approach was used to collect both quantitative and qualitative data to measure the variables related to the use of TRIZ as an innovative teaching method. This approach is commonplace in education studies, and academics recognize it as a robust and reliable method. Quantitative data was obtained using the KET test (English Key Test) to quantify the effects of applying TRIZ as an innovation method on learners' performance by comparing the post-test to the pre-test results in a reliable way. Qualitative data was obtained through observation to the researcher observing and making notes of teacher-student interactions.

3.1.1 Key English Test (KET)

According to Fryzlewicz (2020), the KET test is designed for non-native English speakers at the A2 level. This test is deemed by the Common European Framework of Reference for languages as a reliable and suitable language test for eighth-grade students (CEFR, n.d.). Reliability is important because it ensures consistency and stability with a measuring instrument (Sürücü, 2020). To ensure that this KET test was in fact reliable – and convenient for students participating in this study - the researcher piloted it to ten students and found that it was. Ten students were selected because the alpha coefficient was 0.91, suggesting that the KET test has high internal consistency (Ary, 2010). The researcher used only the writing and the reading sections test as the standardized pre- and post-test as a measurement of the participants' English level. The KET consists of 32 questions split into seven sections, and it covers two skills:

reading and writing. The participants had 60 minutes to complete all the questions. The test consisted of five reading sections and two writing sections.

3.1.2 Observations

Observation is a description of a particular situation, set of actions, and traces in a study context (Marshall, 1989). This method was used to observe and describe the participants' performance in the experimental class and classroom interaction. In such a way, observations enabled the researcher to look for nonverbal expressions of feeling, discovered who interacts with whom and how participants connect and helped them to see the amount of time spent on different activities (Schmuck, 1997). The researcher played the observing-participant role in that the participants were unaware that they were under observation. The researcher engaged in the class and made observations. This method entailed collecting data using one's senses, by looking and listening, in a methodological and meaningful way (McKechnie, 2008). The main purpose of using this tool was to monitor the participants in both classes and compare their similarities and differences on several points.

3.2 Participant

Eighth-grade students, aged 13 to 15, at an international, Iraqi school in Gaziantep-Turkey, were the participants in this study. Eighth-grade students were the subject of this study, according to an expert's opinion, they have the enthusiasm and ability to learn new ideas and information. In addition, the eighth-grade students are not deemed to have a ministerial degree – students do not undergo exams where the outcomes will seriously impact their future educational journey - therefore, it was assumed that experimenting with lessons would have no real harmful impact. Twenty students, from one school, participated in this study. Pupils and teachers are mostly reacting to the many pressures that boys and girls bring (Good, 1973). The selection of the experimental and control groups was not in random. The decision to conduct the research at this school was based on several considerations. Firstly, the school's principal provided a favorable research context, in that they allowed the researcher to attend classes to take in-person observations. Secondly, the school was located in the same city so the researcher could attend all English lessons in order to take notes.

3.3 Data Analysis

A mixed-method research design was used in this study. Quantitative and qualitative data were collected from the eighth-grade students. The researcher used a mixed-method research design since both qualitative and quantitative data results could be compared and validated, which ensured any conclusions reached are robust and valid (Byrne, 2007). Overall, employing a mixed methods design aided a deeper understanding. The quantitative data was obtained by taking a pre-test and post-test for the students while the qualitative data was obtained through taking observations. IBM (SPSS 22) Statistical Package for Social Science was used to analyze the quantitative data and to estimate the reliability of the study's result. The KET test scores of both groups were inputted into SPSS and a pair of measurements - a t-test and independent sample t-test - was used to analyze the difference in English level. These tests indicate if there are any statistically significant differences in the students' reading and writing skills across the two groups. The qualitative data were analyzed using thematic analysis (TA); a technique used for detecting and analyzing meaning patterns in a dataset (Braun & Clarke, 2006). The researcher followed six steps according to the thematic analysis, to analyze the taken observations, as follows:

- 1- Familiarization means being well familiar with the entire data through reading and re-reading the transcripts.
- 2- Coding means generating initial codes in order to organize data in a meaningful and systematic way. Coding helps in reducing lots of data into small chunks of meaning.
- 3- Generating themes means highlighting significant or interesting data or research questions in an organized pattern.
- 4- Reviewing themes entails evaluating, adjusting, and refining the preliminary themes that were discovered in step to ensure that data are logical and support the themes in addition to gather all the relevant data to the appropriate theme.
- 5- Defining and naming themes means determining the essence of each theme's content including what is the message of the theme. how do subthemes connect and relate to the primary theme? and what is the relationship between the themes?
- 6- And writing up means having a set of fully developed ideas that involve the final analysis and write-up of the report. This step aims to persuade the reader to understand the complex tale of the collected data by giving brief, cohesive, logical, and non-repetitive information within and between the themes.

4. Results

In this section, the results of the study are presented, interpreted, and discussed.

4.1 TRIZ as Innovative Method Effect on Teaching the English Language

The TRIZ method was used on eighth-grade students in two classes. The first class represented the experimental group who were exposed to the TRIZ method, whereas the second class was the control group, who were not exposed. The KET pre-and post-tests for reading and writing skills were used to compare the learners' results in the experimental and control groups. In addition, the researcher played the role of an observer to keep track of the learners in both groups and compare and contrast their similarities and differences on a variety of points.

4.1.1 The Learners T-Test for Two Independent Samples

An independent sample was conducted to compare the mean scores for the experimental and the control groups' academic achievements to see if the difference was statistically significant.

Table 1. Independent Samples Test for the Learners

	group	N	Mean	Std. Deviation	Std. Error Mean
General difference	Experimental	10	10.20	2.61	0.82
	Control	10	7.00	3.16	1.00

Table 1 highlights that the experimental group (M = 10.20, SD=2.61) was 3.20 points higher than the control group (M = 7, SD = 3.16). Table 2 evidences that there were statistically significant differences in the t-test value of 17.39 = 2.46 and a level of statistical significance of p = 0.02 in the scores which is lower than 0.05.

Table 2. Independent Samples Test for the Learners

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
General difference	Equal variances assumed	0.05	0.82	2.46	18	0.02	3.20	1.29	0.47	5.92
	Equal variances not assumed			2.46	17.39	0.02	3.20	1.29	0.46	5.93

The magnitude of the difference in the means (3.20, with a 95% confidence interval of 0.46 to 5.93) was significant. Hence, the experimental group was supported using TRIZ methods during teaching.

The KET pre-and post-test findings for both groups to some extent showed agreement on the research hypothesis that the innovative method of TRIZ method is more useful for teaching English than traditional methods. The general KET test results of the experimental and control groups were compared, the comparison evidence that the difference between the post-test and pre-test for the experimental group is ten points, whereas the difference between the post-test and pre-test for the control group was seven points. These findings indicate that the experimental group's learners, which used TRIZ as an innovative method, improved their performance more than the control group. Therefore, using the TRIZ method to teach the English language may help them enhance their performance.

4.2 TRIZ Impact on the Learners' Writing and Reading Skills

The KET test measured only reading and writing skills, with each skill being crucial for learners and complementary to the other. A separate analysis was carried out to compare both groups' performance for each skill. Between the experimental and control groups, there was a one-point difference in accomplishment for reading skills and three points for writing skills. The data evidenced that the experimental group's writing skills were better than their reading skills. In addition to the test score data, the observations made throughout the experiment matched the KET test results. Indeed, there were differences in the performance between the experimental and control groups' learners. TRIZ method complemented the communicative approach and participatory methods like task-based learning. The implemented activities based on the TRIZ principles encouraged students to communicate with each other and share their knowledge with each other. Students are encouraged to speak with one another and share their expertise through the TRIZ-based activities that were developed. All the skills that the experimental groups gained encouraged them to have more control over the learning process, and they were taught how to solve problems, think critically, and apply what they had learned.

4.2.1 Significance Reading Test for the Experimental and the Control Group's Score

Table 1. Significance Reading Test Scores of Both Groups

group			Mean	Paired Differences		95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Std. Deviation	Std. Error Mean	Lower	Upper			
Experimental	Reading	Pre-and post-test	-4.50	1.35	0.42	-5.46	-3.53	-10.51	9	0.00
Control	Reading	Pre-and post-test	-3.60	1.57	0.49	-4.72	-2.47	-7.21	9	0.00

Table 3 evidences that the experimental group t-test value of -10.51 and a level of statistical significance of 0.00, and the control group t-test value of -7.21 and a level of statistical significance of 0.00. The mean of the experimental group was -4.50 with a 95% confidence interval ranging from -5.46 to -3.53. In contrast, the mean of the control group was 3.60 with a 95% confidence interval ranging from -4.72 to -2.47. Overall, one can conclude that the experimental group's learners, using TRIZ as an innovative method, had statistically significantly improved their reading skills more than the control group.

4.2.2 Significance Writing Test for the Experimental and the Control Group's Score

Table 4. Significance Writing Test Scores of Both Groups

group			Mean	Paired Differences		95% Confidence Interval of the Difference		T	df	Sig. (2-tailed)
				Std. Deviation	Std. Error Mean	Lower	Upper			
Experimental	Writing	Pre-and post-test	-5.70	1.88	0.59	-7.05	-4.34	-9.54	9	0.00
Control	Writing	Pre-and post-test	-3.40	1.83	0.58	-4.71	-2.08	-5.85	9	.000

Table 4 shows the t-test performed on both the control and experimental groups were statistically significant ($p = 0.00$), however, the experimental group had a higher t-value at -9.54 than the control group at 5.85. The experimental group means was of -5.70, with a 95 percent confidence interval of -7.05 to -4.34. The mean of the control group, on the other hand, was 3.40, with a 95 percent confidence interval of -4.71 to -2.08. The experimental group's writing post-and pre-test differed by 5.70, whereas the control group's post-and pre-test differed by 3.40.

4.3 The Experimental and Control Groups' Learners Interaction

As interaction helps in language acquisition and social skills development, maximizing interaction in the classroom is an important element of the teacher's job (British Council, 2021). Therefore, the impact of this was measured in this experiment using an observation tool. As previously noted, the researcher monitored the impact of different teaching styles and interactions in order to compare their similarities and differences in several ways. Although the teacher used the same curriculum to educate the experimental and control groups' students, they used the TRIZ method in the former group only. TRIZ method lends itself to using a learner-centered participatory approach. Therefore, the teacher in the experimental group acted as a facilitator of the learning process in the classroom by stating the lesson objectives; presenting the lesson's concept; and using TRIZ method while teaching. On the other hand, for the control group, the teacher acted as the central, authoritative character in the classroom. In addition to this method, the teacher used a variety of instructional strategies, including role-playing and debate, for both groups. The only difference was that, for the experimental group only, the teacher described what TRIZ is and what the research's goal was. There was difference in the interaction between the experimental and control groups' students. The use of the TRIZ method encouraged students to use teamwork in the experimental classroom. Although they initially were opposed to this – with one student stating, "We used to work individually" - they eventually accepted this and other methods in TRIZ. Accordingly, they transformed their individualistic learning techniques into more collaborative methods, allowing them to learn more quickly and effectively.

4.4 TRIZ Method and the Development of the Reading and Writing Skills

The TRIZ Method was employed in order to improve the experimental group's reading and writing skills. The TRIZ principles, in addition to the methods chosen by the teacher, were employed to improve writing and reading skills. After two months of the intervention, the researcher noted that the experimental group's learners' reading skills were

improved. With regards to the experimental groups' reading skills, the learners seemed to have a very limited amount of vocabulary, so they had problems in understanding the meaning of the whole text and participating in the lesson. For example, the researcher noted that the learners paused at every word they did not understand and inquired about its meaning. Later, the teacher taught the learners, in the experimental group, the method of breaking down a paragraph into smaller chunks; a method called the 'Another Dimension Principle' (Altshuller, 2013). The teacher divided the class into groups to work in pairs or teams, with each group member reading a different paragraph and then summarizing it for the group and then to the rest of the class. In addition, using the highlighter to indicate the keywords in a paragraph helped the learners to improve their skimming and scanning techniques, which led them to assume the meaning of the unfamiliar vocabulary based on the context. Some students complained about the length of phrases or a paragraph, but they were able to overcome this problem by adopting the principle 'Other Way Round' (Altshuller, 2013). This involved, breaking a sentence or paragraph down into smaller parts and then re-reading it. For writing skills, the learners suffered from various problems, including an inability to form new ideas about a topic, a lack of imagination, and a lack of interest in writing. The teacher used the TRIZ principles to help students overcome some of these problems, such as through the Preliminary Action and Composite Structures principles (Altshuller, 2013). The learners were taught how to brainstorm about the topic before beginning writing, including through the use of short videos or pictures. This method helped the learners to improve their vocabulary and ideas for writing and kept them motivated. The teacher also used the TRIZ principle 'Periodic Action' to enhance students writing skills at the beginning by reading a short text and then asking them to write something similar to what they had read. This method also effectively helped the teacher to keep the learners' focus throughout the lesson. The learners not only improved their reading and writing skills, but they also learned to both learn effectively and independently and also give feedback to others. Furthermore, they learned how to work together cooperatively and help one another. This was facilitated by the teachers' use of the TRIZ principles and their innovative ways of delivering a lesson. In terms of development, both the learners in the classroom progress and their test grades improved. As such, one learner commented that "we found out how to study by ourselves and what is the meaning of working together". Overall, it was clear that the use of the TRIZ method improved the experimental group's skills when compared to the lack of its use in the control group.

5. Conclusions and Recommendations

The current research sheds light on the impact of TRIZ implementation as an innovative method for foreign language teaching and learning in terms of improving learners' writing and reading skills. In light of this study's findings, teachers should be encouraged to use a variety of teaching methods to fulfill the needs of their students, and they should be flexible in their application of diverse methodologies and approaches in the classroom. Because this study relies on a communicative strategy and participatory learning, it was obvious that at the beginning, students preferred to work alone rather than in pairs or groups. This demonstrates the strong need for teachers to encourage students to work in groups more because it helps them to learn from one another and enhance their communication skills. In this study, an existing textbook was utilized throughout the lesson for both groups, however, questions and topics within the book were explained via the innovative, TRIZ method for only the experimental group. Though the results suggest that control group students who only used the textbook also improved their reading and writing skills, they did not improve their end results as much as those who were treated with the application of TRIZ. TRIZ implications for teaching and learning suggest that teachers can constantly adapt and reformulate their teaching materials in order to lead learners to higher achievements. The findings of the current study reveal that the learners' performance in the experimental group was improved not only in the terms of test scores but also in the terms of their ability to communicate with one another. It is suggested that further research should be conducted with learners in primary and secondary schools, with the goal of investigating whether the use of TRIZ in language teaching and learning at all levels of schools is effective. In this way, teachers can assist students in improving their communication skills as well as their test scores. Furthermore, while employing TRIZ as an innovative method for teaching EFL learners, all English skills - including speaking and listening - should be considered for future studies. Additional studies with students from other schools, for example, states schools, and in other contexts should be conducted to examine if using TRIZ as an innovative method always has any impact on students' performance. Also, further research should be focused on completing the syllabus according to the TRIZ method at the scheduled time. The content of TRIZ principles is comparable to other teaching approaches; therefore, comparing the TRIZ method to other English language teaching methods and instructions as an innovative method will be valuable.

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