Original article

Innovative Instructional Tools in Vocabulary and Grammar Teaching

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Abstract

Rise of technological tools and the COVID-19 pandemic, technology has become an important part of daily life, including teaching and learning activities. The use of innovative tools in teaching grammar and vocabulary has been a controversial issue for a long time. The urgent need for such instructional tools has made it a significant part of language learning classes. Regarding these needs, the study focused on innovative instructional grammar and vocabulary teaching tools in English language teaching settings. The study's main purpose was to investigate the differences between the setting where innovative instructional tools for grammar and vocabulary teaching were used and the setting in which only traditional methodologies were used to teach grammar and vocabulary. The study took place in a public university in Türkiye and 76 major beginner-level students participated in the study. The study was a quantitative study which has a pre-test and post-test design and a comparison of control and experimental groups. Results suggested a significant difference in vocabulary and grammar achievement between two groups.

Keywords: Innovative Tools, Technology, Vocabulary, Grammar, Language Teaching.

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INTRODUCTION

Modern educational approaches and methods have led to the use of technology in teaching environments. With the rise of interactive and communication-based teaching in English language teaching classes, technological tools and web-based communication tools have played a pivotal role to organize effective language teaching settings (Abdug'afurovich, 2022). However, as language teaching consists of different skills such as listening, speaking, writing, reading and also some subskills like grammar and vocabulary; the term "learning a language" is composed of a total of all these skills and subskills (Dehham, 2021).

Furthermore; in teaching these skills, the integration of technology has been shaped accordingly. Also, advances in technology have been a paramount factor in deciding the technological tools to be used while teaching English. For example, while in the 70s and 80s, the use of video and audio courses promoted by slide shows and video projectors was prominent; in the late 80s and 90s, these tools were replaced by language labs in which the multimedia language programs were included became more popular (Ahmad,2012). These ubiquitous developments in technology have brought new advances in the methodology of teaching English, especially in teaching grammar and vocabulary with a shift from the "Grammar Translation Method", in which the teacher explains every single word by using the native language, to "e-learning tools and modern technologies era" which is designed to meet the demands of the modern world (Chhabra, 2012:.2).

One of the most prominent technological tools used for pedagogical purposes is a smart or interactive board which dates back to the beginning of the 1990s (Brigham, 2013). All the technological tools such as interactive boards, projectors or multimedia language teaching programs are called as innovative instructional tools as a pedagogical term. Therefore, this study is concerned with the effects of innovative instructional tools in teaching subskills of EFL, namely grammar and vocabulary, to beginner-level university students.

Purpose and Significance of the Study

The study's main purpose is to identify the effects of innovative instructional tools in teaching grammar and vocabulary in EFL classes at the university. Innovative instructional tools are a relatively new issue for educational research. Therefore, there are no studies on teaching subskills (grammar and vocabulary) (Sevy-Billion, 2018). Taking this into consideration, the study aims to shed light on the issue of innovative instructional tools in grammar and vocabulary classes, especially, due to the fact that grammar and vocabulary teaching is regarded as traditional skills in EFL classes; yet, innovative instructional tools are the products of modern educational approaches. Therefore, this study is a mixture of traditionalism and modernism in the path of developing new ways to teach English.

Research Questions

The main research question in this study is:

o *RQ:* Is there a significant difference between the post-test scores of experimental and control groups after the implementation of innovative instructional tools?

o There are also two sub-research questions in relation to the main research question:

o *RQ1:* Do innovative instructional tools affect beginner-level university students' grammar and vocabulary achievement?

o *RQ2:* What are the effects of innovative instructional tools in teaching subskills of EFL to beginner-level university students?

LITERATURE REVIEW

The use of technology for pedagogical purposes is a relatively new issue for researchers. Although there are not many studies related to the use of technological tools and smart boards in teaching grammar and vocabulary, the studies about the use of technology in language classes can be investigated in two parts: the advantages and disadvantages of technological tools in language classes.

Firstly and advantageously, it is a widely acknowledged fact that technological tools are motivating factors in language teaching and promote learner autonomy, providing an environment less restrictive for language learners than traditional techniques (Cooper and Selfe, 1990). In other words, in language classes, technology is considered an opportunity to foster the communicative engagement of the students (Peterson, 1997). When the language learning process is considered as a total of learning different skills, Krajka (2000) describes the significance of technology with the help of websites and online techniques, writing might seem more interesting and motivating as a skill. Therefore, as grammar and vocabulary are considered traditional subskills, there is little emphasis on teaching these subskills with the help of the technological tool. To shed light on the issue of vocabulary teaching, it is proposed by Nakata (2008) that empirical research on the effects of technology on vocabulary teaching is still scant despite the developing technology and rising interest in the issue (Castillo-Cuesta, 2020; Hirschel & Fritz, 2013). Although there are very few studies on the matter, Dooly (2008, p.23) emphasises, "if we are truly interested in preparing our students to be responsible citizens in an increasingly technologically advanced society, then our way of teaching our students must reflect this" stating the importance of technological tools for new generations.

Secondly and disadvantageously, apart from regarding technology as an important motivating factor, there have been some problems related to the implication of technology in language teaching environments; as Cooper and Selfe (1990) state that the utmost problem teachers face today in connection with computers is not that of using the technology, teachers have already been using a

computer but the problem is using technology to create a real difference in language classes. Furthermore, according to some researchers (e.g., Hişmanoğlu, 2011), the disadvantages of technology in language classes can be listed as the expense of technological tools, the intervention of parents as they are afraid of technologically addicted children, insufficient time for curriculum to be followed and insufficient technical support along with unconfident teachers about technological skills. Additionally, Dhaif (1989) states that it is impossible for technological tools to replace the 'live' teacher, especially in language teaching. Another problem is that if the level of the students is not assigned correctly, use of technological tools may create chaos of uncertainty (Higgins, 1991; cited in Stanley, 2013).

However, more specifically, the use of smart boards is not recommended to be used at university lectures. According to Brigham (2013, p.196), "utilization of smart boards can also be found in higher education but is less prevalent in the classrooms of colleges and universities. Due to the limited size of smart boards, they are not ideal to teach lecture hall classes." Also, from another perspective, it is claimed that faculty members should be convinced to create a positive step for the language learning of adult learners (Brigham, 2013; Santos & Miguel, 2019). Therefore, in teaching grammar and vocabulary, problems might be related to using innovative instructional tools such as smart boards and projectors.

According to Cabrera et al. (2018), teaching vocabulary is an important part of learning a language because words are the foundation of all languages. Learning vocabulary is crucial for acquiring the four language skills of listening, speaking, reading, and writing in English as a Second Language (ESL) and English as a Foreign Language (EFL). Integrating technology and different technological tools foster motivation and academic success of students in terms of vocabulary teaching, as suggested by Sanchez-Gutierrez (2022).

Although grammar teaching has been a controversial issue for long years, it has been demonstrated that with the help of technology, teaching methodologies foster students' motivation and academic achievement (Castillo- Cuesta, 2020). Also, according to Bahari and Gholami (2022), among the various technology-enhanced language learning platforms, computer-assisted language learning was the most widely used for teaching/learning grammar. This result supports the need for exploratory and comparative research to explore the potential of non-computer learning platforms for grammar.

To sum up, because of being a contemporary issue in literature, using technological tools in ELT classes may be regarded as an issue which has advantageous and disadvantageous parts in the instruction of linguistics features. Especially smart boards are not suggested to be used at the university level.

METHODS

Participants

The study took place at two different vocational schools at a public university in Turkey. The participants comprised 76 major students who take English courses at the beginner level for two hours per week as a compulsory course. The participants had been taking English courses for approximately eight years when the study was conducted. The students were instructed in three different classes; therefore, while the control group included one class ($n = 37$), the experimental group included two different intact classes ($n = 39$). All students took the same course instructed by the same instructor. While 37 participants are male (48.7%), 39 are female (51.3%). Table 1 indicates the details about the participants:

Table 1. Participants

Group	Class	Male	Female	Total	Total
Experimental Group	Tourism 1	15	3	18	
	Tourism 2	15	6	21	39
Control Group	Paramedic 1	7	30	37	37
	Total	37	39	76	76

As a requirement of ethical responsibility, all participants were informed about the principles of the study and signed a consent form stating that they consented to participate in the study. As adult learners of English, they were detailly informed about the principles and procedures with the possible results of the research.

Research Design

This study was based on a semi-structured quantitative research design. It had the pre/ post-test research design with an instruction part of four weeks. Thus, the research took six weeks:

1st week: A pre-test was applied to both control and experimental groups.

From 2nd to 5th week: The instruction part took place during these weeks. It lasted for four weeks. For the second week, the grammar topic "Past Simple Statements (regular/irregular verbs, positive negative and question statements)" were instructed. In the third week, "Future Statements (be going to and will forms)" were the topic of the week. In the fourth week, vocabulary sessions started, and words related to "Body Parts" were taught. The last week's topic was vocabulary related to "Travel (especially the problems related to travel)".

6th week: After the instruction on related grammatical topics and vocabulary, the last week of the research was reserved for the implication of the post-test.

Data Collection Tools

To find out the impact of innovative instructional tools in ELT classes, especially on grammar and vocabulary, as the main data collection tools, the researchers prepared a pre-test and post-test. Both the pre-test (see Appendix 1) and post-test (see Appendix 2) mostly designed on open-ended test statements. While the pre-test consisted of four parts covering the fill-in-the-blanks, identifying the errors, and matching with picture types of test statements, the post-test included fill-in-the-blanks, matching and multiple-choice test statements. To ensure the validity of the test items in both tests, the opinions of two language instructors who have been working at the university were asked, and the recommended changes were made.

Furthermore, a textbook called "Network 1" by Oxford University Press was used during the instruction part. Also, it is important to note that for the experimental group, the iTools of the related textbook was the main source, while the control group had the hard copy of the book during the courses. Additionally, the courses lasted for two hours each week; therefore, the experimental and control group had taken eight hours of instruction about the target grammatical structures and vocabulary.

As for the innovative instructional tools, the experimental group was exposed to "Edmodo" and "Kahoot" in addition to iTools provided by the book publishers. These web tools were utilized by considering different purposes. iTools are computer programmes that are designed in the shape of a book and all the listening texts, answers, extra documents are embedded in the programme. It can be considered a more effective way of language teaching without spending more time to find the audios/videos or match the answers. While "Edmodo" and "Kahoot" helped improve the interaction between the group members as well as between the students and teachers, iTools is mainly used for getting deeper teaching of the issues covered during the course with the help of different technological activities. Also, smart boards and overhead projectors were the other tools used for the purpose of the present study.

RESULTS

The study's main purpose is to identify the effects of innovative instructional tools in teaching grammar and vocabulary in EFL classes at the university. In order to indicate the effects of the aforementioned tools, while one of the groups was taught grammar and vocabulary with the help of innovative tools, for the other intact class, traditional ways of teaching grammar and vocabulary were employed. The effects of the innovative tools were sought to indicate by using a pre-test and post-test, the results of which were analysed with SPSS 16.0 (Statistical Package for the Social Sciences). Both paired samples *t*-test to see the difference between the pre-test and post-test results within the same group and independent samples *t*-test to demonstrate the difference between the two groups were run. Thus, the results were presented in three parts.

Results of Pre-test

Before starting the instruction sessions, a pre-test was applied to see whether it was possible to compare these two groups or not. Therefore, pre-test scores of the experimental and control groups were compared by using independent samples *t*-test, ensuring that the background knowledge of both groups was not significantly different from each other.

Shapiro-Wilk test of normality was conducted to determine whether Pre-test scores data is normally distributed. The results also indicate that we fail to reject the null hypothesis for pre-test scores data (p = 0.094) and conclude that data is normally distributed. The skewness of the Pre-test scores was found to be .29, indicating that the distribution was right-skewed. The kurtosis of the Pre-test scores was found to be -.39, indicating that the distribution was more left-tailed compared to the normal distribution.

Table 2. Independent Samples t-test Results of Pre-test Scores

Tests	n	M	SD	df	t	p
Pre-test for Control	37	26.43	4.99			
Pre-test for Experimental				74	0.299	.77
	39	26	7.31			

Table 2 indicates independent samples t-test results of pre-test comparing the pre-test scores of the control and experimental groups. The results showed that there is not a significant difference between the background knowledge of control (*M*=26.43, *SD*=4.99) and experimental groups (*M*=26, *SD*=7.31), *t*(74)= 0.299 and *p*= .77 supporting the idea that the background knowledge of the groups is not different from each other (*p*> .05). Thus, this result support the idea that these two groups can be compared for such a study.
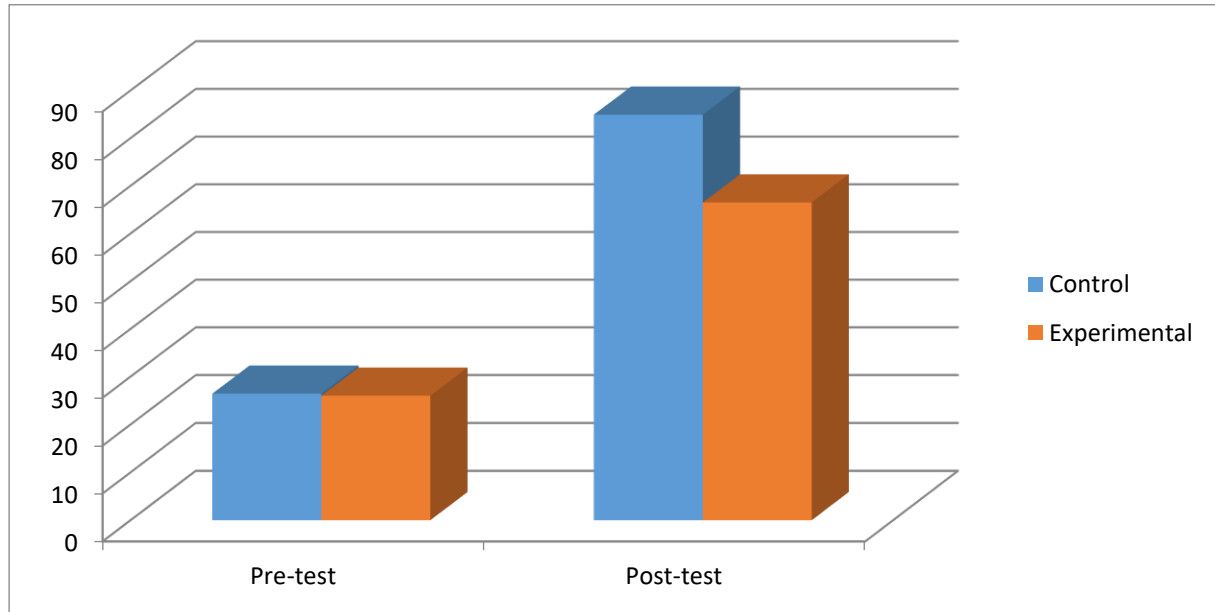
Results of Post-test

After the implementation of four-week instruction, a post-test was implemented to see whether there is a significant difference between the scores of experimental and control groups resulting from the use of innovative instructional tools. The post-test scores of both groups were compared by using the independent samples *t*-test.

Shapiro-Wilk test of normality was conducted to determine whether Post-test scores data is normally distributed. the results also indicate that we fail to reject the null hypothesis for Post-test scores data (p < .01) and conclude that data is normally distributed. The skewness of the Post-test scores was found to be -.71, indicating that the distribution was left-skewed. The kurtosis of the Post-test scores was found to be -.49, indicating that the distribution was more left-tailed compared to the normal distribution.

Table 3. Independent Samples t-test Results of Post-test Scores

Tests	*n*	*M*	*SD*	*df*	*t*	*p*
Post-test for Control	37	84.92	13.96			
Post-test for Experimental				66.98	4.57	.000
	39	66.51	20.67			

As indicated in Table 3, an independent-samples *t*-test was conducted to see the difference between the overall post-test scores of the experimental group and control group. The results indicate that there is a significant difference between the scores of the experimental group (*M* = 66.51, *SD* = 20.67) and control group (*M* = 84.92, *SD* = 13.96), *t*(66.98) = 4.57, *p* < .01, *d* = 1.04 overall scores with a large effect size.

Graph 1. A Comparison of Pre-test and Post-test Results

Graph 1 indicates the difference between the mean scores of the pre-test and post-test within and between the control and experimental groups clearly.

To sum up, when the results are analysed on the basis of pre-test scores, it is indicated that there is not a significant difference between the experimental and control group showing that they can be compared in grammar and vocabulary courses. However, when the results are analysed on the bases of post-test scores, it is seen that the control group got higher scores than the experimental group, which means that the control group outperformed the experimental group after the implementation of the four-week instruction.

Results of Paired Samples t-test

In order to indicate the difference between pre-test and post-test scores within each group, a paired samples *t*-test for both of the groups is used.

Table 4. Paired Samples t-test Results for Control Group

Control	M	t	df	p
Pre-test/ Post-test	-58.49	-28.09	36	.000

As shown in Table 4, scores of the pre-test and post-test of the control group are significantly different from each other, and post-test results are significantly higher than pre-test results (p < .01), showing that learning outcomes are observable in this group.

Table 5. Paired Samples t-test Results for Control Group

Experimental	M	t	df	p
Pre-test/ Post-test	-40.51	-14.25	38	.000

As indicated in Table 4, pre-test and post-test results are significantly different from each other in the experimental group (*p* < .01), supporting the idea that the group has learnt the expected outcomes of the instructions held throughout the research.

To sum up, although according to the post-test results, the control group had higher scores than the experimental group; for both groups, it is possible to talk about meaningful learning showing the instruction sessions have led to learning of the target grammatical structures and vocabulary throughout the study for both experimental and control groups.

DISCUSSION and CONCLUSION

The study's main purpose was to indicate the difference between traditional ways and use of innovative instructional tools in grammar and vocabulary classes. Results clearly demonstrate that the control group, which had received traditional methods to learn grammar and vocabulary, outperformed the experimental group, which had used innovative instructional tools. Thus, the study reveals three main conclusions in relation to the research questions stated at the beginning.

First, there is a significant difference between the post-test scores of experimental and control groups, and it may be concluded that traditional ways work better in grammar and vocabulary classes of beginner-level university students.

Secondly, beyond any doubt, innovative instructional tools positively affect grammar and vocabulary achievement of beginner-level university students. When the pre-test and post-test results of the experimental groups are compared, it is concluded that in the scores, there is a shift to higher grades.

Thirdly, it is important to focus on the fact that although the control group got significantly higher scores than the experimental group, paired samples t-test results reveal that it is possible to talk about meaningful learning in both groups showing that the innovative instructional tools also have led to learning of the target grammatical structures and vocabulary.

Although some studies suggest positive effects of not only innovative instructional tools but the use of technology in ELT classes, such as online education programs and computers, the study reveals totally different results from these studies (Jiang, Sabitha & Shankar, 2021; Krajka, 2021). Especially in modern educational systems, researchers supporting innovative tools in ELT classes claim that the technology in these classes allows for ideal conditions of real-world communication (Peterson, 1997). Also, in technological classes, the freedom of communication has led to a shift of authority, resulting in different classroom management skills supporting learner autonomy (Spitzer, 1989; cited in Peterson, 1997). Another claim of the advocates of technology in ELT classes is that technology empowers collaboration among learners when learners seek to use authentic language in a classroom setting (Bump, 1990). According to Dinçer and Polat (2022), learners who had technological tools training significantly outperformed the other group in terms of their proficiency with English grammar. The pupils' involvement, engagement, and performance were also discovered to have been significantly improved thanks to innovative tools (Aydın, 2014).

However, in addition to all these positive effects, the present study has shown a different path for disadvantages, just like in the research by Peterson (1997), who had listed some potential difficulties related to the use of technological tools in ELT classes:

-slowness in decision-making

-need for a skilled moderator to facilitate learning

-reduced feedback

-loss of pedagogical leadership (Peterson, 1997, p.35)

The present study also suggests similar conclusions to Ehsani and Knoth (1998), who state that there are a number of reasons for the limitations of technological tools, which are lack of theoretical structure to design technological classes, absence of empirical evidence about the benefits of technology and the limitations of the technology itself. Additionally, in the same direction as this study, Samuel and Zitun (2007) emphasize the teacher training in implementing the technological tools in their own classes, which is regarded as a drawback of technology. Therefore, although we cannot talk about a study conducted with smart boards and iTools, just like in the case of this study, when all these positive and negative sides of the technological tools are considered, the results of the present study may be related to some of these negative effects of technological tools (Ko, 2019). Furthermore, Soruç and Tekin (2016) have come up with the idea that the reason for being more successful with the groups which use

technological tools might be based on explanations based on such expressions as "freedom," "comfortable," "relaxing," "technological," "feeling responsible," by the students.

As seen in the present study in relation to the previous studies, it can be concluded that traditional grammar and vocabulary teaching to beginner-level university students have more positive effects on academic success than innovative instructional tools like smart boards, iTools and overhead projectors. However, both positive and negative perspectives may be discussed.

Lastly, for further research, it would be better to have observation sessions for both groups to clearly understand the reasons behind these results and the main drawbacks of the innovative technological tools.

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