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Research Article

The Effects of Using Google Docs on Writing Skills of Turkish EFL Learners***

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ABSTRACT

The present study aimed to investigate the effect of teaching writing skills via Google Docs in a blended learning environment on the error correction skills of Turkish EFL learners. In total, there were 50 students from the 10th grade at a public high school in Turkey. The data were collected through a pretest and a posttest in the experimental and control group. According to the statistical results, it was found that there was a significant difference between the posttest scores of the experimental and control group regarding content, organization, vocabulary, grammatical concepts, capitalization, spelling, and punctuation, but not in terms of mechanics. In light of the results, using Google Docs in a blended learning environment seems promising to enhance the writing skills of language learners by providing immediate feedback and error correction facilities.

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Statement of Publication Ethics

The official permission to conduct this study was obtained from the Provincial Directorate of National Education (Date: 08.09.2021, Number: E-99530429-605.01-31221386) as well as Pamukkale University Social Sciences and Humanities Research and Publication Ethics Committee (Date: 05.11.2021, Number: E-93803232-622.02-126127). Also, the participation in this study was purely on voluntary basis, and consent of the students and parents was obtained via the consent form.

Authors' Contribution Rate

Both authors were equally involved in the literature review, data collection, data analysis, and reporting stages.

Conflict of Interest

The authors declare that they have no conflict of interest.

Reference

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Introduction

Learning how to write in a foreign language may be the most challenging skill to acquire for some EFL students (Alsubaie & Ashuraidah, 2017; Rahmatunisa, 2014). Students may make mistakes in their writing since they have a limited vocabulary, difficulty in forming sentence structure, and making corrections on word spelling, capitalization, punctuation, and grammatical errors, or developing creative ways to express their ideas (Al-Khasawneh & Maher, 2010; Ambrose & Palpanathan, 2017; Zhu, 2001). They can also encounter difficulties in writing due to a lack of adequate linguistic knowledge, teachers' negative feedback, low self-confidence, and high expectations (Rezaei & Jafari, 2014). In this sense, teachers should provide supportive and positive feedback, which requires well-designed practices (Harmer, 2007). Time constraints often limit teachers' ability to offer comprehensive feedback and detailed explanations on student drafts. This suggests that teachers alone may not suffice to adequately enhance students' mechanical skills, organization, and content mastery (Bilal et al., 2013). Additionally, students must practice writing without hesitation, and if they focus on spelling and grammar mistakes, they might not be able to concentrate on creating a well-written piece (Alsubaie & Ashuraidah, 2017). Thus, to increase student motivation and interest in improving their writing skills, using online methods is recommended (Bilal et al., 2013).

Ghanizadeh, Razavi, and Jahedizadeh (2015) contend that technology will support the development of numerous foreign language skills, including listening, writing, reading, speaking, grammar, and vocabulary. They also suggest that technology will help to create a fun environment for language learning because it is viewed as an authentic tool for enhancing input quality and offering timely and immediate feedback. To illustrate, according to Alsubaie and Ashuraidah (2017), integrating online learning tools into the classroom is necessary because today's students are referred to as "digital natives" even though there are other ways to improve students' writing abilities. In this vein, online resources such as computer-assisted language learning (CALL) could meet various needs and expectations of teachers and students in foreign language classes to maximize interaction, active participation, and immediate feedback during limited course hours (Terzioğlu, 2017). For instance, Web 2.0 tool Google Docs might offer students the chance of immediate correction on spelling, punctuation, capitalization, appropriate vocabulary, and grammar in their English writing skills (Aravindan, 2016). In this regard, Google Docs seems to be an appropriate online writing tool since it allows students the flexibility to edit their writing products synchronously, get immediate online feedback, and benefit from auto error correction (Seyed Rezaei et al., 2016). As a result, it may contribute to the development of students' writing skills.

Although there are several research studies on using Google Docs for improving organization, content, spelling, punctuation, grammar, and sentence structure, they mostly focus on investigating the effect of peer tutoring and motivation on developing collaborative writing skills of learners via Google Docs (Abrams, 2019; Alharbi, 2020; Alsubaie & Ashuraidah, 2017; Lin & Yang, 2013; Suwantarathip & Wichadee, 2014). The current paper also concentrates on Google Docs but displays differences with previous

research in terms of research design, research questions, and data collection tools (Ambrose & Palpanathan, 2017; Arani, 2018; Aşıksoy, 2018; Cunningham, 2000; Khodabandeh & Soleimani, 2018). It should be noted that peer tutoring was not emphasized in this study; instead, each student worked independently and received individual feedback via Google Docs. Additionally, this study examined how traditional and online feedback affected students' writing and error correction skills. Since this study employs both single and multiple feedback types for writing classes, it differs from earlier studies in this regard. Besides, the participant profile is different as the participants were selected from a public vocational high school. In sum, this study sought to examine the impact of teaching writing skills via Google Docs in a blended learning environment on the error correction skills of Turkish EFL learners. Therefore, it is assumed that the current study, which allows students to work independently without peer tutoring or group collaboration by using the Web 2.0 tool Google Docs, is one of the rare studies investigating second language (L2) writing both on the macro and micro level.

Literature Review

According to Badran (2017), it is not enough to integrate technology within teaching and learning because there must be a focus on pedagogy and relevance for teaching staff to engage fully with the new technology in schools. Thus, educators need to support and encourage learners to enhance digital skills, provide opportunities, improve quality, and apply technology effectively. Sarıçoban (2013) also indicated the importance of electronic media's revolution in language teaching methodology. Computers are now used as effective tools in terms of assessment, teaching grammar, vocabulary, syntax, reading skills, comprehension, writing activities, and even in developing interactive communication skills. Likewise, Khodabandeh and Soleimani (2018) claim that computer-based tasks create a positive and better effect in grammar learning than written tasks, and learners are better motivated by computer-based tasks than traditional tasks in grammar learning.

Specifically, the concept of Web 2.0 tools was first brainstormed by O'Reilly (2007), and defined as a fuller platform and software above the level of a single device, providing richer user experiences. Web 2.0 tools include such tools as wikis, blogs, video-sharing websites, social networks, podcasts, and many more (Ağır, 2014). In their study, Balbay and Erkan (2018) defined Web 2.0 tools as quite effective, motivational, and encouraging. Also, the authors stated that English Language Teaching (ELT) instructors appreciated using already-developed tools instead of creating a new one. Besides, Aşıksoy (2018) emphasizes that Web 2.0 tools not only develop learners' English language skills but also make learners autonomous and independent individuals in their own learning, indicating the effective and entertaining aspects of these tools.

Within the scope of Web 2.0 tools, Google Docs is an online word-processing document that allows for customization and editing within the document itself (Aravindan, 2016). It is not much different from other word processors besides being popular with some teachers in different contexts. There are some reasons for its popularity in education.

For example, Google Docs can create opportunities for teachers to monitor their students and see how they have corrected their drafts. It also provides one-on-one, automatic, and instant feedback. Besides, it shows the correct spelling by underlining the misspelled words, checks the grammar constantly, and makes the necessary arrangements automatically (Thompson, 2008). Moreover, Google Docs' auto corrections make markups where punctuation marks are forgotten and automatically adjust capitalization at the beginning of sentences (Sharp, 2009).

In light of the above-mentioned opportunities, various research studies have been conducted on Google Docs in different contexts. To start with, Suwantarathip and Wichadee (2014) investigated the effect of Google Docs on students' writing skills by focusing on collaborative writing. This quasi-experimental study aimed to compare the writing abilities of students who collaborated on writing assignments by using Google Docs in a face-to-face classroom. The sample of the study consisted of 5.625 private university students in Thailand. The study took one semester which lasted for 14 weeks, and one of the groups was selected for the face-to-face group, while the other one was chosen for the Google Docs group. The students in both groups worked collaboratively during the writing assignments. The qualitative and quantitative data were collected by the pre-posttest, a questionnaire, and an interview, and the intervention took seven weeks. The results revealed that the Google Docs group received higher scores than the face-to-face group after the interventions.

Secondly, Alsubaie and Ashuraidah (2017) examined the spelling, grammar, and other writing problems of the participants from the College of Arabic Language in Saudi Arabia. Different instruments such as writing portfolios, questionnaires, written tasks, a rubric, and interviews were used in this study. As a result of the integration of Google Docs in English classes, the students' writing skills showed progress in that the posttest scores were higher than the pretest scores. Thirdly, a qualitative study conducted by Abrams (2019) investigated the link between the patterns of collaboration and linguistic features of texts written during a computer-supported collaborative writing task using Google Docs. It was administered to 28 first-year learners of German at a U.S. university. The results indicated that the learners who had lower proficiency levels, and difficulties in resolving language problems were easily able to produce accurate texts and develop their accuracy, and textual cohesion in terms of content and form. Additionally, the findings revealed that the effect of collaboration was not related to the development of linguistic features such as grammatical or lexical accuracy, syntactic complexity, or lexical diversity.

Likewise, another qualitative case study conducted at a large Saudi university by Alharbi (2020) aimed to investigate the potential of Google Docs in facilitating and supporting pedagogical practices in a writing course. The participants were selected from 10 EFL learners working in pairs on article report writing over one academic semester. The data were collected through the instructor's observation and comments, learners' comments, text revisions through Google Docs, and the interviews. The findings of the study revealed that the participants mostly made text revisions (344, 68%) in the use of academic language, specifically grammar and word choice including spelling, mechanics, citing, and referencing in their writings. In addition, text revisions in the content,

organization, and coherence were still high (32%). Finally, Khodabandeh and Soleimani (2018) investigated the effect of CALL-based writing tasks on EFL learners' grammar learning. There were 60 participants at the intermediate level from a high school in Iran. The students were divided into an experimental and a control group. According to the posttest scores, the participants in the experimental group had higher scores than the control group in learning grammar rules. These results also stressed that computer-based tasks had a positive effect on grammar learning than traditional written tasks.

The studies investigating the effect of other Web 2.0 tools on writing skills appear to focus on peer tutoring as well. To illustrate, Alsmari (2019) conducted an experimental study in paragraph writing courses by providing a blended learning environment in Saudi Arabia. The Web 2.0 tool was selected as Google Docs via Edmodo, and it was found to create major developments in the student's writing skills over time. It was also found that Google Docs via Edmodo helped the students' progress in writing skills, especially in areas such as paragraph organization, content, spelling, punctuation, grammar, and sentence structure.

Apart from the aforementioned studies, several studies focused on the writing problems of Turkish EFL learners (Kırmızı, 2018; Mantarlı, 2019). To illustrate, Mantarlı (2019) investigated the mistakes made by Turkish EFL students in the 11th and 12th foreign language classes of an Anatolian high school in English text writing. The author stated that the students often made mistakes in grammar, morphology, meaning, vocabulary, and syntax. Among the five error types, the grammatical errors (861) were mostly committed. Also, Kırmızı (2018) demonstrated that lexical and linguistic errors were the most common errors among Turkish EFL students. Specifically, the lexical mistakes included omission, confusion of two words, word invention, and wrong lexical choice.

Research Aim and Research Questions

In light of the relevant literature, it can be claimed that some of the earlier studies (Abrams, 2019; Alharbi, 2020; Alsubaie & Ashuraidah, 2017; Khodabandeh & Soleimani, 2018; Suwantarathip & Wichadee, 2014) employed Google Docs as a research tool, and collected data through examining the development of paragraph organization, content, spelling, punctuation, grammar, and sentence structure. However, the aim was to investigate the effect of peer tutoring, collaboration, and motivation on developing collaborative writing skills of the learners via Google Docs. Although these studies show similarities with this study, research designs, research questions, participant profiles, and data collection tools differ. Only Alsmari (2019) focused on the development of writing skills by examining paragraph organization, content, spelling, punctuation, grammar, and sentence structure. However, in the study of Alsmari (2019), the research tool was selected as Edmodo. All in all, considering the writing problems of Turkish EFL learners, the difficulties faced by EFL teachers in teaching writing skills and error correction skills as well as the call for future studies, this study aimed to investigate the effect of teaching writing skills via Google Docs in a blended learning environment on error correction skills of Turkish EFL learners, and offer educational insights about error correction techniques

with the integration of technology in a blended language learning environment. To this end, this study aims to answer the following research questions:

1- What is the effect of teaching writing skills via Google Docs on error correction skills of Turkish EFL learners regarding content, organization, vocabulary, grammatical concepts, capitalization, spelling, and punctuation in paragraph writing?
2- Is there a statistically significant difference between the experimental group and the control group in terms of error correction skills regarding only mechanics in paragraph writing?

It should be noted that the first research question is addressed to both writing and error correction skills development (content, organization, grammatical concepts, capitalization, spelling, and punctuation) while the second research question is only concerned with error correction skills for the mechanics category (grammatical concepts, capitalization, spelling, and punctuation) included in the paragraph writing evaluation rubric.

Methodology

Research Design and Procedures

In this research, there was an experimental and a control group, and these groups were previously formed by the school administration. Thus, convenience sampling was administered to choose the participants. The study was designed as a quasi-experimental study as the participants in the control and experimental group were chosen via convenience sampling due to practical reasons in the educational setting (Cohen et al., 2007; Fraenkel et al., 2018; Kerlinger, 1970) to reveal any cause and effect relationship via introducing an intervention and seeing how that intervention relates to the outcome of the study (McMillan & Schumacher, 2010). In the quasi-experimental study design, clustered units such as classrooms or counseling groups are selected as the participants since no randomization in selecting the groups is needed, and testing the groups may interfere with the effect of the given treatment (Ekmekçi, 1999). Hence, in the current study, since the classes were intact, and already organized for an instructional purpose, there was no random assignment of subjects. The relevant interventions were implemented, and the groups were compared by using both a pretest and a posttest.

The study was conducted throughout the Fall semester of the 2021-2022 academic year. Data collection took up to 13 weeks due to student and teacher coronavirus quarantines, and weather-related issues in the region. Paragraph writing pre and posttests were applied to both experimental and control groups before and after the interventions. Before the experimental group interventions, the students were informed about how to use Google Docs. Paragraph writing topics in the pretest and posttest were chosen from the Guide for the 9th-12th Grades English Curriculum published by the Turkish Ministry of National Education (MoNE), considering grade level and unit topics regarding the

Common European Framework of Reference for Languages (CEFR) can/do statements for proficiency levels. The pre/posttests were adapted from the Unit 3 'Plan' writing activity in the MoNE 10th grade textbook. The pre and posttests were also determined by considering the CEFR can/do statements in the MoNE curriculum. Since the English lesson hours in Vocational and Technical Anatolian High Schools are limited to only two lesson hours (40+40 minutes) per week in 10th grades, the interventions included a 40-minute lesson for each group. The interventions were made in the form of six different writing tasks. The teacher of the course followed the language skills and learning outcomes in Guide for the 9th -12th Grades English Curriculum published by Turkish MoNE. The teacher carried out the lesson plans for each group, and after all the students completed the tasks, the teacher moved on to the next lesson plan. Each week's lesson plan included Google Docs paragraph writing activities based on learning outcomes of writing skills and unit topics according to the English curriculum. The experimental group students were exposed to Google Docs and automatic error correction in their writing tasks with a blended learning environment, whereas the control group students were exposed to only traditional paper-based error correction methods during the classes.

Publication Ethics

As for ethical considerations, the official permission to conduct this study was obtained from the Provincial Directorate of National Education ((Date: 05.11.2021, Number: E.126127). Also, participation in this study was purely voluntary, and consent of the students and parents was obtained via the consent form.

Setting and Participants

This study was conducted at a Vocational and Technical Anatolian High School in Turkey, and the participants were 50 Turkish EFL students, namely 10th graders. While 11th graders mainly take vocational courses, 12th graders focus on national exams. For this reason, the researcher decided to work with 10th-grade students for the study. Thus, the participants were chosen via convenience sampling which includes the selection of a time and place for a study, and selecting individuals from a pool of potential participants who are easy to reach based on their motivation to participate in the study (Mackey & Gass, 2005). Since all the students in high school were male students, the participants of the research were male students, aged between 14-15. The students were divided into two groups: branch A as the experimental group, and branch B as the control group. The participants took English lessons for two hours a week during the Fall semester. Their language proficiency level was defined as A2 for 10th Grade according to the CEFR, and the Guide for the 9th-12th Grades English Curriculum published by Turkish MoNE.

Data Collection and Analysis

The data were collected during the English classes throughout the Fall semester of the 2021-2022 academic year. First, the opinions of two experts, namely two academic staff at an ELT Department at a state university in Turkey, were gathered for the appropriateness of the activities. Then, a paragraph writing pretest and posttest were

created as data collection tools. The same task used in the pretest was applied as a paragraph writing posttest at the end of the intervention to both experimental and control groups. The topic of pretest-posttest paragraph writing was adapted from the Unit 3 'Plan' writing activity in MoNE, considering grade level and unit topics regarding CEFR can/do statements for proficiency levels. The writing task was an opinion paragraph about a vacation plan by choosing one of the favorite seasons. The teacher carried out the lesson plans by following the language skills and learning outcomes in Guide for the 9th-12th Grades English Curriculum published by Turkish MoNE for six weeks for each group.

Table 1. Timeline of the Study

Groups	The Date and Duration of Pretest	The Date of Interventions	The Date and Duration of Posttest
Experimental Group	21st September 2021, 40 Minutes	29.09.2021-Task 1 06.10.2021-Task 2 13.10.2021-Task 3 27.10.2021-Task 4 29.12.2021-Task 5 05.01.2022-Task 6	12nd January 2022, 40 Minutes
Control Group	22nd September 2021, 40 Minutes		13th January 2022, 40 Minutes

As it is seen in Table 1, the implementation of the study included six-week interventions with different paragraph writing tasks. The duration of pre and posttests was 40 minutes which is exactly one English lesson hour. The students were informed about how to use Google Docs before interventions in the experimental group. The writing tasks taken from the textbooks were more suitable for productive and creative writing. In addition, the topics of writing varied according to the themes in the textbooks in that the content of each unit was different, and the writing activities were prepared according to these topics. A model text was used in all types of tasks, and creating one draft in the tasks was considered enough due to the limited English class hours. The experimental group students were exposed to Google Docs and automatic error correction in their writing tasks with a blended learning environment, whereas the control group students were exposed to only traditional paper-based error correction methods in the writing activities during the classes.

To analyze the pretest and posttest results, the paragraph writing evaluation rubric (See Appendix 1) adapted with reference to Hughes (2003) was used in the paragraph analysis. Also, the list of error correction codes adapted by Doğan (2019) based on the studies of Ferdouse (2013) and Lee (2004) was used, and written permission of the author was obtained. In the current study, a second coder, namely an English teacher at a state school in Turkey, was also involved in the scoring of the pre/posttest paragraphs of the students. Then, necessary steps were taken to ensure the inter-rater reliability and agreement between the coders (Miles & Huberman, 1994).

Table 2. Methodological Overview

Research questions	Data Collection Tool	Data Analysis
1. What is the effect of teaching writing skills via Google Docs on error correction skills of Turkish EFL learners regarding content, organization, vocabulary, grammatical concepts, capitalization, spelling, and punctuation in paragraph writing?	Pretest, posttest	Mann Whitney U test, Independent Samples T-test
2. Is there a statistically significant difference between the experimental group and the control group in terms of error correction skills regarding only mechanics in paragraph writing?	Pretest, posttest	Mann Whitney U test

As is seen in Table 2, the quantitative data were analyzed via SPSS Statistics 2014. For the pretest and posttest, firstly, the normal distribution of the data was checked. Two well-known tests of normality, namely the Kolmogorov-Smirnov Test and the Shapiro-Wilk Test, which are more appropriate for small sample sizes (< 50 samples), were applied. In cases where the sample size is less than 50, Kolmogorov-Smirnova is checked for normality (n=30, n=20). As a result of the test of normality, the data in the pretest did not show a normal distribution in the data set of the first research question, so a nonparametric Mann-Whitney U test analysis was performed in the analysis of the pretest scores. However, the posttest data showed a normal distribution, and Independent Samples T-test was used in the analysis of the posttest scores. In the data set of the second research question, it was seen that both the pre and posttest scores did not distribute normally. As a result, a nonparametric Mann-Whitney U test was used, and the p-value was taken as .05.

Results

First of all, the results concerning the first research question will be revealed in that the pretest-posttest results for the effect of teaching writing skills via Google Docs on error correction skills of the participating Turkish EFL learners will be shared in terms of content, organization, vocabulary, grammatical concepts, capitalization, spelling, and punctuation. For this purpose, the analysis of the pretest and posttests scores of the experimental and control groups are given.

The quantitative data were analyzed via SPSS to answer the first research question. In the evaluation rubric of the pre-posttests results, writing skills were scored in terms of content, organization, and vocabulary categories while error correction skills were scored in the mechanics category of the rubric, including grammatical concepts, capitalization, spelling, and punctuation. The total score of all categories was 100 points. While analyzing the pre and posttests of both groups for the first research question, the students' scores out of 100 points were considered. Therefore, the first question presents the results on the improvement of both writing skills and error correction skills of the students. In this study, there were 30 students in the experimental group and 20 students in the control group.

Table 3. Test of Normality for Question 1

	Group Name	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	*df*	Sig.	Statistic	*df*	Sig.
Pretest Score	Experimental Group	.150	30	.084	.881	30	.003
	Control Group	.311	20	.000	.702	20	.000
Posttest Score	Experimental Group	.131	30	.200*	.949	30	.163
	Control Group	.181	20	.085	.902	20	.045

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

In Table 3, it is seen that the Kolmogorov Smirnov statistics for pretest scores take values .150 and .311 while statistics for posttest scores take values .131 and .181. It was assumed that pretest scores did not display normal distribution. Thus, a non-parametric Mann-Whitney U test was used in the analysis of the pretest scores. It was found that there was no statistically significant difference between the groups, which implies that the participating student profile was similar to each other in both groups. However, the p-values for posttest scores are .200 and .085, indicating that the posttest results are normally distributed. Thus, the Independent Samples T-test was used in the analysis of the posttest results. Another reason for applying the Independent Samples T-test for the posttest is that the Skewness is 1.094 and close to 1. Thus, the normal distribution can be accepted. Table 4 contains a summary of the pretest scores for both groups.

Table 4. Mann-Whitney U Test Ranks for Pretest Scores in Question 1

	Group Name	*n*	Mean Rank	Sum of Ranks
Pretest Score	Experimental Group	30	28.22	846.50
	Control Group	20	21.43	428.50
	Total	50		

For the experimental group, the total sum of ranks is 846.50, and the mean rank is 28.22, while for the control group, the total sum of ranks is 428.50, and the mean rank is 21.43. Thus, the experimental group has a larger mean rank than the control group and tends to take larger values. Further test statistics for pretest scores are presented in Table 5.

Table 5. Test Statistics for Pretest Scores in Question 1

	Pretest Score
Mann-Whitney U	218.500
Wilcoxon W	428.500
Z	-1.621
Asymp. Sig. (2-tailed)	.105

According to Table 5, the Mann-Whitney U value is 218.500 for the pretest score and the p-value is .105 (reported as $p > 0.05$). Therefore, there is not a significant statistical difference between the experimental and control groups for the pretest scores, which implies that both groups tend to have similar scores in the pretest at the beginning.

In the analysis of posttest scores, the Independent Sample Test was used. It was aimed to reveal whether there was a significant difference in the posttest scores between the experimental and control groups after they were exposed to different types of writing lessons. Group statistics in Table 6 reveal information about the group comparisons. For the posttest scores, the mean score of the experimental group is 39.30, while it is 26.15 for the control group. The means of pre and posttest scores of both groups also reveal that there was an increase in means of the scores in both groups. However, the increase in the posttest scores of the experimental group was found to be higher than that of the control group.

Table 6. Group Statistics for Pretest-Posttest Scores in Question 1

	Group Name	*N*	Mean	Std. Deviation	Std. Error Mean
Pretest Score	Experimental Group	30	16.70	16.099	2.939
	Control Group	20	13.90	21.460	4.799
Posttest Score	Experimental Group	30	39.30	24.406	4.456
	Control Group	20	26.15	16.011	3.580

Table 7 displays Independent Samples T-test results for posttest scores. According to the results, there was a statistically significant difference between the posttest scores of the experimental and control group.

Table 7. Independent Samples T-test for Posttest Scores in Question 1

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	*t*	*df*	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Posttest Score	Equal variances assumed	6.066	.017	2.121	48	.039	13.150	6.200	.683	25.617
	Equal variances not assumed			2.301	47.997	.026	13.150	5.716	1.657	24.643

To summarize the results of the first research question, the Mann-Whitney U test was used in the analysis of the pretest scores while the Independent Sample T-test was used in the analysis of the posttest scores. As a result of the Independent Sample T-Test, a

significant difference was found between the experimental and control groups in the posttest scores regarding content, organization, vocabulary, grammatical concepts, capitalization, spelling, and punctuation after the interventions. In other words, in this study, traditional teacher feedback in the control group versus traditional teacher feedback + automatic corrections via Google Docs in the experimental group were studied, and it was found that the students in the experimental group got higher scores in the posttest for the first research question.

As for the second research question, the analysis aimed to reveal whether there was a significant difference between the experimental group and the control group's error correction skills in paragraph writing after the given treatment regarding mechanics. Unlike the first research question, the scores of the students in terms of content, organization, and vocabulary in the evaluation rubric were not analyzed. This time, the data analysis set presents the results obtained from the error correction scores regarding only the mechanics section of the evaluation rubric. Thus, the pre-posttest scores of the students were evaluated according to the mechanics section in the rubric. The total score for the mechanics category was 30 points. While analyzing the pre-posttests of both groups for the second research question, the students' scores out of 30 points were considered, and the p-value was taken as .05.

Table 8. Test of Normality for Question 2

	Group Name	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	*df*	Sig.	Statistic	*df*	Sig.
Pretest Score	Experimental Group	.311	30	.000	.666	30	.000
	Control Group	.315	20	.000	.571	20	.000
Posttest Score	Experimental Group	.198	30	.004	.854	30	
	Control Group	.197	20	.041	.782	20	.000

a. Lilliefors Significance Correction

Table 8 presents the results of normality tests which indicate that pre and posttest results are not normally distributed. Thus, Mann Whitney U test was used for the analysis of the pre-posttest results. Table 9 presents a summary of the pre-posttest scores for both groups.

Table 9. Mann-Whitney U Test Ranks in Comparison of Pre-Posttest Scores in Question 2

	Group Name	n	Mean Rank	Sum of Ranks
Pretest Score	Experimental Group	30	27.68	830.50
	Control Group	20	22.23	444.50
	Total	50		
Posttest Score	Experimental Group	30	28.60	858.00
	Control Group	20	20.85	417.00
	Total	50		

The experimental group has larger mean ranks (27.68, 28.60) than the control group (22.23, 20.85) in both pretest and posttest scores. Thus, the experimental group tends to take larger values. Also, since there was no normal distribution, the Mann-Whitney U test was employed.

Table 10. Test Statistics for Pre-Posttest Scores in Question 2

	Pretest Score	Posttest Score
Mann-Whitney U	234.500	207.000
Wilcoxon W	444.500	417.000
Z	-1.357	-1.852
Asymp. Sig. (2-tailed)	.175	.064

As shown in Table 10, even though the p-value .064 for the posttest score is accepted as marginally significant, the value is still higher than 0.05. In consideration of the results, a statistically significant difference was not found in both groups' pretest and posttest scores. In other words, the results indicate that both groups tend to have the similar scores in the pretest and posttest for the second research question. Namely, the difference between the experimental group and control group is not statistically significant in terms of their error correction skills regarding only mechanics in paragraph writing after the given treatment.

Table 11. Group Statistics for Pretest-Posttest Scores in Question 2

	Group Name	*n*	Mean	Std. Deviation	Std. Error Mean
Pretest Score	Experimental Group	30	2.07	2.888	.527
	Control Group	20	2.35	4.614	1.032
Posttest Score	Experimental Group	30	7.93	7.799	1.424
	Control Group	20	3.40	3.393	.759

In Table 11, it is seen that the means of pretest and posttest scores of both groups increased. However, the increase in the pretest and posttest scores of the experimental group was found to be higher than that of the control group. However, no significant difference was found between the experimental and control groups regarding only mechanics after the given treatment.

Discussion, Conclusion, and Implications

The challenge of teaching writing and error-correction skills in a time-constrained environment was the starting point of this study. According to the statistical findings, after receiving the given treatment using Google Docs, the participating Turkish EFL learners' writing skills (content, organization, vocabulary, and error correction skills regarding grammar, spelling, capitalization, and punctuation) significantly differed between the experimental and control groups. It was found that the increase in the experimental group's

posttest score was higher than that of the control group. Therefore, it was concluded that using both traditional teacher feedback and Google Docs' auto-correction in writing lessons was preferable rather than using only one type of feedback. Similarly, Khodabandeh and Soleimani (2018) found that computer-based tasks were more effective than traditional written tasks to improve grammar learning. However, in this study, after the given treatment, there was no statistically significant difference between the experimental group and control group in terms of error correction skills including mechanics such as grammar, spelling, capitalization, and punctuation.

The result of the first question in the current study bears some similarities with those of previous studies (Abrams, 2019; Alharbi, 2020; Alsmari, 2019; Alsubaie & Ashuraidah, 2017; Khodabandeh & Soleimani, 2018; Suwantarathip & Wichadee, 2014). To exemplify, in the study of Abrams (2019) who focused on Google Docs use qualitatively, the students' writing skills demonstrated progress in their pre and posttest scores. Also, Suwantarathip and Wichadee (2014) found that the participants using Google Docs received higher scores than the face-to-face group after the intervention. Likewise, Alsubaie and Ashuraidah (2017) revealed that the students' writing skills showed improvement in that the scores of the posttests were higher than those of the pretests because of the integration of Google Docs in English classes. Additionally, Khodabandeh and Soleimani (2018) indicated that the participants in the experimental group had higher scores than the control group in learning grammar rules. In a similar vein, Alsmari (2019) found that Google Docs via Edmodo helped the students enhance their writing skills, especially in terms of paragraph organization, content, spelling, punctuation, grammar, and sentence structure. Finally, in another qualitative case study conducted at a large Saudi university by Alharbi (2020), it was revealed that the participants made more text revisions in the use of academic language, specifically grammar and word choice. In parallel with these studies, the current paper concluded that there was an increase in the mean scores of both the experimental and control groups. However, there was a significant difference in the posttest scores of the participants in the experimental group for the first research question, that is, they got higher scores in terms of content, organization, vocabulary, grammatical concepts, capitalization, spelling, and punctuation. As for the second research question, the results indicated that there was an increase in the posttest scores regarding the development of error correction skills even though no significant difference was found between the experimental and control groups in terms of mechanics.

Considering the research results, this study has some educational implications, particularly for EFL teachers. First, it seems necessary for teachers to create a learning atmosphere in which learners learn English effectively and enjoyably. Thus, Google Docs could be employed as authentic material to create a fun writing environment. In this sense, it is recommended that English teachers should benefit from technology to attract students' attention to writing, and enhance their writing and error-correction skills instead of focusing on only traditional approaches on teaching writing skills. In a blended learning environment, Google Docs seems to be a highly recommended word processing program that can enhance writing and error-correction skills in EFL writing classes. However, English teachers should be aware of the fact that while Google Docs cannot be used to

teach some writing strategies, it can be a very useful tool for practicing grammar rules, punctuation, capitalization, and spelling. Also, Google Docs' automatic corrections process student texts to provide mechanical feedback. In this way, teachers can save time by providing less mechanical feedback, and students may have the opportunity to receive more feedback on both mechanics and content with the help of both automatic corrections and teacher feedback in constrained lesson time. However, it should be noted that some students may still prefer a balance between the use of online and traditional classes. To serve this need, teachers can balance the use of Google Docs' automatic corrections and traditional methods in their writing lessons to serve their students' needs and keep them motivated. Another issue that should be given attention is that error correction codes should be clearly explained to students, and they should be provided both written and oral feedback since they may prefer explicit feedback on their errors to detect which parts need revision.

Overall, blended learning may be a more effective teaching strategy and should be explored to improve language teaching and learning. It can be concluded that the integration of Google Docs as an educational tool into EFL writing helps students correct their errors and get immediate online feedback. Thus, English teachers are advised to incorporate various types of feedback into their writing lessons to enhance the writing skills of their students. In such a blended learning setting, teachers can serve as mentors, and students can enhance their learning effectively by using online resources in writing classes.

Limitations and Suggestions for Further Research

This study has some limitations. To begin with, this study was conducted with 50 10^{th} graders during one semester in Turkey and similar studies in various contexts may come up with different results. Also, there were only male students in this study due to the demographic features of the vocational school. Thus, future studies could investigate male and female students with different learner characteristics. Additionally, since this study was conducted during an unusual pandemic period, the interventions were limited to six weeks. In this sense, it is suggested that this process can be kept longer and different data collection tools can be used to triangulate data. Besides, it is highly recommended that different online writing platforms can be used for comparative purposes. Finally, due to its features, Google Docs could be employed for improving collaborative writing in future studies.

References

Abrams, Z. I. (2019). Collaborative writing and text quality in google docs. *Language Learning & Technology*, *23*(2), 22-42.

Ağır, A. (2014). What are the usage conditions of Web 2.0 tools faculty of education students? *Turkish Online Journal of Distance Education*, *15*(3), 171-196.

Alharbi, M. A. (2020). Exploring the potential of Google Doc in facilitating innovative teaching and learning practices in an EFL writing course. *Innovation in Language Learning and Teaching, 14*(3), 227-242.

Al-Khasawneh, F. M. S., & Maher, S. (2010). Writing for academic purposes: Problems faced by Arab postgraduate students of the college of business. UUM. *ESP World, 9*(2), 1-23.

Alsmari, N. A. (2019). Fostering EFL students' paragraph writing using Edmodo. *English Language Teaching, 12*(10), 44-54.

Alsubaie, J., & Ashuraidah, A. (2017). Exploring writing individually and collaboratively using google docs in EFL contexts. *English Language Teaching, 10*(10), 10-30.

Ambrose, R. M., & Palpanathan, S. (2017). Investigating the effectiveness of computer-assisted language learning (CALL) using Google Documents in enhancing writing - A study on senior 1 students in a Chinese independent high school. *IAFOR Journal of Language Learning, 3*(2), 85-112.

Arani, J. A. (2018). Advancing academic writing in a mobile Skype-based blended model. *International Journal of Interactive Mobile Technologies (iJIM), 12*(3), 86-103.

Aravindan, S. (2016). *How to use google docs in the classroom.* Retrieved from https://study.com/academy/lesson/how-to-use-google-docs-in-the-classroom.html.

Aşıksoy, G. (2018). ELT students' attitudes and awareness towards the use of Web 2.0 technologies for language learning. *Journal of Language and Linguistic Studies, 14*(2), 240-251.

Badran, M. (2017). *Digital tools and language learning.* Unpublished master thesis. Malmö Högskola Faculty of Education and Society, Malmö.

Balbay, S., & Erkan, G. (2018). Perceptions of instructors on using Web 2.0 tools in academic English courses. *International Journal of Curriculum and Instruction, 10*(2), 45-60.

Bilal, H. A., Tariq, A. R., Din, N., Latif, H., & Anjum, M. N. (2013). Investigating the problems faced by the teachers in developing English writing skills. *Asian Journal of Social Sciences and Humanities, 2*(3), 238-244.

Cunningham, K. (2000). Integrating CALL into the writing curriculum. *The Internet TESL Journal, 6*(5), 9-22.

Doğan, N. (2019). *Collaborative social learning: Using Edmodo as a social platform to teach EFL writing for preparatory school students*. Unpublished master thesis. Pamukkale University the Institute of Educational Sciences, Denizli.

Ekmekçi, E. (2018). Exploring Turkish EFL students' writing anxiety. *The Reading Matrix: An International Online Journal, 18*(1), 158-175.

Ferdouse, F. (2013). Learning from mistakes: Using correction code to improve student's writing skill in English composition class. *Stamford Journal of English, (7)*, 62-86. https://doi.org/10.3329/sje.v7i0.14463.

Ghanizadeh, A., Razavi, A., & Jahedizadeh, S. (2015). Technology-enhanced language learning (TELL): A review of resourses and upshots. *International Letters of Chemistry, Physics and Astronomy, 54*, 73-87.

Harmer, J. (2007). *The practice of English language teaching.* (4th ed., pp. 323-330). England: Pearson Education Limited.

Hughes, A. (2003). *Testing for language teachers,* 83-186. Cambridge University Press.

Khodabandeh, F., & Soleimani, H. (2018). The effect of CALL-based tasks on EFL learners' grammar learning. *Teaching English with Technology*, *18*(3), 54-68.

Kırmızı, G. D. (2018). Lexical errors and linguistic calques as lexical transfer in EFL writing: A case study. *Başkent University Journal of Education, 5*(2), 99-106.

Lee, I. (2004). Error correction in L2 secondary writing classroom: The case of Hong Kong. *Journal of Second Language Writing*, *13*(4), 285–312.

Mantarlı, B. (2019). *The error analysis of English writings of 11th and 12th grade students in foreign language classes.* Unpublished master2s thesis, Bartın University, Bartın, Turkey.

Mackey, A., & Gass, S. (2005). *Second language research: Methodology and design.* New Jersey: Lawrence Erlbaum Associates, Inc.

Miles, M. B., &. Huberman, A. M. (1994). *Qualitative data analysis*. *An expanded sourcebook.* London: Sage.

O'Reilly, T. (2007). What is Web 2.0: Design patterns and business models for the next generation of software. *Communications & Strategies, 65*(1), 17-36.

Rahmatunisa, W. (2014). Problems faced by Indonesian EFL learners in writing argumentative essay. *Journal of English Education, 3*(1), 41-49.

Rezaei, M., & Jafari, M. (2014). Investigating the levels, types, and causes of writing anxiety among Iranian EFL students: A mixed method design. *Procedia-Social and Behavioral Sciences, 98,* 1545-1554.

Sarıçoban, A. (2013). Pre-service ELT teachers' attitudes towards computer use: A Turkish survey. *Eurasian Journal of Educational Research, 53*, 59-78.

Seyed Rezaei, Z. S., Ghonsooly, B., Shahriari, H., & Fatemi, A. H. (2016). A mixed methods analysis of the effect of Google Docs environment on EFL learners' writing performance and causal attributions for success and failure. *Turkish Online Journal of Distance Education*, *17*(3), 90-110.

Sharp, V. (2009). *Computer education for teachers: Integrating technology into classroom teaching* (6th ed). Hoboken, N.J.: John Wiley.

Suwantarathip, O., & Wichadee, S. (2014). The effects of collaborative writing activity using google docs on students' writing abilities. *Turkish Online Journal of Educational Technology-TOJET*, *13*(2), 148-156.

Terzioğlu, Y. (2017). Call teacher education: Language teachers and technology integration. *Turkish Online Journal of Distance Education, 18*(3), 228-231.

Thompson, J. (2008). Don't be afraid to explore Web 2.0. *Education Digest, 74*(4), 19-22.

Zhu, W. (2001). Performing argumentative writing in English: Difficulties, processes, and strategies. *TESL Canada Journal*, 34-50.

Appendix

Paragraph Writing Evaluation Rubric for A1-A2-B1 Levels

CONTENT (50 Marks)

(41-50) VERY GOOD: Ideas expressed fully, covering all content elements. Completely relevant to the assigned task. Interesting and informative.

(31-40) 4. GOOD: Ideas expressed covering some content elements with some minor repetition or digression. Somewhat relevant to the task and somewhat interesting.

(21-30) 3. ADEQUATE: A simple account with some repetition and digression from the task. One or two content elements may have been ignored. Content may have been covered, however, not very interesting, but monotonous.

(10-20) 2. INADEQUATE: Not enough information. Student is jumping from one point to the other. Noticeable digression and irrelevance to the task. Requires considerable effort to follow.

(0-9) 1. POOR: Totally irrelevant to the assigned task or information is too little to assess.

ORGANIZATION (10 Marks)

(9-10) 5. VERY GOOD: Ideas clearly stated, supported by various examples, facts or details. Well-organized and developed with cohesive devices.

(7-8) 4. GOOD: Main ideas stand out but loosely organized or somewhat supported by various examples, facts or details. Still cohesive.

(5-6) 3. ADEQUATE: Only topic sentences and some factual information have been expressed. Limited support. Non-fluent. Lack of cohesion.

(3-4) 2. INADEQUATE: Ideas confused or disconnected. No cohesion at all.

(0-2) 1. POOR: Ideas do not communicate. No organization or not enough to assess.

VOCABULARY (10 Marks)

(9-10) 5. VERY GOOD: Effective word choice and appropriate usage fully relevant to the task. Appropriate vocabulary has been used, however, a few words may replace with the ones from L1.

(7-8) 4. GOOD: Quite precise use of vocabulary but still occasional inappropriate usage without obscuring the meaning. However, some words may replace with the ones from L1.

(5-6) 3. ADEQUATE: Basic usage of vocabulary. Student may not remember some words but replaces with the ones from L1.

(3-4) 2. INADEQUATE: Vocabulary is focused on basic objects, places and most common words. Frequent inappropriate usage of words.

(0-2) 1. POOR: Not enough usage of vocabulary to assess.

MECHANICS (30 Marks)

(16-30) VERY GOOD TO EXCELLENT	Demonstrates mastery of conventions; few errors of spelling, punctuation, correct typing, capitalization and accurate grammar, but meaning not obscured.
(6-15) POOR TO FAIR	Frequent errors of spelling, punctuation, correct typing, capitalization and accurate grammar; meaning confused or obscured.
(0-5) VERY POOR	No mastery of conventions; dominated by errors of spelling, punctuation, correct typing, capitalization and accurate grammar, illegible; or nor enough to evaluate.