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The Effectiveness of Peer Feedback through Google Docs for Improving EFL Students' Classroom Engagement and Writing Achievement

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Abstract

The present study sets to explore whether using peer feedback through Google Docs improves English as a Foreign Language (EFL) students' classroom engagement. It also investigated the extent to which peer feedback through Google Docs improves EFL students' writing achievement. Three groups of EFL students were involved in the study, namely control (N=23), experimental 1(N= 24), and experimental 2 (N=22). The control group received the treatment through the conventional writing course and the teacher read the writing task and provided feedback regarding the content, grammar, vocabulary, or punctuations. In addition to their regular in-class writing instruction, each student in the first experimental group was asked to choose a partner and email their drafts to them and the peers were required to provide feedback. In the second experimental group, the pairs provided the feedback through the Google Docs. One Way ANOVA was run to find any possible differences between the groups. Based on the findings, the second experimental group outperformed the other groups in their classroom engagement and writing achievement. The findings have implications for pedagogy as well as further research.

Keywords: classroom engagement, Google Docs, peer feedback, writing achievement

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1. Introduction

Writing skill has been viewed as a crucial skill in EFL learning. Regarding the importance of this skill, Suleiman (2000) states that "writing is a central element of language, any reading and language arts program must consider the multidimensional nature of writing in instructional practices, assessment procedures, and language development." (p. 155). The capability for writing efficiently is very important in educational and academic settings (Beiki, Gharagozloo, & Raissi, 2020). In EFL contexts, writing has always been considered as an impressive skill, since it inspires rationality and induces learners to form their thoughts (Maghsoudi & Haririan, 2013). There is a consensus on the vital role of writing skill in education and English language development (Steinlen, 2018). Moreover, mastery of writing skill helps learners to become successful in the academic area, self-expression, and communication (Maftoon et al., 2014). Writing skill is an important element of all types of educational settings including EFL.

Online education has been considered as an alternative pathway to provide access to educational services for all people. In this kind of education, the medium of interaction, communication, and collaboration among students and instructors is the Internet and they take part in "unique and irreplaceable learning opportunities" which may only observe in online platform (Burbules & Callister, 2000, p. 277). The prevalence of Covid-19 has hastened the use of online courses. To become able to control the speedy spread of the Covid-19, the governments have forbidden the students' attendance in educational contexts as an influential part of general quarantine and social distancing plans (Viner et al., 2020) and most of the educational settings have to use online platforms to teach learners.

Moreover, in the condition of the pandemic, it is necessary for educators and students across all levels of education to adapt quickly to virtual courses. This has a significant effect on education, particularly in the English Language Teaching (ELT) context (Yulianto & Mujtahin, 2021). This situation, as Murphy (2020) coined the term, was named 'emergency e-learning.' Emergency e-learning is "the temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances" (Hodges et al., 2020, p. 6). To adapt to online learning, it was necessary for educational settings to use different online applications. As such, different technologies, blogs, and podcasts were became popular in EFL context, particularly in writing courses (Pan & Sullivan, 2005).

The rapid growth of online technologies such as Web 2.0 has created new possibilities for learners and teachers to collaborate and co-construct knowledge through interaction. Web 2.0 technologies can support and transform learning (Ebadi & Rahimi, 2018). As for the writing skill, they facilitate new forms of interaction between learners and they provide collaborative editing tools for writers (Ebadi & Rahimi, 2017). Since Web 2.0 technologies support the processes of learning, they provide opportunities for collaboration among learners (Burden, 2012). Google Docs is one of these technologies. It is an online digital application that helps teachers in collaborative writing by presenting effective characteristics that assist learners to develop their writing skills (Widyastanti, 2019). Among the popular technologies, Google Docs has proper characteristics that could make the process of peer feedback for writing courses easier (Brodahl, Hadjerrouit, & Hansen, 2011). The types of feedback that the learners receive have some effect on their success and failure (Amorose & Weiss, 1998). Corrective feedback particularly peer feedback is considered as an effective way to affect students' perspectives toward their success and failure (Amorose & Weiss, 1998).

Peer feedback, according to Storch (2004), helps students become more self-aware, in the sense that they notice the difference between how they and others perceive their writing. This improves self-reflection and self-expression, allowing them to develop their critical and analytical reading and writing skills, fosters a feeling of co-ownership, which incentivizes learners to join in decision-making, and enhances reflective thinking. Accordingly, using peer feedback could be considered as an effective way to help learners in the process of language learning.

Another issue that may have some effect on learners' success is their classroom engagement which is elaborated as "the willingness of the student to participate in daily school exercises, for example, proceeding to class, doing schoolwork, and tuning in to the teacher in class" (Afzali & Izadpanah, 2021, p.4). Low level of classroom engagement imposes negative effects on students' learning (Wang et al., 2014). Moreover, learner engagement is the result of effective classroom instruction (Ayçiçek & Yelken, 2018). Classroom engagement refers to a student's active involvement in classroom learning activities (Skinner et al., 2009). This includes "attention, interest, investment, and effort students expend in the work of learning" (Marks, 2000, p. 155) within the classroom.

Fredricks, Blumenfeld, and Paris (2004) elaborated on the three dimensions of engagement—affective (emotional), cognitive, and behavioral. At the classroom level, affective engagement refers to positive emotions during class, such as interest, enjoyment, and enthusiasm (Skinner et al., 2009). Behavioral engagement refers to observable behavior

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such as time-on task, overt attention, classroom participation, question asking, and choice of challenging tasks (Wang et al., 2014). Cognitive engagement refers to mental effort, such as meaningful processing, strategy use, concentration, and metacognition (Wang et al., 2014).

Student engagement has been generally explored in different fields and populations (Oga-Baldwin, 2019). Moreover, many studies have emphasized the improvement of learners' academic engagement to enhance their educational success and education quality (Christenson et al., 2012; Coates, 2010). Engagement or the "active, goal directed, flexible, constructive, persistent, and focused interactions with the social and physical environments" (Furrer & Skinner, 2003, p. 149) is a desirable result and a significant predictor of a host of other important variables like academic performance and achievement as well as school completion rates (Dogan, 2015; Fredricks, 2015).

2. Literature Review

2.1 Theoretical Framework

The theoretical framework of the present study is grounded on two bases. The first one is the process approach to writing (e.g. Ferris, 1997; Leki, 1991) and the second is Vygotsky's (1978) sociocultural theory. In the process approach to writing, writing is described as a process rather than a product. Writing includes different steps as follows: pre-writing, writing, and editing or revising. Writing is viewed as a process in that learners need to be guided by instructors from the initial point of planning to the last step of editing (Hyland, 2003; Kalan, 2015). The sociocultural theory focuses on the significance of a person's cognitive development via the zone of proximal development (ZPD), Vygotsky, 1978). The ZPD is "the distance between the actual developmental level as determined by the individual's independent problem-solving and the level of potential development as determined through problem-solving in collaboration with more capable peers" (Vygotsky, 1978).

One way of achieving this cognitive development is through mediated interactions between an expert and novice or even between a more capable student and a less capable one. What is significant about the ZPD and related to the goals of the current research is scaffolding. The sociocultural theory has frequently concentrated on aiding or scaffolding mediated interactions in EFL learning in general and writing in particular (Bradley & Thouësny, 2017; Ebadi & Rahimi, 2017; Hedgcock & Ferris, 2013; Saeed & Ghazali, 2017). Accordingly, peer feedback could be considered as a type of scaffolding when the peers provide feedback to each other and as some researchers argue that the function of peer feedback in mediating EFL learners' language acquisition, particularly writing, should be addressed. Feedback should not just come from instructors but also from peers (Bradley & Thouësny, 2017; Ebadi & Rahimi, 2017; Saeed & Ghazali, 2017; Slavkov, 2015).

Additionally, engagement is crucial to learners' academic progress; the more involved pupils are, the more successful they are in their schools (Mebert et al., 2020). Academic success is made possible by student engagement (Greenwood et al., 2002). It makes learning easier and helps predict a student's academic performance and his/her overall development (Reeve, 2012). Classroom engagement is defined as a student's enthusiastic participation in classroom learning activities (Reeve et al., 2004). Classroom engagement is a student's willingness to participate in daily school activities such as going to class, doing homework, and paying attention to the teacher in class. Low classroom engagement negatively affects performance and learning (Wang et al., 2014). According to Ayçiçek and Yelken (2018), student engagement is the result of efficient classroom instruction and school advancement activities, and it is an obviously important notion in that sense. Bond et al. (2020) emphasize the importance of dynamic and collaborative learning, academic tasks, good communication with the teacher, and instructional encounters within the scope of classroom engagement. Engagement among students has been suggested to increase students' interest (Mebert et al., 2020).

2.2 Engagement

One of the notions that has attracted educators' and researchers' attention is learners' engagement since it has a significant effect on academic achievement, learning experience, intellectual capacity, and cognitive growth (Krause, 2005a). Learner engagement has a significant influence on academic achievement (Reeve, 2012). Classroom engagement is defined as a student's participation in classroom learning activities (Reeve et al., 2004). This includes attention, interest, participation, and effort students exert in the work of learning in the classroom (Marks, 2000). According to Fredricks et al. (2004), the three dimensions of engagement are affective (emotional), cognitive, and

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behavioral. Low levels of classroom engagement have a harmful effect on students' learning outcomes and the process of learning (Wang et al., 2014).

Different scholars have assigned various definitions to engagement (Parsons & Taylor, 2011). Coates (2006) argues that different learning theories have different implications on the conceptualization of engagement, ranging from early behaviorist theories to cognitive and social constructivist theories, and as a result, it has changed over time. According to Trowler (2010), the origin of the term engagement may be found in Astin's (1984) work on learner participation. Early opinions were shaped by behaviorist viewpoints that emphasized the importance of visible individual behaviors.

Engagement, according to Astin (1984), is "the amount of physical and psychological energy that the student devotes to the academic experience" (p. 518). As a result, students' engagement in class, activity time, and overall academic learning time are used to measure engagement as a one-dimensional notion (Admiraal et al., 1999). This early behaviorist perspective has been criticized as being inadequate for two reasons. First, since learning is more than a behavioral event, the observed behavior is inappropriate for student engagement (Coates, 2006). Second, a person's conduct may appear to indicate engagement while, in fact, they are profoundly emotionally or intellectually disengaged (Coates, 2006).

2.3 Google Docs

Learning EFL has lately undergone a revolution because of the usage of Web 2.0 technologies, especially when teaching writing. As a Web 2.0 tool, Google Docs has the potential to be utilized by instructors as an interactive platform for the group projects, assignments, and projects of their students. Google Docs makes it easier for educators to monitor their students' progress on written tasks (Niess & Gillow-Wiles, 2015). This Google Documents application expands its functionality by enabling teachers to provide students with critical comments on their work in addition to tracking and guiding their progress and serving as mentors and facilitators (Ebadi & Rahimi, 2017).

Google Docs was created based on an idea by Godwin-Jones (2008). Because both the author and the reviewer may improve or change the published text, Google Docs is exceptionally excellent for peer editing (Niess & Gillow-Wiles, 2015). For students who use Google Docs, the text is automatically stored as changes are made, and revisions are tracked. According to prior studies, students may edit or rewrite their written texts using Google Docs by executing a variety of activities, including adding, deleting, rearranging, and substituting written text pieces at different levels, ranging from words, phrases, and sentences to aspects beyond sentences (Semeraro & Moore, 2016; Woodard & Babcock, 2014).

The promise of the new technology especially Google Docs, as a forum for peer feedback has been underlined in some studies (e.g. Semeraro & Moore, 2016; Woodard & Babcock, 2014). A number of these research studies have examined various forms of peer feedback using Google Docs from different points of view. Woodard and Babcock (2014), for instance, concluded that students' peer feedback patterns are directed, informed, and prompted, and that they place a focus on the writer, content, structure of sentences, language choice, formatting, and other fundamental elements of narrative writing. According to Bradley and Thousny (2017), peer review on Google Docs also concentrates on global aspects of assignments, such as key content, content arrangement, and assignment, as well as regional issues, such as supplementary materials, language, and references.

2.4 Feedback

Feedback is an important element of language learning and teaching which has a significant effect on learning. In most learning theories, feedback is an important idea. Some experts believe that feedback in learning and teaching is advantageous to students (Petchprasert, 2012). Learners might receive feedback in different forms of prizes such as stickers and awards (Deci et al., 1999). Extrinsic motivation, such as feedback and incentives, is the emphasis of several theories, such as behavioral theory (Winne & Butler, 1994). Learners will repeat an action if they obtain a reward or positive feedback for it. Despite the benefits, Feedback, contrary to popular belief, can have a detrimental impact (Petchprasert, 2012). Feedback may not be beneficial to students who do not work hard and perform poorly on an assignment (Chaudron, 1988).

It is possible to differentiate between corrective feedback and feedback (Li, 2010). "Corrective feedback is corrective and is frequently regarded from a pedagogical standpoint, whereas the latter is an umbrella word that refers to any reaction following an erroneous remark, regardless of whether it is meant to correct or not" (Li, 2010, p.12). The question of whether corrective feedback is beneficial for second language learning depends on the type of necessary

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input for learning to take place (Li, 2010). Students are given two categories of information: positive and negative evidence (Gass, 1997). Positive evidence indicates what is permissible in the target language, whereas negative evidence indicates what is not (Gass, 1997). Although certain types of feedback may also contain good evidence, corrective feedback contains negative evidence (Li, 2010).

Corrective feedback, according to Lightbown and Spada (1999), is any message to the learners that their usage of the target language is incorrect. This involves a variety of answers that students get (p. 172). Some ideas look at how corrective feedback affects second language learning. Based on Schmidts (1990, 2001) Noticing Hypothesis, second language learning, unlike first language acquisition, is conscious. Schmidt (1990) states that "subliminal language learning is impossible" and that "noticing is the necessary and sufficient condition for converting input to intake" (p. 129). Another benefit of corrective feedback is the reaction of the learner (Schmidt, 1990). Corrective feedback influence is also examined in Socio-Cultural Theory, which states that it acts as a type of regulation in the zone of proximal development that may be appropriated by learners to adjust their interlanguage systems (Aljaafreh & Lantolf, 1994).

Researchers have focused on oral corrective feedback, which is explained as teachers' or peers' answers to learners' wrong utterances, over the past two decades. The bulk of earlier studies on the usefulness of oral corrective feedback has proven that it is advantageous and necessary for the language development of L2 learners (Lyster et al., 2013; Mackey & Goo, 2007; Nassaji, 2016, 2017). According to studies on the frequency and types of feedback in L2 classrooms, feedback occurs often in a variety of classroom settings (Brown, 2016; Ha, 2017; Wang & Li, 2020).

2.5 Peer Feedback

It is especially beneficial in higher education to supplement instructor input with feedback from other sources like peers (Evans, 2013; Nicol et al., 2014). Since in big classes, the teachers are rarely able to provide constant and systematic feedback to all of the students, the importance of peer feedback becomes more clear (Brinko, 1993). Peer feedback may help learners learn and have a positive influence on academic writing (Huisman et al., 2019). Additionally, learners are motivated to manage their learning, this is especially true for feedback receivers, which support metacognitive processes (Ballantyne et al., 2002).

Because feedback givers are requested to assess the quality of their peers' work, they are coping with the underlying educational objectives, assessment criteria, and various approaches to accomplishing a task/problem, which may result in a better knowledge of the learning contents and expectations (Andrade, 2010; Sadler, 2010). When peer feedback offers precise advice on how to remedy mistakes (Strijbos & Sluijsmans, 2010), and when it is properly understood, it is seen as helpful (Kollar & Fischer, 2010). As a result, offering high-quality feedback to encourage learning is a difficult endeavor, and studies reveal that learners find this process to be unpleasant and burdensome (Hanrahan & Isaacs, 2001; Kaufman & Schunn, 2011). Peer feedback helps students become more self-aware, in the sense that they notice the difference between how they and others perceive their writing (Storch, 2004). This improves self-reflection and self-expression, allowing them to develop critical and analytical reading and writing skills, fosters a feeling of co-ownership, which incentivizes learners to join in decision-making, and enhances reflective thinking.

The review of the related literature indicated that many studies have been carried out on the use of Google Docs in the field of language learning. In this regard, Alharbi (2020) explored the potential of Google Docs in facilitating and supporting educational practices in a writing course. As he reported, Google Docs supports writing instruction, particularly via instructor and peer feedback, peer editing and drafting of writing, and peer responses to feedback. Moreover, based on the analysis of quantitative data, some differences between the instructor and peer feedback were found. In the same line, Seyyedrezaie et al. (2016) probed into the possible influence of writing process in the Google Docs context on Iranian EFL learners' writing skill. Based on the results, Google Docs played a significant role in developing learners' writing skill. Partially similar to this research, Sa'diyah and Nabhan (2021) explored the utilization of Google Docs for collaborative writing, in high school classes as EFL contexts. The findings of this study indicated two key issues that showed the benefits and results of using Google Docs for collaborative writing. The researchers reported that "students' enthusiasm, digital literacy, social skills, and writing skills improved when they used Google Docs for collaborative writing" (p.156).

Since Google Docs can be a suitable technology for writing courses including peer editing, peer redrafting, peer feedback, and tracking the changes to texts (Fathi et al., 2021) gaining more empirical support as to the effectiveness of Google Docs can shed light on the efficacy of this application for EFL writing instruction. Accordingly, given that

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Google Docs is becoming popular in writing classes and few Iranian EFL teachers are familiar with this technology, this study aimed at demonstrating the effectiveness of peer feedback through Google Docs for improving EFL students' classroom engagement. Although the use of peer feedback has been previously studied in different aspects of language learning and teaching, few researchers have considered the effects of effectiveness of peer feedback through Google Docs for improving EFL students' classroom engagement. Accordingly, the following research questions were formulated:

1. Does peer feedback through Google Docs improve EFL students' classroom engagement?

2. Does peer feedback through Google Docs improve EFL students' writing achievement?

3. Methodology

3.1 Participants

A total of 69 freshman EFL students (49.2 % males & 50.7 % females; mean age =24 year) at a 4-year academic university in Kermanshah, a city in west of Iran, were selected through convenience sampling to participate in the present study. The participants were chosen from three intact classes. As such, they were randomly assigned to the first experimental (n=24), second experimental (n=22) and the control group (n=23). They were taking a two-credit compulsory writing course in their university. The anonymity and confidentiality of the collected data were guaranteed for the students and the participants' informed consent was obtained. Oxford Placement Test (OPT) developed by Allan (2004) was administered to three groups to ensure the homogeneity of the three groups prior to the treatment.

3.2 Instruments and Materials

Oxford Placement Test. Allan's (2004) Oxford Placement Test was employed to examine the participants' English language proficiency level. Oxford Placement Test, including 200 items, examines EFL students' grammar, vocabulary, reading, and listening skills. The researchers used Cronbach's alpha to check the reliability of the instrument. The results indicated the reliability index of 0.84 for the whole test and reliability indices of 0.82 to 0.85 for the subsections.

The Course book. Paragraph development developed by Arnaudet Mary and Ellen Barrett was used to develop the EFL students' academic writing performance in both groups. This book is usually offered for writing courses of undergraduate TEFL students.

The Classroom Engagement Scale. Students' engagement scale was developed by Reeve and Tseng (2011). The scale includes four subscales, namely behavioral engagement items, agentic engagement items, cognitive engagement items, and emotional engagement items. There are 22 items in the questionnaire.

Timed-writing Tasks. We used two 40-minute timed-writing tasks before and after the treatment as the pre-test and post-test, respectively to measure the writing performance of the participants. As the writing task, the participants of the three groups were asked to write two paragraphs on a general topic.

3.3 Procedure

As already stated, there were three groups in the study. Since the course was mainly on paragraph writing, the instruction mainly centered around teaching different types of paragraphs for example enumerative, cause and effect, and comparison and contrast paragraphs. The instructor also provided the participants with detailed explanations of the components of writing including content, organization, language use, vocabulary, and mechanics. Over the 16-week experiment period, all groups were required to write at least 12 paragraphs.

The control group received the treatment through the conventional writing course. This means that they received the inside-class instruction. They were asked to write individually a paragraph weekly and send it to the teacher's email. The teacher was required to read the writing task and provide feedback regarding the content, grammar, vocabulary, or punctuations and send the comments to the students. Students were asked to read the comments and revise the papers. In addition to their regular in-class writing instruction, the first experimental group was required to choose a partner and email their drafts to them. Each student in the group was asked to read his/her partner's writing task and provide feedback regarding the content, grammar, vocabulary, or punctuations and send the comments to the students.

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The second experimental group also received the regular in-class writing instruction. In addition, the instructor provided effective instructions by modeling as how to comments on Google Docs. They were also taught how to do peer-editing. As the first step of the treatment, the students were asked to compose their first assignments. Then the students submitted their first drafts to Google Docs. As the next step, each student was asked to choose a partner to review each other's drafts. The process of submitting and reviewing the drafts was user friendly. After logging into Google Docs, each student could submit his/her text for review and access their already-submitted texts as well as accompanying reviews. The comments were based on the aspects of content, grammar, vocabulary, or punctuations. Finally, the students were asked to revise their paragraphs based on the comments and produce the second draft. It should be mentioned that two university instructors were asked to use the British Council IELTS Writing Task descriptors to evaluate writing tasks. The descriptors included task achievement, coherence and cohesion, lexical resource, grammatical range and accuracy (British Council, 2018).

3.4 Data analysis

One-Way ANOVA was used to analyze the participants' scores in the pretest and posttest of the classroom engagement scale. One-Way ANOVA was also employed to compare the performance of the EFL learners in the pre- and post-test of writing tasks. In the current study, before going through the process of data analysis, the normality of obtained data was assessed using One-Sample Kolmogorov-Smirnov Test. The results indicated that since for all of the variables significance was more than 0.05, the test distribution was normal.

4. Results

At the beginning of the study, all the participants (3 groups) participated in the pre-test of classroom engagement. Tables 1 and 2 reveal the results of One-Way ANOVA used to analyze the participants' scores in the pretest of classroom engagement.

Table 1. Group descriptive statistics for the pre-test scores of classroom engagement of the three groups

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
control	23	41.30	10.81	2.25	36.62	45.97	23.00	59.00
experimental1	24	38.62	8.48	1.73	35.04	42.20	23.00	54.00
experimental2	22	38.77	10.08	2.15	34.30	43.24	23.00	62.00
Total	69	39.56	9.75	1.17	37.22	41.90	23.00	62.00

As shown in Table 1, the means for the control group, experimental 1, and experimental 2 groups were 41.30, 38.62, and 38.77, respectively. According to the obtained results, the mean score of the control group was a little higher than the mean score of other groups. To examine whether these differences in the mean scores of the three groups were statistically significant before presenting the particular treatments to the experimental groups, ANOVA was used.

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Table 2. One-way ANOVA for the pre-test scores of classroom engagement of the three groups

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	104.59	2	52.29	.542	.584
Within Groups	6364.35	66	96.43		
Total	6468.95	68			

According to the above Table, there was not any significant difference between the mean scores of the three groups in pre-test of classroom engagement ($p>0.05$). This meant that, the groups were almost at the same level regarding classroom engagement at the onset of the study. To answer the first research question to find the possible effect of using peer feedback through Google Docs on EFL students' classroom engagement, One-Way ANOVA was run. Its aim was to analyze the variance of posttest of classroom engagement. Since analysis of variance is sensitive to deviation from normality, the uniformity of the variances for the three groups was assessed for the results of the posttest, too. Levene's homogeneity of variance test was run for the results of the post-test.

Table 3. Test of homogeneity of variances for the post test scores of classroom engagement

Levene Statistic	df1	df2	Sig.
.171	2	66	.843

The test of homogeneity of variance revealed that the variances of the three groups were identical for the post-test of classroom engagement. It was shown that the Levene's test was not significant for the posttest scores; *F posttest* (2, 66) = .171, *p*= .843– at the .05 alpha level. After confirming the homogeneity of variances, ANOVA was run to the results of the classroom engagement posttest. The descriptive statistics for the classroom engagement posttest is presented in the following Table:

Table 4. Group statistics for the posttest scores of classroom engagement

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
control	23	42.17	9.91	2.06	37.88	46.46	25.00	58.00
experimental1	24	45.41	10.27	2.09	41.07	49.75	26.00	61.00
experimental2	22	54.86	11.72	2.49	49.66	60.06	34.00	85.00
Total	69	47.34	11.77	1.41	44.51	50.17	25.00	85.00

The results of the post-test indicated that the mean of the *control group,* X=42.17, the mean *of the experimental group 1,* X=45.41, and the mean of the *experimental group 2,* X =54.86, differed significantly. The significance value of the *F* test in the ANOVA Table was less than (.05). Accordingly, the hypotheses that average assessment scores of the classroom engagement post-test were equal across the three groups were rejected (F 2, 66= 8.594, Sig. = .000≤.05).

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Table 5. ANOVA for the results of the post-test scores of classroom engagement

Posttest scores	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1947.92	2	973.96	8.594	.000
Within Groups	7479.72	66	113.32		
Total	9427.65	68			

Generally, *F* statistics indicated that there were statistically significant differences among the three groups' means. The participants of the experimental group 2 outperformed their counterparts including experimental group 1 and the control group. After it was revealed that the groups differed in some way, post- hoc test reported more about the structure of the differences. In other words, doing multiple comparisons Post- hoc test (Scheffe) was employed for comparing the means of the three groups.

Table 6. Multiple comparisons for the results of the posttest of classroom engagement

(I) groups	(J) groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
control	experimental1	-3.24275	3.106	.583	-11.0222	4.5367
	experimental2	-12.68972*	3.174	.001	-20.6403	-4.7391
experimental1	control	3.24275	3.106	.583	-4.5367	11.0222
	experimental2	-9.44697*	3.142	.014	-17.3162	-1.5778
experimental2	control	12.68972*	3.174	.001	4.7391	20.6403
	experimental1	9.44697*	3.142	.014	1.5778	17.3162

*. The mean difference is significant at the 0.05 level.

As depicted in Table 6, on the post-test, the second experimental group outperformed the control and the first experimental group. This reveals that peer feedback through Google Docs improves EFL students' classroom engagement. To answer the second research question of the study and to compare the three groups regarding their performance in writing test and also to ensure their homogeneity of their level of writing at the beginning of the study, writing pretest was used. The descriptive statistics of writing pretest are reported in the following Table.

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Table 7. Group statistics for the pretest scores of writing

Writing pretest					95% Confidence Interval for Mean			
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
control	23	4.00	.953	.198	3.587	4.412	2.00	6.00
experimental1	24	4.16	1.09	.222	3.706	4.627	2.00	6.00
experimental2	22	4.13	1.12	.239	3.637	4.635	2.00	6.00
Total	69	4.10	1.04	.125	3.850	4.352	2.00	6.00

As Table 8 illustrates, the means for the control group, experimental 1, and experimental 2 groups were 4.00, 4.16, and 4.13, respectively. Using the ANOVA, the researchers examined whether there is any significant difference in the mean scores of the three groups before presenting the particular treatments to the experimental groups.

Table 8. One-Way ANOVA for the pre-test scores of writing of the three groups

Writing pretest					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.366	2	.183	.163	.850
Within Groups	73.924	66	1.120		
Total	74.290	68			

According to the above Table, there was not any significant difference between the mean scores of the three groups in the pre-test of writing ($p>0.05$). This meant that the groups were almost at the same level regarding writing performance at the onset of the study. To answer the second research question to find the possible effect of using peer feedback through Google Docs on EFL students' writing, One-Way ANOVA was run. Its aim was to analyze the variance of the posttest of writing. The descriptive statistics for the writing posttest is presented in the following Table:

[DOR: 20.1001.1.25384015.2023.8.1.7.3]

Table 9. Group statistics for the posttest scores of writing

Writing posttest								
					95% Confidence Interval for Mean			
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
control	23	3.95	.976	.203	3.53	4.37	2.00	6.00
experimental1	24	5.08	1.017	.207	4.65	5.51	4.00	7.00
experimental2	22	6.36	1.135	.242	5.86	6.86	4.00	8.00
Total	69	5.11	1.419	.170	4.77	5.45	2.00	8.00

According to Table 9, the means of the posttest of writing for the control group, experimental 1, and experimental 2 groups were 3.95, 5.08, and 6.36, respectively. Using the ANOVA, the researchers examined whether there is any significant difference in the mean scores of the three groups after presenting the particular treatments to the experimental groups.

Table 10. One-Way ANOVA for the post test scores of writing of the three groups

Writing post test					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	65.19	2	32.59	29.92	.000
Within Groups	71.88	66	1.08		
Total	137.07	68			

In general, *F* statistics indicated that there were statistically significant differences among the three groups' means. The participants of the experimental group 2 outperformed their counterparts including experimental group 1 and the control group. After it was revealed that the groups differed in some way, post- hoc test indicated more information about the structure of the differences. In other words, doing multiple comparisons Post- hoc test (Scheffe) was employed for comparing the means of the three groups.

[DOR: 20.1001.1.25384015.2023.8.1.7.3]

Table 11. Multiple comparisons for the results of the posttest of writing

(I) groups	(J) groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
control	experimental1	-1.12681*	.30452	.002	-1.8894	-.3642
	experimental2	-2.40711*	.31122	.000	-3.1865	-1.6277
experimental1	control	1.12681*	.30452	.002	.3642	1.8894
	experimental2	-1.28030*	.30803	.000	-2.0517	-.5089
experimental2	control	2.40711*	.31122	.000	1.6277	3.1865
	experimental1	1.28030*	.30803	.000	.5089	2.0517

*. The mean difference is significant at the 0.05 level.

As illustrated in Table 11, the results of Post hoc Scheffe test indicates that second experimental group showed the greatest difference in comparison to two other groups and this shows that peer feedback through Google Docs improves EFL students' writing achievement.

5. Discussion and Conclusion

The first research question inquired if using peer feedback through Google Docs improves EFL students' classroom engagement. Based on the findings, the second experimental group outperformed the control and the first experimental group. This reveals that peer feedback through Google Docs improves EFL students' classroom engagement. We did not find any study that directly deals with the effect of collaborative writing on students' engagement; although, some researchers have investigated EFL learners' engagement in EFL settings. In a partially similar study, Tsao (2021) investigated the effects of EFL learners' L2 writing self-efficacy on their engagement with written corrective feedback. Based on the finding, self-efficacy for writing predicts EFL learner engagement with teacher and peer written corrective feedback.

In the same vein, Ayçiçek and Yelken (2018) studied the effect of flipped classroom model on students' classroom engagement in teaching English. As reported, a significant difference was found between the performance of the experimental group in the pretest and the post test. Sanaeifar and Mirshojaee (2020) used peer-assessment practice in the classroom as a solution for EFL students' lack of engagement in the classroom. As the findings showed, exposing students to the peer-assessment significantly improved students' English course scores and promoted their classroom engagement. Shakki (2022) investigated the effects of teacher-student rapport and teacher support on Iranian EFL students' engagement. The correlational analysis revealed a strong association between the variables. The SEM analysis also indicated that teacher support and student rapport have a significant impact on Iranian students' engagement in EFL settings.

The second research question explored if using peer feedback through Google Docs improves EFL students' writing achievement. The findings revealed that the second experimental group showed the greatest difference in comparison to two other groups and this indicates that peer feedback through Google Docs improves EFL students' writing achievement. The study's findings are partially compatible with that of Fathi et al. (2021) who investigated the effect of collaborative writing on EFL learners' writing performance and writing self-regulation. As they reported, collaborative writing both via using Google Docs and in the face-to-face classroom significantly improved the writing performance and writing self-regulation of the participants. The findings corroborate that of Ebadi and Rahimi (2017) who concluded that peer-editing through Google Docs improved EFL learners' academic writing achievement both in the short and long term. In a study, Bolourchi and Soleimani (2021) explored the effect of peer feedback on EFL

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learners' writing performance and writing anxiety. Based on the results, experimental group (students' peer feedback group) outperformed the control group (teacher feedback) due to employing peer feedback.

In the same line, Pham (2021) studied the effects of collaborative writing on students' writing fluency. Based on the findings, collaborative writing had a significant impact on students' writing fluency in both individually written papers and collaboratively written papers. Stell (2018) using a mixed-methods approach probed the effects of collaborative writing on complexity, accuracy, and fluency in the writing of Taiwanese EFL learners. The quantitative results revealed that pairs who worked collaboratively achieved better accuracy and fluency. It was also shown that collaborative writing helped writers to resolve issues related to meaning in the text.

Based on the findings, it appears that Google Docs, as a user-friendly application, enabled the participants to revise the writing of their classmates effectively at their own pace and in their convenient time. It also is possible that the students have learned from the different comments and feedback they received from their peers and transferred what they had learned from their classmates to their own drafts. In addition, perhaps, Google Docs provided the opportunity to EFL learners to reflect more deeply on their drafts more deeply without time and space restrictions. It is also likely that as Marandi and Seyyedrezaie (2017) found, Google Drive-integrated writing instruction reduced writing anxiety of the participants and gave them to chance to improve their writing assignments by receiving feedbacks from peers and teacher. Also, possibly after their anxiety reduced they could freely engage in constructing the text so this contributed to their classroom engagement.

As to the implications of the present study, it can be stated that Google Docs can be integrated into EFL curriculum. This can promote the effectiveness of writing courses by enabling EFL learners with online peer-editing capability. It can also raise students' motivation and since student engagement is closely linked to motivation (Saeed & Zyngier, 2012) their classroom motivation is enhanced. However, it should be kept in mind that an effective integration of technology into any course depends on technological skills of both teachers and learners. Such skills are of great importance for the effective integration of technology for educational purposes (Fathi & Ebadi, 2020).

The present study like any other study has some constraints and limitations. One of the limitations is the small number of participants of the study. The results would be more generalizable if more participants were recruited. The other limitation was that the participants were selected only from one university of the west of Iran which does not represent all universities throughout the country. Future studies could replicate this study employing participants from both state and private universities because students' characteristics may not be the same in these two contexts.

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