

THE EFFECTS OF ONLINE LEARNER-DRIVEN FEEDBACK ON IELTS WRITING SKILLS VIA GOOGLE DOCS

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Abstract

This study reports the results of a mixed-methods approach to investigate the impact of peer online learner-driven feedback (LDF) using Google Docs and peer-editing in a face-to-face classroom on EFL learners' writing skill. As this study was conducted using a quasi-experimental design, two intact groups, each including twenty EFL learners, were selected as the participants of the study. They were attending an IELTS preparation course at a language school in Iran. To assess the learners' IELTS academic writing skills, we used academic writing task 1 and task 2 and conducted semi-structured interviews to explore the learners' perceptions towards the impact of online learner-driven peer-editing on writing tasks. An independent-samples t-test, along with two one-way MANCOVA, was used to analyse the quantitative data. The results showed that LDF-based peer-editing significantly enhanced the learners' academic writing skills, compared to the conventional in-class feedback. The thematic analysis used to analyse the qualitative data shed light on the learners' positive perceptions towards the effect of online learner-driven peer-editing on academic writing skills.

Keywords: learner-driven feedback (LDF); peer-editing; academic writing; Google Docs; IELTS

1. Introduction

A number of studies have been conducted to investigate different types of feedback in language learning. Nowadays, traditional types of feedback have been replaced by more innovative techniques in the field, such as learner-driven feedback (Fielder, 2016) and, by extension, peer-feedback (Kieser & Golden, 2009). The inclination towards the two techniques is of high importance (Goldstein, 2004) since a large proportion of students are positively oriented towards peer feedback, specifically delivered in pairs rather than individually, which is reportedly due to constructive collaboration, leading to learning from each other, thereby improving their grammatical accuracy (Alshuraidah & Storch, 2018). Also, Cañabate, Nogué, Serra & Colomer (2019) stated that this improvement is due to interpersonal emotional bonds with peers that are encouraged in the two-fold feedback procedure. Firstly, it is argued that peer feedback could be beneficial for both the feedback provider and the receiver (Huisman, Saab, van den Broek & van Driel, 2018). Secondly,

learner-driven feedback is argued to build up a feeling of security and respect, thereby raising its efficiency (Dam, 2011). Likewise, Twu (2009) argued that positive social interaction requires deep rich social contexts to be presented before any effective learning occurs. Effective educational online tools are today turning to the state-of-the-art devices with which learners have reported ease and an increased amount of comfort in interaction and communication with their peers (Saeed, Ghazali, Sahuri & Abdulrab, 2018). Online educational interaction is facilitative and takes place as both SCMC (synchronous computer-mediated communication; using spoken informal communication) and ACMC (asynchronous computer-mediated communication; utilizing the patterns of written discourse) (Taguchi & Sykes, 2013). They not only encourage and facilitate socialization but also lead to the development of social skills, specifically foreign language mastery. Moreover, Noroozi and Mulder (2016) highlighted the positive influence of online peer feedback environments on students' motivation and satisfaction.

Learner-driven feedback (LDF) has recently been considered as an important area of research in feedback research. According to Maas (2017), LDF is a type of feedback that is driven and controlled by learners while performed by teachers. Maas believes that learners could ask their teachers to provide them with the intended type of feedback through recordings, emails, annotations, and handwritten feedback, which results in enhanced learning commitment and evaluation. Learners' input and needs play a crucial role in learner-centered courses in which instructors help learners by increasing a sense of autonomous learning, thus raising their self-esteem (Mohr, 2010).

Online peer feedback could be provided using blogs and wikis that facilitate sharing texts, editing, modifying and deleting content (Bloch, 2008; Lamy & Hampel, 2007). Yang (2010) stated that Google Docs, a more innovative Web 2.0 application, included the functions of both blogs and wikis. However, it is a Web 2.0 application that encourages users to perform various actions such as creating, sharing, and editing documents, spreadsheets, presentations, and forms online (Perron & Sellers, 2011).

Previous research in feedback showed that the utilization of learners in peer-centered feedback is marked as more constructive in comparison with the traditional techniques (Fielder, 2016; Ballantyne, Hughes & Mylonas, 2002). Noroozi, & Mulder (2016) reported peer feedback as an effective approach contributing to the level of progress and the rate of development among learners; however, to the best of our knowledge, no study has ever been carried out to investigate the effects of online LDF-based peer-feedback in an EFL context. Accordingly, this study is intended to delve into the comparison between face-to-face peer-

editing and online learner-driven peer editing, and how effective learner-driven online peer-editing using Google Docs is in developing IELTS learners' academic writing skills.

2. Literature review

2.1. Online feedback

Feedback is categorized under two subtypes, with the first one being summative, delving into the final product of a language class and the latter being formative, exploring and addressing students' problems in the process of learning rather than the final result at the end of the semester (Hyland, 2003). According to Hyland and Hyland (2006), summative feedback has given way to its formative counterpart. Although teachers are nowadays aware of the importance of the learning process, Lee (2012, p. 60) claims that "teacher feedback serves primarily summative purposes, and its formative potential is underutilized." It is argued that formative feedback by teachers may be short of quality as it is a time-consuming process, so their provided feedback might fail to address students' needs and desires. To Liu and Carless (2006, p. 279) feedback is "a communication process through which learners engage in reflective criticism and enter into dialogues related to performance and standards of other students' work."

Google Docs has been used as one of the possible e-feedback technologies in a number of studies (Alharbi, 2020; Ishtaiwa & Aburezeq, 2015; Bradley & Thouësn, 2017; Ebadi & Rahimi, 2017). These studies suggest that Google Docs can serve as a valuable peer writing and editing forum since learners can use the editing functions to compose, upload and edit their writing. In addition, teachers and learners will exchange written feedback using the commenting feature and use the response function to respond to feedback (Alharbi, 2020).

Saeed and Al Qunayeer (2020) identified multiple factors clustered under three dimensions in teacher e-feedback in Google Docs based on the written feedback of the instructor on 10 L2 academic writing undergraduates for a course in language and linguistics at a Malaysian public university. The results showed that interactive feedback often led to the discussion of problems in their writing by students, involvement in comprehensive text revisions, and feedback negotiation in supporting interactive feedback practices in writing courses. Alharbi (2020) explored the potential of Google Docs in a writing course at a large Saudi university in promoting and supporting pedagogical practices. The findings show that Google Docs supports writing development. Hyland (2003) stated that it is likely that students do not fully understand the given feedback or act on it. Pintrich and Schunck (2002) point out

that learner-driven feedback could propel adult students to better learn and respond more effectively to the situational demands of learners.

2.2. Learner Driven Feedback (LDF)

Written texts have experienced a shift from the learners responding to the teacher's comments and suggestions in subsequent drafts, thereby, feedback starting to transform to dialogues between teacher and student (Hyland & Hyland, 2006). Tudor (1996) defines learner-driven feedback as the one that is different from traditional approaches to teaching. It requires students to have an active role in their study program concerning goal-setting and selection of methodology. It includes the change of focus from the tutor to the learner, also referred to as the post-communicative era (Benson & Voller, 1997). As the name suggests, LDF is defined as a type of feedback given by teachers, but controlled by students, which enables the latter to drive the feedback by asking for specific types of feedback such as recordings, emails, annotations and handwritten. Also, students could decide which aspect of their work should be given feedback on (Fielder, 2016). Maas (2017) explored students' receptivity to learner-driven feedback (LDF) approach and addressed their preferences. A high degree of student receptivity and many other compelling explanations for piloting LDF on EAP writing courses are highlighted in the results from the comprehensive survey data, several of which may also explain testing the method in other ELT classrooms. Maas believes that LDF has a positive impact on learners' autonomy and helps them take responsibility for their learning and progression. Feedback received by learners digitally (e.g., tracked changes, annotations, emails, or audio recordings) is believed to enhance motivation and increases the amount of data exchanged. Besides, it has shown advantages in both higher education (McCabe, Doerflinger & Fox, 2011) and foreign language instruction (Cloete, 2014). Carless, Salter, Yang & Lam (2011) stated that as interactive feedback increases engagement amongst students, it is highly effective. Maas (2017) studied the effectiveness and usability of LDF for students of English for academic purposes (EAP). They were given a choice of delivery modes as well as help with asking useful questions. In the first exploration, students reported positive outlooks towards LDF for giving feedback on language accuracy and text structure in draft essays; specifically, they showed satisfaction to the digital mode of the feedback. Moreover, they experienced positive changes in essay results. Maas (2017) reported that email and audio recording feedback were regarded as the most effective in reducing errors in academic writing skills and issues with text structure. Also, using annotations was seen as the

most suitable type of LDF, resulting in a better understanding of language accuracy and treating local errors by learners.

According to Alshuraidah and Storch (2019), collaboration in feedback results in the individuals engaged in pooling their resources and negotiating the sort of feedback delivered. They also claim that when LDF is utilized; learners are propelled to more language engagement, thus having access to more opportunities in terms of language learning. Besides, they reported that when collaborating, students exchanged more feedback than the traditional in-class format. The learners in their study stated that individually driven feedback was of lower quality compared to LDF involving collaborations among peers.

Peer-feedback, which is also referred to as peer editing or peer evaluation, is a process involving students reading their fellow students' works and providing them with feedback. Mangelsdorf (1992) opines that peer feedback does not merely mean reading other fellow students' works; the focus is not only on the surface structure errors but also explores the meaning and construction-based structures within the text. Feedback either takes place between two students who are seen as 'dyads' or groups, including more than two people (Mendonça & Johnson, 1994, p. 747). The benefits of peer-feedback include engaging students in an interactive activity and following a process-oriented technique. Another main advantage of peer feedback, as Falchikov (2001) points out, is its learning dimension, which is reinforced when students actively engage in articulating growing understandings of the subject matter. Ballantyne, Hughes and Mylonas (2002) state that students enjoy peer feedback as it is considered as motivating for them to reflect on their work.

Peer feedback can lead to better results in learning if combined with technology (Chen, 2016). In a blended learning environment, Kim and Lee (2018) explored the impact of peer response on the lexis and grammatical structure of students in L2 writing. Eight university students who were enrolled in an English writing course and participated in online and offline peer response sessions were subject to a case study. The results showed that direct correction was the most frequently occurring form of input, while more indirect correction occurred in the blended context in online peer response sessions. The effect of online peer-editing using Google Docs and peer-editing in a face-to-face classroom on the academic writing skills of EFL learners was explored by Ebadi and Rahimi (2017). The findings showed that peer-editing significantly improved the academic writing skills of the learners in both the Google Docs context as well as in the face-to-face classroom. The thematic analysis used for the analysis of qualitative data illustrated the positive opinions of the students about the effect on academic skills of online editing. According to Ebadi and Rahimi (2017), peer

feedback could be even more beneficial when it takes place using online platforms such as Google Docs. Moreover, Razak & Saeed (2014) and Saeed & Ghazali (2016) stated that EFL students benefitted from diverse strategies, namely organizing, adding, substituting and deleting, which led to the overall quality of writing.

3. Methodology

3.1. The aim of the study

This study aims at answering the following questions:

- 1- Are there any statistically significant difference between face-to-face peer-editing and learner-driven online peer-editing using Google Docs in developing IELTS learners' academic writing skills?
- 2- What are EFL learners' attitudes towards learner-driven online peer editing using Google Docs?

To achieve the goal, the current study employed a sequential explanatory mixed-methods design (Creswell, Plano Clark, Gutmann & Hanson, 2003) to address the research questions.

3.2. Participants and the context

Forty participants, between 18 and 30 years of age, were selected through non-randomized sampling based on availability from IELTS Core language school in Iran, who enrolled in an intensive IELTS preparation writing course (seasonally writing course). All of the students were ranked B2 in terms of their language proficiency level. The class was taught by an instructor, holding a Master's degree in applied linguistics. Students were taught the materials twice per week, with all the sessions being 24, and who were then divided into two groups in which there were ten females and ten males in each group, all of whom being Iranians whose native language was Persian. They used cell phones outside the class to revise the drafts and keep in touch with each other.

Regarding ethical considerations, pseudonyms were given to the participants to protect their identity as L1, L2, L3, They were assured that the results, especially the interview data, would remain strictly confidential and would be used just for the stated research purpose.

A pre-test adopted from the IELTS Cambridge authentic Cambridge test books was administered before the course started to determine the writing proficiency level of the learners according to the Common European Framework of Reference (CEFR) criteria, which

is a guideline used to describe achievements of learners of foreign languages across Europe. The pre-test included an IELTS task 1 and a task 2 prompt, adapted from the IELTS Cambridge book series. The students were divided into two groups of A and B to be checked by their peers via the Google Docs which was chosen for the critique and peer review owing to the effectiveness. It had shown concerning the previous research (Holliman & Scanlon, 2006; Sharp, 2006; Godwin-Jones, 2008; Ebadi & Rahimi, 2017). The data of the participants in groups A (control) and B (experiment) are summarized in Table 1. Group A comprised 20 students, with 10 of whom being male and the rest being female; likewise, the same categorization was applied for the experiment group (B).

Table 1. Participants of the study (Groups A and B)

Gender	Level	NO.
Female	B2	20
Male	B2	20

3.3. Design and procedure

The course was held in IELTS Core institute from March 2019 to June 2019. The materials used in this experiment were the Academic Writing Series (Oshima & Hogue, 2013). This course was intended to establish a sense of familiarization among students concerning the concepts and conventions of academic writing as well as providing the learners with opportunities for developing their academic writing skills. Additionally, the course benefitted from diverse activities to ensure learning. First, the pre-test was conducted (week 1) whose aim was to explore the proficiency level of the learners. Over the period between the pre and post-tests, the study participants were instructed on the use of Google Docs to familiarize them with the technical context and the content issues. To this end, the instructor gave a two-week-long course to the students in a computer laboratory to familiarize them with all the strategies, functions, and features in Google Docs. Considering the instruction issues, the instructor also taught students the analysis of the IELTS writing analysis criteria, namely task achievement, coherence and cohesion, lexicon, and grammatical range and accuracy. The participants were told to create Google Docs profiles and share them with the other group members as well as the instructor. Subsequently, similar to Kim (2010), by using Google Docs and considering LDF, the learners discussed with their peers what sections of their texts needed revision by their peers asynchronously. During the procedure of online LDF, albeit under the instructor's supervision, the students responded to what their peers required them to

comment on through Google Docs. This collaborative critique included a series of LDF-oriented comments which were exchanged by peers via Google Docs, with each comment representing a specific type of error, highlighted with different colors. The objective was to ensure that the participants received the required type of feedback as for using appropriate vocabulary, collocation, idiomatic expressions, metaphors, prepositions, verbal phrases, and other language features (i.e., lexicon), and range of grammar structures and tenses, and punctuation (i.e., grammatical range and accuracy). In order to follow the procedures above, the learners were given a sample in which doing the process of editing was illustrated.

In the last session of the class, the post-test was given, subsuming writing tasks 1 and 2 with the same difficulty levels and procedures as in the pre-test. Therefore, for task 1, the participants in both groups were given a line graph to summarize according to the given instructions, and for task 2, they were asked to write about the advantages and disadvantages of a given topic. It was conducted to investigate the effect of LDF-based peer response and writing instructions on the writing accuracy and vocabulary knowledge of the students. At the end of the experiment, the participants were interviewed individually in English; this procedure took place by administering semi-structured interviews whereby each participant was enquired with respect to the impact of LDF on their improvements and then regarding their perception of incorporating Google Docs as a tool of online editing in the procedure. Each interview took 20 minutes and was audio recorded to be transcribed for the data analysis (see Appendix 2 for interview questions). Furthermore, the interview was carried out with the group achieving higher results in the post-test to clarify and explain the quantitative results and findings.

3.4. Data collection tools and procedures

3.4.1. Writing assignments

In this research, the participants were given eight process-oriented essays and eight graph summarizations, whose results were revised by their peers in terms of grammatical accuracy and lexical resources, a term referred to in the IELTS marking rubrics. For each writing assignment, one draft was written. The pre-writing course was presented to the students in the classroom by the instructor, and after the class, they were assigned to write an essay and, by extension, a graph summary in 60 minutes at home. After the drafts were written, peers were asked to revise the writing tasks using ACOM (Asynchronous computer-mediated communication, utilizing the patterns of written discourse). After writing all the assignments,

the teacher used reflective journals to ensure the effectiveness and usability of the method. All writing assignments' topics were general and did not require expert knowledge (see Appendix 1). Moreover, eight different figures were given to students (IELTS Cambridge books samples) considering the variety which included pie charts, bar charts, line graphs, maps, tables and flow charts.

3.4.2. Classroom observation recordings

Peer response sessions were held both online and offline, which was an attempt to observe feedback types provided by peers and the interaction taking place between them. Also, grammatical accuracy and lexical development were two criteria to be checked by the teacher. The natural observation was carried out by the instructor as unstructured and natural (Bailey, 2006), writing down notes and reflective observation logs in each observation. The offline revisions were voice recorded and in both online and offline peer responses Persian was spoken, which was later transcribed by the instructor. Online classrooms were also observed by one of the researchers.

4. Data analysis

4.1. Writing assignments

The two final essays and summaries were rated by three experts, one of whom was an IELTS instructor and two were university professors of EFL. Rubric designed by Yoon and Lee (2010) for academic writing was used to revise and grade them. In Table 2, mechanics, contents, organization, and structure are presented as the subcategories of the test. All the elements were adopted in order to check the progress in students' writing. Specifically, lexical diversity was deemed to be more related to contents, but grammatical accuracy was highly related to structure. Pearson's r was used to examine inter-rater reliability between the three researchers, which was over 0.9 at the 0.01 level of significance for the four final drafts.

Table 2. Scoring rubric for academic writing (adapted from Yoon & Lee, 2010)

Scoring criteria

Mechanics

Periods, commas, and other punctuations are used correctly.

The spelling is accurate.

The title is centered, and capital letters are used correctly.

The first line is indented, and font and size are appropriate.

Content

The content of the paragraph fits the assigned topic.

The paragraph is interesting and easily understandable.

The content is carefully thought out and is related to the topic.

Organization

The paragraph has a topic sentence with a topic and one or more main ideas.

The paragraph has supporting sentences with at least one example.

The paragraph has a concluding sentence.

The paragraph is organized appropriately according to the content.

The paragraph has unity and coherence.

Appropriate transition words are used to show the relationship between sentences.

Structure

Grammar usage is correct.

The sentence structure is appropriate.

Simple, compound, complex, and compound-complex sentences are used correctly.

The paragraph is free of fragments, run-ons, and comma splices.

4.2. Quantitative analysis

As the learners were scored continuously for their performance on academic writing skills in two groups, the numerical data were analyzed using two one-way Multivariate Analysis of Covariance (MANCOVA). In addition, each learner was scored from 1 to 9 for the total academic writing, and a mark from 1 to 9 for the two marked criteria (lexical resources and syntax). An independent-samples t-test was conducted to examine the significance of the methods between the two groups, and, by extension, to check the differences between the two groups' writing proficiency as the dependent variable. To control the impact of the covariate, i.e., the post-tests, on each other as well as the results, one-way MANCOVA was run.

4.2.1. Feedback types

The coding scheme of feedback types by Ellis (2008) was adapted to examine the feedback types mostly used in the assignments. Transcripts of both online and offline sessions were analyzed, and Language Related Episodes (LREs) were categorized as important elements of feedback. An LRE is any part of a dialogue where language learners “talk about the language they are producing, question their language use, or correct themselves or others” (Swain & Lapkin, 1998, p.326). Table 4 shows the grammatical and lexical structures of feedback types:

Table 3. Feedback types of lexis and grammatical structure

Type Code	Description
Direct Correction (DC)	Participants explicitly provide the correct form of lexis or grammatical structure.
Indirect Correction (IC)	Participants indicate lexis or grammatical structure related errors, but does not provide the explicit correction.
Clarification Request (CR)	Participant seeks assistance in understanding the other participant's lexis or grammatical structure related writing
Confirmation Check (CC)	Participant seeks confirmation that he or she understood the other person's lexis or grammatical structure related writing.
Recast (R)	Participants reformulate or expanded an ill-formed or incomplete composition in an unobtrusive way.
Electronic Feedback (EF)	Participants indicate an error and provide a hyperlink to a concordance file that provided examples of correct usage in lexis or grammatical structure.

4.3. Qualitative analysis

This research employed the thematic analysis (Boyatzis, 1988) for exploring the qualitative data. This was to seek out the relevant themes concerning EFL learners' perceptions of the effect of online learner-driven peer feedback on the quality of their IELTS writing. The thematic analysis is a method of qualitative research which is commonly adopted to categorize the prominent themes in a specific area (Charmaz, 1994); it features systematic, yet flexible guidelines in qualitative data analysis, thereby constructing theories that stem out of the given data (Charmaz, 2006). Hence, participants' interview transcriptions were coded (Liu & Sadler, 2000) based on open thematic coding to draw on the most important codes related to their perceptions about online learner-driven. Later on, the derived codes were categorized concerning their themes, and subsequently, the interrelationships among the main variables were scrutinized and categorized according to their content. Following this step, clustering, a bottom-up and reiterative approach, was conducted, which is defined as categorizing and collecting the data which involve the same theme (e.g., labeling).

5. Results

5.1. The quantitative analysis

5.1.1. Academic writing

To explore the impact of learner-driven peer feedback compared to face-to-face peer feedback, two one-way MANCOVA tests were conducted. Table 4 presents the data on the difference between the mean scores of the pre-test in the two groups (controlled and experimental) and it showed that the participants in both groups enjoyed a more or less similar level of knowledge. Post-tests in both groups indicated improvement in the writing skills; therefore, it was required to measure the degree of that improvement in both groups to assess the probable difference of the methods used in each group. Regarding Table 5, the learners' post-test scores in the experimental group were significantly higher compared to the scores in the control group. Overall, after the steps that had been taken (i.e., LDF oriented peer-editing and traditional in-class peer-editing), the learners' writing skills were developed. The independent samples t-test was carried out to explore the probable differences between the two groups after conducting the two instructional procedures.

Table 4. Descriptive statistics of the pre-test scores for both groups

Groups		Mean	Std. Deviation	N
Writing skill	Ex	3.0	0.858	20
	Co	2.9	0.940	20

Ex: experimental Co: control

The number of students in each group was equal, 20; the mean scores were almost equal with 0.1 scores higher in the experimental group and the scores of standard deviations in both groups were at the same range. Therefore, the level of proficiency for writing was almost the same in both groups before conducting the research.

In the next part of the statistical analysis, a T-test was run to evaluate the impact of the LDF and face-to-face peer editing on the learners' writing scores in both groups.

Table 5. Independent sample test investigating the difference between the post-test in both groups

T-test for Equality of Means								
						95% Confidence Interval of the Difference		
Writing (Post)		F	Sig.	t	df	Sig (2tailed)	Lower	Upper
		3.477	.001	-6.086	38.000	.001	-2.165	-1.084

Table 5 above represents the results of the independent sample test for the post-test in

both experimental and control groups. As it is shown, the sig. (Two-tailed) value (P-value) equals .001, which is smaller than 0.05. Therefore, a significant relationship can be observed between the methods applied and the post-test scores of the participants in both groups. It can be confirmed that the methods were positively effective on improving the participants' proficiency in writing skill.

5.1.2. Academic writing skills

Confirming the significant effect of the LDF and traditional face-to-face peer editing on the learners' writing skill in general, it was necessary to measure the differences of each method on the students' academic writing skills and compare the results. Table 6 below illustrates the difference in means of the learners' academic writing skills in the pre-tests and post-tests of the experimental and control groups.

Table 6. Descriptive statistics: mean differences between the pre-tests and post-tests of both groups

	Mean	N	Std. Deviation	Std. Error mean
TA-Ex-pre	3.625	20	1.145	.256
TA-Ex-post	8.500	20	1.076	.240
CC-Ex-pre	3.900	20	1.283	.287
CC-Ex-post	7.525	20	1.371	.306
L-Ex-pre	3.700	20	1.093	.244
L-Ex-post	7.750	20	.952	.213
GA-Ex-pre	3.525	20	1.175	.262
GA-Ex-post	7.525	20	1.117	.249
TA-Co-pre	3.625	20	.901	.201
TA-Co-post	5.125	20	.886	.198
CC-Co-pre	3.050	20	.776	.173
CC-Co-post	4.875	20	.971	.217
L-Co-pre	3.525	20	1.069	.239
L-Co-post	4.100	20	1.075	.128
GA-Co-pre	3.325	20	.591	.132
GA-Co-post	4.500	20	.584	.130

In Table 6 above four subdivisions of the writing skill involving task achievement (TA), coherence and cohesion (CC), lexicon (L), and grammatical accuracy (GA) were compared regarding the pre-test and post-test scores in the experimental and control groups. In all the cases, the means in the post-test scores indicate higher values than in the pre-test scores in both groups. Therefore, both online and face-to-face peer-editing were positively

effective on the learners' development in the writing proficiency, although the effect of LDF is clearly higher. Standard deviation values and standard error means were almost the same for pre-test and post-test scores in both groups, as well.

In the next step, two one-way MANCOVA tests were employed, each for the control and experimental groups, separately. The one-way MANCOVA test was used here because the aim was to compare the level of the impact of the independent variables of the study on its dependent variables. The independent variables of this study involved face-to-face peer-editing and LDF, while the dependent variables here were task achievement (TA), coherence and cohesion (CC), lexicon (L), and grammatical accuracy (GA).

Table 7. MANCOVA for between-subject effects of face-to-face peer-editing on academic writing skills in the control group

Effect	Type Sum of Square	df	Mean Square	F	p
TA	2.900	1	2.900	5.339	.026
CC	3.225	1	3.225	2.640	.023
L	7.225	1	7.225	11.930	.000
GA	5.506	1	5.506	9.203	.001

As Table 7 above shows, the sig. value for the face-to-face peer editing as associated with TA is less than .05 ($F= 5.339$, $p = .026$, $p < .05$). The sig. value related to CC for the participants in the control group is also less than .05 ($F= 2.640$, $p = .023$, $p < .05$). The value for L in the control group is again less than .05 ($F= 11.930$, $p = .000$, $p < .05$). Finally, the sig. value as associated with GA in this group is less than .05 ($F= 9.203$, $p = .001$, $p < .05$). Regarding the overall evaluation of the values in Table 7, the result is statistically significant, and it can be affirmed that the adopted methodology was significantly effective in improving the task achievement, coherence and cohesion, lexicon, and grammatical accuracy in the participants of the control group. In order to measure the level of effect of LDF on the writing skills of the experimental group, another *MANCOVA* test was run. The results can be seen in the following table.

Table 8. MANCOVA for between-subject effects of LDF on academic writing skills in the experimental group

Effect	Type III sum of squares	df	Mean square	F	p
TA	10.506	1	10.506	9.138	.004
CC	11.256	1	5.256	7.480	.041
L	25.600	1	25.600	31.895	.000
GA	24.806	1	24.806	26.230	.000

As evidenced in Table 8, the sig. value for the online peer editing as associated with TA is less than .05 ($F = 9.138$, $p = .004$, $p < .05$). The sig. value related to CC for the participants in the experimental group is also less than .05 ($F = 7.480$, $p = .041$, $p < .05$). The value for L in this group of participants is again less than .05 ($F = 31.895$, $p = .000$, $p < .05$). Finally, the sig. value as associated with GA in this group is less than .05 ($F = 26.230$, $p = .000$, $p < .05$). Based on the overall evaluation of the values in Table 8, it can be concluded that the result is statistically significant, and it can be affirmed that the proposed methodology was significantly effective in improving the task achievement, coherence and cohesion, lexicon, and grammatical accuracy in the participants of the experimental group.

On the other hand, comparing Tables 7 and 8 with regard to the mean values in both Tables, the higher significance of the online peer editing in promoting the participants' writing skill in terms of all the areas of task achievement, coherence and cohesion, lexicon, and grammatical accuracy in the experimental group is affirmed. Therefore, based on the comparative analysis of results the method under study can be claimed to be significantly effective.

Table 9. MANCOVA for between-subject effects of LDF on academic writing skills in the experimental group

Effect	Type III sum of squares	df	Mean square	F	p
TA	10.506	1	10.506	9.138	.004
CC	5.256	1	5.256	4.480	.041
L	25.600	1	25.600	31.895	.000
GA	24.806	1	24.800	26.230	.000

As demonstrated by Table 9, the sig. value for TA, CC, L and GA in the online peer editing is smaller than .05; therefore, the method is statistically significant in improving task achievement, coherence and cohesion, lexicon, and grammatical accuracy in the participants of the groups. Comparing Tables 8 and 9 and with regard to the mean values in each Table, the higher significance of the online peer editing in promoting the participants' writing skill in the experimental group is affirmed.

5.2. The qualitative analysis

After interviewing the learners about their attitudes towards LDF, all the interviews were first transcribed and then analyzed via thematic analysis through which some themes emerged as illustrated in Table 10.

Accordingly, it can be inferred from the interviews that learners had positive attitudes with regards to the learner-oriented form of the feedback they received via Google Docs, and they were satisfied with their improvements in this regard. Table 10 depicts categories of the EFL learners' attitudes towards the impact of learner-driven online peer-editing using Google Docs on academic writing skills.

Table 10. Categories of the EFL learners' attitudes and perceptions towards the impact of online peer-editing using Google Docs on academic writing skills

Categories	Themes	Examples
1. Learners' revision of their writings based on LDF	a. Accuracy of grammar and content	L7: Because without grammar, it is impossible to write meaningful sentences it is good to me to receive feedback on grammar that I ask my peers to comment on based on my teachers' comments on my errors in grammar that I know.
2. Positive attitudes towards the impact of online learner-driven feedback by peers	b. Macrostructure of writing	L9: without lexical knowledge, it is in vain to attempt to take the IELTS exam, so I take vocabulary as a priority especially the ones that I am not sure about and this way I can ask my classmates to recheck them so that I feel more secure than to be checked by my tutor.
3. Partial unsafety toward peer comments	a. Learning from peers better when specifying what to be checked.	L5: after I showed my peer what they should comment on and reading their revisions, I found out how I could use structures and score boosting vocabulary not in a mechanical way and I could learn much faster as I was not a passive member. Moreover, knowing what I needed helped me in terms of time investment.
4. The convenience of using Google Docs for learner-driven peer-editing	b. Giving prominence to the key features that students are not certain about their functions as told to their peers.	L1: when my peers wrote explanations about my errors, it was easy for me to learn how not to repeat them in the future. For example, discourse markers were not hard for me to use after two weeks of revision with my hints for my peers.
	a) Prioritizing teachers' comments to peers	L9: as my peers are not C2 students, I sometimes do not feel that I should rely on
	b) Feeling not embarrassed when being checked by peers.	

		<p>their comments.</p> <p>L1: It gives me a better feeling when I have my teacher's comments on my essays and summaries as I know that he is prone to any errors due to lack of enough proficiency.</p> <p>L6: comparing my peers and teachers, I should admit that sometimes I do not like my teachers to check my essays as I feel shy if he sees many errors in my essays. Also, it is hard for me to ask my teachers how to check my essays, but my classmates do not put me in stress.</p> <p>L4: Google docs help me save time and have constant access to my peers and receive and send my essays from and to them any time I want. Besides, when I do it online, it is easier for me to request them what parts to have checked, I do not know why!</p> <p>L8: when my classmate wanted me to check his essay in terms of paragraphing and word count, I spent far less time than what was needed in a typical way, and I thank Google Docs for it.</p> <p>L7: through Google Docs, commenting on the areas that I liked my friend to check for me was easier than the ordinary method in the real world, which was due to the features like highlighting and bolding</p>
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As visible in Table 10, the participants of the study emphasized the positive effects of LDF using Google Docs. Most importantly, they referred to a sense of safety, constructive effects and ease of functioning in benefiting from peer feedback using Google Docs. However, a certain amount of uncertainty was also evident. The participants were trained in how to revise and comment on their peers' writing in terms of all writing criteria (i.e., task achievement, coherence and cohesion, lexicon, and grammatical range and accuracy), based on the type of feedback they were required to provide.

As they were interviewed, they stated that the required comments were given using LDF with the majority of them concerning accuracy and lexis (range of grammar structures and tenses, and punctuation as well as the type of vocabulary, register, and collocations).

They deemed their grammatical knowledge to be the most important subset to be improved, followed by the lexical competence. The revisions were not mostly about task management and cohesion as they were seldom asked to check them. The learners also requested their peers to check the accuracy of the information, the key features, and the word count of their peers' essays and summaries. In some cases, they were also asked to check the paragraphing, the use of cohesive devices as well as the register in their paragraphs. The students stated that when they chose which areas of their writing to be revised, their awareness would be raised regarding what to avoid in their latter writing samples. Generally, the participants showed positive attitudes towards learner-driven feedback provided by their peers via Google Docs; nevertheless, the ones in charge of revisions occasionally did not follow their partners' requests as they thought what they provided their peers with would be more beneficial to them. In some rare cases, a small number of students were not receptive to the feedback they received owing to a variety of personal reasons.

While they were receptive to their peers' comments and revisions, they mostly preferred their instructors' asynchronous feedback, which, as they were interviewed, was because they thought that those feedbacks were more pertinent to the important parts of academic writing. They stated that the utilization of the learner-driven feedback through Google Docs was very constructive as they could review and analyze their comments and revisions online anytime and anywhere and, secondly, they could better focus on their weaknesses when they were given learner-driven comments.

6. Discussion

This research sought to examine the effects of learner-oriented peer feedback on IELTS learners writing skills and their perceptions towards their progress. According to results, in terms of LDF, the findings of this study are in line with Carless et al. (2011), whose study emphasized the effectiveness of group interaction when providing peer feedback. The current study showed that students performed better when they were involved with the revision, which raised their awareness in terms of grammatical accuracy and choice of words. Using learner-driven feedback, students were able to collaborate more with their peers in editing and providing feedback on writing tasks compared to face-to-face classrooms, as they preferred Google Docs as an out-of-class and online collaborative tool to read, review, comment and

edit the academic writing skills of other members. In line with Ebadi and Rahimi (2017), through LDF-based peer correction in Google Docs, the learners in this study could correctly present the information in their writing by presenting all the relevant information in the four areas of academic writing (i.e. task achievement, coherence and cohesion, lexicon, and grammatical range and accuracy). Besides, similarly to Alshuraidah and Neomy (2019), who referred to LDF as a remedy to psychological barriers to the traditional in-class peer-editing, namely reluctance and shyness, the students in this study claimed that what made them interested and chased away the reluctance in the revision procedure was its learner-centeredness, thereby leading to their significant development in the writing skills. The participants claimed that LDF helped raise their awareness to avoid repeating their errors, which had stemmed from the learner-driven form of feedback. Also, in line with Alshuraidah and Neomy's research (2019), the students reported a high level of engagement in the activity when they were actively involved in the revision, which led to a better and easier assimilation of the input. The findings of this research are also in line with Tudor (1996), who reported that learner-driven feedback increases the level of learners' involvement. Lastly, this research corroborates the reports by Dam (2011), indicating that through learner-driven feedback, learners would allocate more time to their work; thus, their engagement will increase in the process. In the control group, regardless of the number of times, students were given feedback, yet they experienced the same errors more or less in a specific score of time, while in the experiment group, they did show significantly faster improvements, which is attributed to their more engagement in the process of revision based on the interviews. The findings corroborated those of Green (2019), who stated empowering learners to negotiate feedback and participate in the process is at the center of collaborative teacher feedback because it gives learners the ability to behave as active respondents to feedback.

While learners respond to the LDF approach and see it as beneficial for their written language accuracy and academic abilities (Maas, 2017), they raised some questions about the LDF process as they were uncertain about what aspects of their work to inquire about. This implies that for learners who have not yet gained adequate competence in English and the metalanguage to discuss language issues, the method may need to be modified.

It is worth noting that the use of Google Docs as an online educational platform was very important in order to fulfill this aim, as reported by Latifi, Noroozi, Hatami & Biemans (2019), informing that students consider online educational platforms as facilitative in learning. Furthermore, as Phuong & Nguyen (2019) concluded, the majority of students are satisfied with the knowledge they gain in online platforms such as Facebook and Google

Docs; the learners in the face-to-face classroom might not have been mentally relaxed while they were writing their assignments because of some environmental factors, such as the presence of the teacher and other classmates. Therefore, these conditions, which might have affected the learners, could influence the LDF process negatively. Furthermore, the results of this study were in line with those of Yang (2010) reporting that Google Docs assisted learners to share their writing samples with their peers. The shared responsibility of revision between learners and their peers was facilitated when they used Google Docs. Also Sharp (2006) reported that Google Docs allowed editing and facilitated collaborative writing in the language classroom. Similarly, Godwin-Jones (2008) found Google Docs as the best tool for online text editing.

Based on the interviews, it could be argued that while learner-driven feedback was significantly more effective than the typical peer-feedback provided by students, they mostly faced difficulties regarding the lack of time and stress they experienced in the class. However, as presented by Cloete (2014), using online applications and means could lead to saving time while motivating learners and increasing effectiveness. In a similar vein, the findings of this study corroborated Shang (2019) who showed that students' grammatical accuracy could improve significantly when working with online educational platforms. However, some students might feel discouraged from sharing their drafts and ask for feedback as they might feel inferior to their peers after having their writings revised (Rick & Guzdial, 2006). Coyle (2007) states that, in some cases, students perceive it as undesirable to revise their peers' writings, and they do not equally contribute to their peers' essays.

7. Conclusion

The findings of the current study suggest that learners' academic writing skills are more effectively developed if learners take advantage of LDF instead of typical peer-oriented feedback. Moreover, they would be more focused and show a significant improvement in both short and long terms. If LDF is delivered through technology, the success rate could significantly increase. Thus, teachers are recommended to encourage their students to use Google Docs to write and share their drafts with their peers to be edited based on LDF. Consequently, teachers are recommended to inform learners of the increasing importance of learner-driven peer feedback through online applications such as Google Docs, which results in effective learning. Furthermore, EFL teachers are recommended to consider Google Docs affordances as a newly emerging collaboration tool in which students can asynchronously edit their peers' writings. As the LDF provided in Google Docs asynchronously in this study,

learners felt that teacher and peer's synchronous chats would be beneficial in the process. Thus, further research could explore the combination of synchronous and asynchronous LDF to provide learners with access through chat platforms to their teachers and peers when facing challenges in processing the feedback.

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References

- Abou Saeed, M., Ghazali, K., Sahuri, S., & Abdulrab, M. (2018). Engaging EFL learners in online peer feedback on writing: What does it tell us? *Journal of Information Technology Education Research*, 17, 39-61. DOI: 10.28945/3980
- Alharbi, M. A. (2020). Exploring the potential of Google Docs in facilitating innovative teaching and learning practices in an EFL writing course. *Innovation in Language Learning and Teaching*, 14(3), 227-242.
- Alshuraidah, A., & Storch, N. (2019). Investigating a collaborative approach to peer feedback. *ELT Journal*, 73(2), 166-174.
- Bailey, K. M. (2006). *Language Teacher Supervision: A Case-Based Approach*. Cambridge: Cambridge University Press.
- Ballantyne, R., Hughes, K., & Mylonas, A. (2002). Developing procedures for implementing peer assessment in large classes using an action research process. *Assessment & Evaluation in Higher Education*, 27(5), 427-441.
- Benson, P., & Voller, P. (Eds.). (1997). *Autonomy and Independence in Language Learning*. London: Routledge.
- Bloch, J. (2008). *Technologies in the Second Language Composition Classroom*. Michigan: Michigan University Press. DOI: 10.3998/mpub.198706
- Boyatzis, R. E. (1998). *Transforming Qualitative Information: Thematic Analysis and Code Development*. London: SAGE.
- Bradley, L., & Thouëсны, S. (2017). Students' collaborative peer reviewing in an online writing environment. *Themes in Science and Technology Education* 10, 2, 69-83.
- Brown, S. (2004). Assessment for learning. *Learning and Teaching in Higher Education*, 1, 81-89.
- Carless, D., Salter, D., Yang, M., & Lam, J. (2011). Developing sustainable feedback practices. *Studies in Higher Education*, 36(4), 395-407. <https://doi.org/10.1080/03075071003642449>
- Charmaz, K. (1994). *The Grounded Theory Method: An Explication and Interpretation*. New York: Sociology Press.
- Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide through Qualitative Analysis*. London: SAGE.
- Chen, T. (2016). Technology-supported peer feedback in ESL/EFL writing classes: A research synthesis. *Computer Assisted Language Learning*, 29(2), 365-397. <https://doi.org/10.1080/09588221.2014.960942>
- Cloete, R. (2014). Blending offline and online feedback on EAP writing. *The Journal of Teaching English for Specific and Academic Purposes*, 2(4), 559-571.

- Coyle Jr, J. E. (2007). *Wikis in the College Classroom: A Comparative Study of Online and Face-to-face Group Collaboration at a Private Liberal Arts University*. [Unpublished doctoral dissertation]. Kent, OH: Kent State University.
- Creswell, J. W., Plano Clark, V. L., Gutmann, M., & Hanson, W. (2003). Advanced mixed methods research designs. In A. Tashakkori & C. Teddlie (Eds.), *Handbook on Mixed Methods in the Behavioral and Social Sciences* (pp. 209–240). Thousand Oaks, CA: Sage Publications.
- Dam, L. (2011, September, 9). Developing learner autonomy. From theory to classroom practice. [Plenary talk]. LASIG conference, Venice, Italy
- Cañabate, D., Nogué, L., Serra, T., & Colomer, J. (2019). Supportive peer feedback in tertiary education: Analysis of pre-service teachers' perceptions. *Education Sciences*, 9(4), 280. <https://doi.org/10.3390/educsci9040280>
- Ebadi, S., & Rahimi, M. (2017). Exploring the impact of online peer-editing using Google Docs on EFL learners' academic writing skills: a mixed methods study, *Computer Assisted Language Learning*, 30(8), 787-815. <https://doi.org/10.1080/09588221.2017.1363056>
- Ellis, L. (2008). *Writing Instruction and Learning Strategies in a Hybrid EAP Course: A Case Study with College-bound ESL Students* [Unpublished doctoral dissertation]. Minneapolis: Walden University. ProQuest Dissertations Publishing. <https://www.proquest.com/openview/48df6e42227f174a92975f491c11753d/1?pq-origsite=gscholar&cbl=18750&diss=y>
- Falchikov, N. (2001). *Learning Together: Peer Tutoring in Higher Education*. Philadelphia: RoutledgeFalmer.
- Godwin-Jones, R. (2008). Emerging technologies: Web-writing 2.0: Enabling, documenting, and assessing writing online. *Language Learning & Technology*, 12(2), 7-13.
- Goldstein, L. M. (2004). Questions and answers about teacher written commentary and student revision: Teachers and students working together. *Journal of Second Language Writing*, 13(1), 63-80. <https://doi.org/10.1016/j.jslw.2004.04.006>
- Green, S. (2019). What students don't make of feedback in higher education: An illustrative study. *Journal of English for Academic Purposes*, 38, 83–94.
- Ishtaiwa, F. F., & Aburezeq, I. M. (2015). The impact of Google Docs on student collaboration: A UAE case study. *Learning, Culture and Social Interaction*. 7, 85–96.
- Holliman, R., & Scanlon, E. (2006). Investigating cooperation and collaboration in near synchronous computer mediated conferences. *Computers and Education*, 46(3), 322–335. <https://doi.org/10.1016/j.compedu.2005.11.002>
- Huisman, B., Saab, N., van den Broek, P., & van Driel, J. (2019). The impact of formative peer feedback on higher education students' academic writing: A meta-analysis. *Assessment & Evaluation in Higher Education*, 44(6), 863-880.
- Huisman, B., Saab, N., van den Broek, P., & van Driel, J. (2018). Peer feedback on academic writing: Undergraduate students' peer feedback role, peer feedback perceptions and essay performance. *Assessment & Evaluation in Higher Education*, 36(7), 955–68. DOI: 10.1080/02602938.2018.1424318
- Hyland, K. (2003). *Second Language Writing*. Cambridge: Cambridge University Press.

- Hyland, K., & Hyland, F. (2006). Interpersonal aspects of response: Constructing and interpreting teacher written feedback. In *Feedback in Second Language Writing: Contexts and Issues* (Cambridge Applied Linguistics, pp. 206-224). Cambridge: Cambridge University Press. DOI:10.1017/CBO9781139524742.013
- Kieser, A. L., & Golden, F. O. (2009). Using online office applications: Collaboration tools for learning. *Distance Learning*, 6(1), 41-46.
- Kim, S. (2010). *Revising the Revision Process with Google Docs* (S. Kasten, Ed.). Alexandria, VA: TESOL Publications.
- Kim, S. Y., & Lee, C. H. (2018). The impact of peer response on lexis and grammatical structure in L2 writing through blended learning. *Multimedia-Assisted Language Learning*, 21(4), 82-110.
- Lamy, M.-N. & Hampel, R. (2007) *Online Communication in Language Learning and Teaching*. London: Palgrave Macmillan.
- Latifi, S., Noroozi, O., Hatami, J., & Biemans, H. J. (2019). How does online peer feedback improve argumentative essay writing and learning?. *Innovations in Education and Teaching International* 1-12. <https://doi.org/10.1080/14703297.2019.1687005>
- Lee, I. (2012). Spare the red pen!: suggests ten formative feedback strategies in L2 writing. *Modern English Teacher*, 21(2), 60-62.
- Liu, J & Sadler, R. W. (2000). The effects of peer versus teacher comments in both electronic and traditional modes on ESL writers' revisions [Paper presentation]. The 34th annual TESOL Convention, Vancouver, BC, Canada.
- Liu, N. F., & Carless, D. (2006). Peer feedback: The learning element of peer assessment. *Teaching in Higher Education*, 11(3), 279–290. <https://doi.org/10.1080/13562510600680582>
- Maas, C. (2017). Receptivity to learner-driven feedback in EAP. *ELT Journal*, 71(2), 127–140. <https://doi.org/10.1093/elt/ccw065>
- Mangelsdorf, K. (1992). Peer reviews in the ESL composition classroom: What do the students think? *ELT journal*, 46(3), 274-284. <https://doi.org/10.1093/elt/46.3.274>
- McCabe, J., A. Doerflinger, A., & Fox, R. (2011). Student and faculty perceptions of E-feedback. *Teaching of Psychology*, 38(3), 173–179. <https://doi.org/10.1177/0098628311411794>
- Mendoca, C., & Johnson, K. (1994). Peer review negotiations; revision activities in ESL writing instruction. *TESOL Quarterly*, 28 (4), 745–769. DOI: 10.2307/3587558
- Mohr, D. (2010). Providing effective feedback in online courses for student learning. [Webinar]. Sloan C Foundation.
- Noroozi, O., & Mulder, M. (2016). Design and evaluation of a digital module with guided peer feedback for student learning biotechnology and molecular life sciences, attitudinal change, and satisfaction. *Biochemistry and Molecular Biology Education*, 45(1), 31-39. <https://doi.org/10.1002/bmb.20981>
- Oshima, A., & Hogue, A. (2013). *Longman Academic Writing 4: Essays*. New York: Pearson Education.
- Perron, B. E., & Sellers, J. (2011). A review of the collaborative and sharing aspects of Google Docs. *Research on Social Work Practice*, 21(4), 489-490. DOI: 10.1177/1049731510391676

- Phuong, H. Y., & Nguyen, T. V.S. (Eds.). (2019). *Using Alternative Assessment to Improve EFL Learners' Learning Achievement: From Theory to Practice*. New York: Nova Science Publishers.
- Pintrich, P. R., & Schunck, D. H. (2002). *Motivation in Education: Theory, Research and Applications*. New York: Prentice Hall.
- Razak, N. A., & Saeed, M. A. (2014). Collaborative writing revision process among learners of English as a foreign language (EFL) in an online community of practice (CoP). *Australasian Journal of Educational Technology*, 30(5), 580-599. <https://web.a.cbscohost.com/abstract>
- Razak, N. A., Saeed, M., & Ahmad, Z. (2013). Adopting Social Networking Sites (SNSs) as interactive communities among English Foreign Language (EFL) learners in writing: Opportunities and challenges. *English Language Teaching*, 6(11), 87-198. DOI 10.1007/s11412-006-6842-6
- Rick, J., & Guzdial, M. (2006). Situating CoWeb: A scholarship of application. *International Journal of Computer-Supported Collaborative Learning*, 1(1), 89–115. DOI: 10.1007/s11412-006-6842-6
- Saeed, M. A., & Al Qunayeer, H. S. (2020). Exploring teacher interactive e-feedback on students' writing through Google Docs: factors promoting interactivity and potential for learning. *The Language Learning Journal*, 12(6), 1-18.
- Saeed, M.A., & Ghazali, K. (2016). Modeling peer revision among EFL learners in an online learning community. *Electronic Journal of Foreign Language Teaching*, 13(2), 275-292.
- Shang, H. F. (2019). Exploring online peer feedback and automated corrective feedback on EFL writing performance. *Interactive Learning Environments*, 1-13. <https://doi.org/10.1080/10494820.2019.1629601>
- Sharp, V. F. (2006). *Computer Education for Teachers: Integrating Technology into Classroom Teaching*. New York: McGraw-Hill.
- Swain, M., & Lapkin, S. (1998). Interaction and second language learning: Two adolescent French immersion students working together. *The Modern Language Journal*, 82(3), 320–337. <https://doi.org/10.1111/j.1540-4781.1998.tb01209.x>
- Taguchi, N., & Sykes, J. M. (Eds.). (2013). *Technology in Interlanguage Pragmatics: Research and Teaching*. Amsterdam: John Benjamins Publishing Company.
- Tudor, I. (1996). *Learner-Centeredness as Language Education*. Cambridge: Cambridge University Press.
- Twu, H. L. (2009). Effective wiki strategies to support high-context culture learners. *Tech Trends*, 53(5), 16–21.
- Yang, C. C. R. (2010). Using Google Docs to facilitate collaborative writing practice in an English language classroom practice. *TESL-EJ*, 14(3), 1–8.
- Yoon, S. Y., & Lee, C. H. (2010). The perspectives and effectiveness of blended learning in L2 writing of Korean university students. *Multimedia-Assisted Language Learning*, 13(2), 177-204.

Appendix 1. Writing task topics

- 1) The use of smartphones in the secondary school
- 2) Benefits of learning a new language
- 3) How do different types of products affect the economy and the environment?
- 4) Implementation of flipped learning in the secondary school
- 5) Advantages and disadvantages of tourism

- 6) The problem of global warming
- 7) The effect of online learning on learners' knowledge
- 8) The association between colors and feelings

Appendix 2. Interview questions

- (1) Did you think that online LDF using Google Docs was helpful to you?
- (2) Did you learn anything from your peers when you edited and provided comments on your peers' essays based on LDF?
- (3) Were your peers' corrections and comments useful to you when you revised your essay?
- (4) What was your reaction to the peer response activity? Did you like it or not? Why? Why not?
- (5) What did you focus on when you edit and write your comments?
- (6) What types of peer corrections and comments did you prefer?
- (7) What is your overall impression about LDF?