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Exploring the potential of Google Doc in facilitating innovative teaching and learning practices in an EFL writing course

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ABSTRACT
The aim of this study was to explore the potential of Google Docs in facilitating and supporting pedagogical practices in a writing course at a large Saudi university. As a qualitative case study, the study was conducted among 10 EFL learners working in five pairs on article report writing over one academic semester. The instructor’s observation and comments, learners’ comments and text revisions through Google Docs, as well as their follow-up interviews were qualitatively analyzed. The findings show that Google Docs supports writing instruction, specifically through (1) instructor and peer feedback that focuses on global and local issues in writing, (2) peer editing and drafting of writing at the global and local levels and (3) peer responses to feedback. Quantification of feedback and learners’ text revisions revealed variations between the instructor and peer feedback and among the five pairs of students. The thematic analysis revealed the students’ positive views of Google Docs supported pedagogical practices in writing.

1. Introduction

English as a foreign language (EFL) writing pedagogical practices have dramatically shifted from traditional approaches that focus on students’ final product to the process of writing (Hyland 2003). The intensive applications of socio-cultural theory (Vygotsky 1978) to EFL writing have also contributed to the dramatically changing pedagogical practices of writing which emphasize the role of expert scaffolding or teacher scaffolding/feedback (Aljaafreh and Lantolf 1994) and peer scaffolding/peer feedback in assisting learners to accomplish their writing tasks successfully (Villamil and de Guerrero 2006; for more details on the approaches, see Section 2.1. of this article). In other words, from the theoretical perspectives, feedback, to be an effective pedagogical practice in writing, needs to be interactive. That is, successful feedback occurs through teacher–learner interaction as in the case of teacher feedback or learner–learner interaction as in the case of peer feedback. However, studies indicate that successful feedback practices are often challenged by the traditional or classroom environment, particularly time and space constraints that restrict the opportunities for such interactions in writing classrooms (Bower and Richards 2006; Ebadi and Rahimi 2017).

In order to overcome time and space restrictions in the traditional environment, many EFL educators and instructors have recently been attracted by the innovative idea of technology integration in writing instruction (Jeong 2016). The speedy technological revolution has benefited writing instruction, starting from word-processing software and arriving at the twenty-first century technological tools, or so-called Web 2.0 technologies (Ebadi and Rahimi 2017; Slavkov 2015). The applications of Web 2.0 technologies, such as blogs, forums, wikis and Google Docs, also facilitate the creation
of online interactive learning environments for EFL collaborative writing where learners receive feedback from teachers and peers and engage in collaborative writing, peer feedback and peer editing of writing (Ebadi and Rahimi 2017; Slavkov 2015; Yang 2010). Yet, so far, the applications of Google Docs in writing instruction have not been explored as much as other Web 2.0 tools (Chu and Kennedy 2011; Ebadi and Rahimi 2017). Previous studies have highlighted the affordances of Google Docs which facilitate practices in writing instruction, including feedback, editing, drafting and tracking the history of changes to written texts (e.g. Ebadi and Rahimi 2017; Semeraro and Moore 2016; Woodard and Babcock 2014).

Moreover, while several studies on the applications of Google Docs in EFL writing focused on learners’ practices such as peer feedback, collaborative writing and peer editing of writing, teaching practices in writing such as teacher feedback and teacher–learner interaction have not been given adequate attention (Lin and Yang 2013). The current study was also motivated by the challenging nature of writing for EFL learners, particularly Saudi learners (McMullen 2009) and the physical environment of the classroom and time restrictions that make it difficult to engage learners in collaborative writing (Razak and Saeed 2014). Therefore, being motivated by the challenging classroom environment, the challenging nature of academic writing for EFL learners and the gap in previous research, the current study explored the role of Google Docs in facilitating writing instruction and learners’ reflection on Google Docs supported pedagogy in an EFL writing course in Majmaah university.

2. Literature review

2.1. Theoretical perspective

The investigation of the current study on the role of Google Docs applications in innovating writing instruction reported in this study is grounded on two theoretical perspectives: the process approach to writing (e.g. Ferris 1997; Leki 1991; Zamel 1985) and the sociocultural theory (Vygotsky 1978). The process approach to writing describes writing as a process rather than a product. That is, learners go through various stages in writing: pre-writing, writing and editing or revising. Researchers (e.g. Hyland 2003; Kalan 2015) viewing writing as a process argue that learners should be guided by teachers from the start of planning their writing to the final stage of editing through feedback and drafting practices and activities.

The sociocultural theory emphasizes the importance of individual’s cognitive development within 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, 86). This development is possible to achieve through mediated interactions, interactions between an expert and novice or even a more capable individual and a less capable individual. What is important about the ZPD and relevant to the focus of the present study is scaffolding. The tenets of sociocultural theory have often referred to such mediated interactions in EFL learning in general and writing in particular as assistance or scaffolding (Bradley and Thouësny 2017; Ebadi and Rahimi 2017; Hedgcock and Ferris 2013; Lantolf 1994; Lantolf and Thorne 2006; Saeed and Ghazali 2017; Semeraro and Moore 2016; Slavkov 2015; Villamil and de Guerrero 2006). Based on this research, teacher feedback is a kind of scaffold when provided to learners in a dialogic and constructive manner. However, some of those scholars and researchers (e.g. Bradley and Thouësny 2017; Ebadi and Rahimi 2017; Saeed and Ghazali 2017; Semeraro and Moore 2016; Slavkov 2015; Villamil and de Guerrero 2006) have argued that assistance should not only be mediated by teachers, but also by peers, providing evidence for the role of peer feedback in mediating EFL learners’ language learning, particularly writing. In brief, both approaches are relevant to investigation of EFL writing instructional practices, including feedback, process of writing, collaboration and peer editing of writing.
2.2. Google Docs supported pedagogical practices in writing

The recent applications of Web 2.0 tools have innovated EFL learning and in particular writing instruction. Specifically, Google Docs as a Web 2.0 technology has the potential to be used by teachers/university instructors as an interactive environment for their students’ group work or projects and assignments. The immediacy of Google Docs allows teachers/instructors to monitor their students’ progress in their written tasks (Chu and Kennedy 2011; Gillow-Wiles and Niess 2015). This feature of Google Docs maximizes its potential from allowing teachers and instructors not only to trace and facilitate students’ work, thus acting as mentors and facilitators, but also to provide constructive feedback on students’ work (Ebadi and Rahimi 2017).

Several studies on the applications of Google Docs in EFL collaborative writing have highlighted the potential of such innovative technology in serving as a space for peer feedback (e.g. Godwin-Jones 2008; Semeraro and Moore 2016; Woodard and Babcock 2014). Some of these studies have embarked on analyzing the types of peer feedback through Google Docs. For instance, Woodard and Babcock (2014) found that learners’ patterns of peer feedback are informed, directed and elicited that focused on the author, content, sentence structure, vocabulary choice, formatting, citation and other general issues of narrative writing. Bradley and Thouësny (2017) also reported that peer feedback through Google Docs focused on global areas of assignments, including main content, content structure and assignment and local issues, such as supporting details, language and referencing. This study also analyzed learners’ responses to peer feedback and reported that Google Docs allowed students to respond to peer feedback by ‘one reply turn’, ‘two and more reply turns’, ‘no reply and resolved’. It was interesting that ‘resolved’ was the most frequent response, which indicates that the learner adhered to the peer feedback given.

Google Docs also facilitates group or collaborative work and authentic group activities among its users and learners through its editing feature that enables them to refine and edit their tasks (Perron and Sellers 2011; Riley-Huff 2010). One of the writing pedagogical or instructional practices supported by Google Docs as most highly cited in earlier studies is group/peer editing or revision. Good Docs is distinguished from other Web 2.0 tools by its editing feature, specifically synchronous (simultaneous editing of writing by learners) and asynchronous (non-simultaneous editing by learners) (Yang 2010). According to Godwin-Jones (2008), Google Docs becomes the best tool for editing of writing. What also makes Google Docs a useful tool for peer editing of writing is both author and reviewer can contribute to the written text by refining or revising it (Gillow-Wiles and Niess 2015). Changes are automatically saved to the text, and the various versions can be traced back (Yang 2010).

Empirical studies also showed that Google Docs allowed learners to edit or revise their written texts by carrying out different operations, including addition, removal, organization and substitution (Semeraro and Moore 2016; Woodard and Babcock 2014) of elements of their written texts at various levels varying from words, phrases and sentences to elements beyond sentences. Studies have pointed toward the advantages of these affordances of Google Docs, including assisting Google Docs EFL learners to contribute to the overall quality of writing (Suwantarathip and Wichadee 2014) and specifically, in terms of content (Ebadi and Rahimi 2017; Semeraro and Moore 2016; Strobl 2014; Woodard and Babcock 2014), organization of ideas (Ebadi and Rahimi 2017; Semeraro and Moore 2016), language, including grammar (Ebadi and Rahimi 2017; Semeraro and Moore 2016; Woodard and Babcock 2014), citations (Woodard and Babcock 2014) and conventions (Semeraro and Moore 2016).

2.3. Students’ perception of Google Docs in writing

Several studies on the applications of Google Docs in EFL learning and writing instruction have explored learners’ perception of such applications. Generally, students reported positive perceptions/attitudes and enjoyable experiences in using Google Docs for learning and writing. Some studies have also reported that the specific Google Docs-supported pedagogical practices are
perceived as positive by learners, including collaborative learning (Chu, Kennedy, and Mak 2009; Lin and Yang 2013; Zhou, Simpson, and Domizi 2012), instant interactions and sharing of documents (Chu and Kennedy 2011), collaborative writing (Brodahl, Hadjerrouit, and Hansen 2011; Krajka 2012; Yang 2010), peer feedback and peer editing (Ebadi and Rahimi 2017; Hedin 2012; Suwantarathip and Wichadee 2014; Woodard and Babcock 2014). Reasons behind students’ positive perception, appreciation and experience in using Google Docs were also identified, varying from the easiness in collaborative work, sharing of information and editing of texts (Chu, Kennedy, and Mak 2009; Krajka 2012; Lin and Yang 2013; Suwantarathip and Wichadee 2014), accessibility to documents or texts anytime and anywhere (Woodard and Babcock 2014; Yang 2010), the value of peer comments and learning from peers (Ebadi and Rahimi 2017; Hedin 2012; Lin and Yang 2013; Yang 2010) as well as the user-friendly nature of Google Docs (Chu, Kennedy, and Mak 2009; Yang 2010).

Despite the evidence of the potential of Google Docs in facilitating language learning and writing instruction, its positive impact on students’ language and writing as well as their perception and motivation, there are still some challenges that may hinder learners from benefiting from Google Docs in language learning, particularly writing. For instance, in the same study by Ebadi and Rahimi (2017), the researchers identified some challenges in using Google Docs in collaborative writing. One of these challenges is students’ reluctance to contribute to the written tasks and share information with peers through Google Docs, which may negatively affect their experiences in using such tool in writing. Moreover, peer feedback as an important pedagogical practice in writing that is supported by Google Docs is sometimes challenged by learners’ mistrust of the reliability of peer feedback (Ebadi and Rahimi 2017). Therefore, teacher’s constant observation and facilitation of Google Docs-supported practices are necessary to achieve the intended goals of integration of such innovative tool in writing.

In brief, the above literature review highlights the rarity of research on teachers’ pedagogical practices in writing through Google Docs though some studies (e.g. Ebadi and Rahimi 2017; Semeraro and Moore 2016) pointed at teacher feedback through Google Docs in the procedures of the study and investigating the perception of learners’ peer feedback in comparison to teacher feedback. Yet, little is known about what patterns of teacher feedback are used through Google Docs and how such feedback contributes to students’ practices and writing. Specifically, the study attempted to answer the following research questions:

1. How does the application of Google Docs facilitate innovative teaching and learning practices in an EFL writing course?
2. How do the EFL learners view Google Docs supported pedagogy in EFL writing?

3. Method

3.1. Research design

The current study used a qualitative research approach that suits its aim of exploring the potential of Google Docs application to writing instruction in an EFL country. Specifically, the type of qualitative designs used in the study is a case study approach that focuses on a writing classroom as a case. Another reason that supports the use of such approach to research is the nature of the research: to explore the ways Google Docs facilitates pedagogical practices in writing and the way such practices are viewed by learners.

3.2. Participants

This study was situated in Majmaah universities that comprises almost 20,000 students, majoring in various graduate and undergraduate programs distributed among various faculties. Specifically, the study was conducted among fourth-year university students joining the Department of English at
Majmaah university. The reasons for selecting those particular students are the challenging nature of the article report writing tasks prescribed in the course that requires peer work, and the students’ willingness and interests in collaborative writing through Google Docs. The study focused on 10 male students ageing between 20 and 23 years old, with an upper intermediate level of proficiency.

As shown in Table 1, the participants are listed according to the pairs that they chose to join for their collaborative writing through Google Docs. Each pair is given a number as a label and each student is assigned a pseudonym, which is a combination of S (student) plus a number (either 1 or 2) and his group label (e.g. S1-G1). The instructor is referred to with ‘I’ whenever mentioned in the sample comments in the study. This was intended to protect the participants’ anonymity and assure successful confidentiality of them.

### 3.3. Procedure

The present study was conducted among 10 university students joining an advanced writing course during the academic year of 2017–2018. The course introduces learners to writing of various genres, including essays such as descriptive, persuasive and argumentative essays as well as report writing. The aim of the course is to foster students’ critical thinking, article report writing skills, such as critique and synthesis of information. As part of the evaluation of students’ performance, they are requested to complete four tasks varying from essays to article reports. However, the activities reported in this study focused on students’ article reports. The purpose of article reports is to help students develop skills related to article report writing.

The study was carried out following several, systematic stages (see Table 2) with the tasks performed by the instructor of the course and the students in each stage. At the first stage, the students were informed of the purpose of article report as part of assessment of their performance in writing that should be done in pairs. They were also informed of the purpose of Google Docs implementation to article report writing. The second stage involved training the learners on how to use Google Docs for group writing and editing as well as instructing them on how to search and download research papers from the Google Scholar. At the pre-writing stage, each pair of the students had to select three articles in one specific research topic in the area of EFL language acquisition and learning and teaching. They also had to summarize them by writing notes and then planning the structure of their reports. During this stage, the instructor also provided them with a sample report and instructed them

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation</td>
<td>The students were prepared and informed of the collaborative writing and editing activities via Google Docs and divided into five pairs and their consent was taken.</td>
</tr>
<tr>
<td>Training and instruction</td>
<td>The students were trained by the instructor on how to use Google Docs for writing and were instructed on what and how to search for articles and write reports.</td>
</tr>
<tr>
<td>Pre-Writing</td>
<td>Each pair had to select three articles in a topic in EFL learning, read them, summarize them in the form of points and plan their article reports.</td>
</tr>
<tr>
<td>Writing</td>
<td>Each pair of students had to write the first draft of their article report, using their summaries.</td>
</tr>
<tr>
<td>Google Docs Groups</td>
<td>The instructor created five Google Docs groups and invited the students to join them. Students were asked to post the first drafts of reports.</td>
</tr>
<tr>
<td>Feedback and Editing</td>
<td>Teacher provided feedback on the original drafts, while students responded, discussed, revised their drafts and emailed them to the instructor (1st drafts).</td>
</tr>
</tbody>
</table>
on the various elements of a report and the maximum word limit (1500). The writing stage involved
the learners in each pair in organizing and developing their thoughts, ideas and summaries into first
drafts of their reports. This was followed the instructor setting up the Google Docs groups (see the
sample in Figure 1) and sharing each group with its respective learners through email. Each pair
of students had to upload their first draft of report writing in their Google Docs page.

The Google Docs feedback and peer editing sessions started from 1 February to 30 April 2018.
During this stage, the learners received corrective feedback through Google Docs comments from
the instructor and peers. In each pair, the two students received feedback from the instructor and
each one provided and received feedback from the other peer. They also had to read the feedback
and draft their writing several times by adding, removing, replacing, ordering and correcting errors
and issues in their reports till reaching the final version that was read again by the instructor and
approved as the last version to be printed out and submitted for assessment. At this stage, the lear-
ners and the instructor were present online for two hours a week (Saturday evening) for feedback and
peer editing. However, due to the time restriction of the weekly scheduled sessions, the learners
were allowed to work on editing at any other time during the week that suits them. This generated
more feedback and multiple drafts and changes to text.

3.4. Data collection and analysis
The present study used four types of data: the instructor’s observation of the activities supported via
Google Docs, the learners’ comments via Google Docs, the students’ text revisions via Google Docs
and their responses to the questions in the follow-up interview. For the comments and text revisions,
these two types of data were automatically stored in the Google Docs pages of the five pairs and
accessed by the instructor. For the follow-up interview, the students were interviewed individually
(10–15 min for each participant) by the instructor at the end of the academic semester. They were
asked several questions (Appendix 1) seeking their reflection on Google Docs-supported practices
in the writing course.
The present study used a macro-level qualitative analysis of the activities supported by Google Docs. This analysis focused on the way Google Docs supported writing instruction. From this initial analysis, we identified three practices: feedback, peer editing and responding to feedback. Then we used a micro-level analysis of each practice. For the instructor and peer feedback, a qualitative content analysis of the foci of feedback was used (Bradley and Thouësny 2017). The same content analysis was used for analysis of the learners’ changes to text revisions in terms of focus. From the analysis of both practices, the foci of feedback and text revisions identified are global: content, organization and coherence, and local: language and conventions.

For the observation notes and the transcripts of the follow-up interviews, both sets of data were analyzed using a thematic analysis that enables searching for and identifying meaningful themes from interviewees’ voices. First, the data was coded based on the findings of the above data analyses. It was found that most of the data supports the above analysis of comments and text revisions. However, for the remaining part of the data, it was analyzed by referring to the literature review of previous research on learners’ perception of Google Docs in writing and also inductive coding which could assist in identifying new themes emerging from the data itself rather than based on the literature review. This process was ended with identification and definition of four main themes. All themes and sub-themes with samples from the instructor’s comments, learners’ comments and text revisions through Google Docs as well as their responses in the interviews are provided in the next section of the findings. Finally, the above-mentioned categories of instructor and peer feedback as well as text revisions or changes made by the learners were quantified using a simple quantitative analysis, including the number and percentage of each category.

4. Results

4.1. The potential of Google Docs in facilitating pedagogical practices in writing

The macro-level qualitative analysis of the data revealed three different ways in which Google Docs facilitates writing instruction in the writing course investigated in this study. The three ways are discussed with samples from the data under the following themes:

4.1.1. Engaging teacher and learners in feedback on writing

Based on our findings, the Google Docs instructor of the writing course could make a good use of Google Docs as an interactive platform for teaching writing where the learners were able to exchange feedback and correct their written texts. The micro-level analysis of the instructor’s and learners’ feedback comments on writing exchanged via the Google Docs pages identified various patterns of corrective feedback. The qualitative analysis that embarked on the foci of feedback revealed that Google Docs assisted the instructor and learners to target issues in article reports written by the five pairs of students at the global and local level. The teacher and peer feedback focused on global issues in writing: content, organization and coherence, and local issues: language and conventions. The following samples in Table 3 illustrate how Google Docs-based feedback provided by the instructor and learners targeted global and local issues in writing:

<table>
<thead>
<tr>
<th>Foci of Feedback</th>
<th>Instructor Feedback</th>
<th>Peer Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Issue</td>
<td>Instructor: Can you write all as one coherent paragraph rather than listing them in points?</td>
<td>S1-G1: Apart from that, the author only focuses on the challenges faced by the EFL learners in the introduction. Perhaps, the author could suggest to help the learners in using English.</td>
</tr>
<tr>
<td></td>
<td>S1-G2: The main verb of the sentence in the past? So what is the past of the verb ‘will’ which indicates a past tense?</td>
<td></td>
</tr>
<tr>
<td>Local Issue</td>
<td>Instructor: A missing word after hypothesized because such verbs also e.g. reported, stated etc. need such a word here!</td>
<td></td>
</tr>
</tbody>
</table>
Quantification of the instructor and peer feedback exchanged through Google Docs provides an interesting insight into the intensive engagement of the instructor and the learners in feedback on writing (Table 4). The instructor and peers posted an overall number of 837 feedback comments on writing via Google Docs. First overall, the teacher and peer feedback focusing on local issues (517, 62%) outnumbered the feedback focusing on local issues (320, 38%). This result indicates that most of the issues detected in writing were global issues related to content and organization of ideas. Therefore, most of the feedback focused on such global issues.

Secondly, in comparing between the instructor and peer feedback, it is interesting that the peer feedback (491, 59%) outnumbered the teacher feedback (346, 41%). More interestingly, the learners posted a higher number of feedbacks focusing on global (185, 22%) and local issues (306, 37%) than that of global (135, 16%) and local (211, 25%) oriented feedback posted by the instructor. This indicates that Google Docs is conducive to learners’ engagement in peer feedback on writing. Moreover, such finding could be attributed to the time factor as instructors may tend to have time restriction and are busier with other classes and work duties.

The above peer feedback exchanges (491 overall) were also quantified for the purpose of determining the number and percentage of feedback exchanged in each pair of students. Distribution of the number of peer feedback across the five pairs is provided in Table 5. The results illustrate that among the five pairs or groups of students, the students in Group 1 exchanged the highest number of peer feedback on their writing (137, 28%), 82 (17%) of which focused on local issues, while 55 (11%) focused on global issues in writing. This is followed by group 5 that exchanged an overall number of 114 (23%) feedback distributed as global (41, 8%) and local (73, 15%) oriented feedback. Group 4 scored the third highest level of engagement in peer feedback through Google Docs as indicated by the overall number of peer feedback (81, 17%) that focused on global (34, 7%) and local issues in writing (47, 10%). The last two pairs or groups are Group 2 and Group 3 with almost closer overall numbers of peer feedback (80, 16% and 79, 16%, respectively).

The above results show that when the learners’ feedback was quantified in isolation from instructor feedback each pair of learners posted a higher number of feedbacks focusing on local issues than feedback focusing on global issues. This means that the learners tended to focus on local issues as opposed to the instructor. Moreover, such results suggest that the learners differ in their abilities in detecting and providing feedback on global issues in their written texts and they most often resort to commenting on local issues.

### 4.1.2. Engaging learners in peer drafting and editing of writing

In this study, it was observed that the learners engaged in multiple peer drafting and editing of writing. In this regard as shown in the sample print screen of Group 4 Google Docs page in Figure 2, there are different affordances of Google Docs (editing, drafting or revising and tracking changes), which were exploited apparently usefully by the participants of the current study. Moreover, with the feature of automatic storing of changes and restoring of versions, the learners became able to trace the

<table>
<thead>
<tr>
<th>Foci of Feedback</th>
<th>Instructor Feedback</th>
<th>Peer Feedback</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Issues</td>
<td>135 (16%)</td>
<td>185 (22%)</td>
<td>320 (38%)</td>
</tr>
<tr>
<td>Local Issues</td>
<td>211 (25%)</td>
<td>306 (37%)</td>
<td>517 (62%)</td>
</tr>
<tr>
<td>Overall</td>
<td>346 (41%)</td>
<td>491 (59%)</td>
<td>837 (100%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Foci of Feedback</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G4</th>
<th>G5</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Issues</td>
<td>55 (11%)</td>
<td>31 (6%)</td>
<td>24 (5%)</td>
<td>34 (7%)</td>
<td>41 (8%)</td>
<td>185 (37%)</td>
</tr>
<tr>
<td>Local Issues</td>
<td>82 (17%)</td>
<td>49 (10%)</td>
<td>55 (11%)</td>
<td>47 (10%)</td>
<td>73 (15%)</td>
<td>306 (63%)</td>
</tr>
<tr>
<td>Overall</td>
<td>137 (28%)</td>
<td>80 (16%)</td>
<td>79 (16%)</td>
<td>81 (17%)</td>
<td>114 (23%)</td>
<td>491 (100%)</td>
</tr>
</tbody>
</table>
changes. As shown in the right side of the print screen, the multiple drafts of the article report by Group 4 suggests how Google Docs facilitates a systematic storage of the multiple drafts which are stored historically or according to times and dates made by the learners. This also allowed the instructor to follow and trace the dynamic changes made by the learners in each pair or group.

Our micro-level analysis of the EFL learners’ peer drafting and editing of writing shows how these affordances of Google Docs were useful since they facilitated the learners’ actions or operations in editing their writing. For instance, utilizing these affordances of Google Docs, the learners could add, delete, order and substitute elements at various levels ranging from words, phrases, clauses, sentences and even a group of sentences or entire paragraphs. What is more important about the micro-level analysis of students’ edits and changes to writing is the foci of their revisions made through Google Docs. Since the researcher was interested in knowing how the affordances of Google Docs would be useful for the EFL learners in making revisions that improve their writing, the learners’ texts revisions were coded and identified and also quantified. Concerning this, the learners revised their writing in terms at the global and local levels. For the global text revisions, the students focused on enhancing the content by adding more ideas, deleting irrelevant ones and substituting ideas at the sentence level for clarity. They also revised their writing in terms of organizations of ideas by ordering sentences and even paragraphs and paid attention to coherence through adding linking words or devices. The sample provided in Table 6 copied from the Google Docs shows how S2-G5 and S1-G5 exchanged feedback that resulted into global text revisions, specifically clarity of content or ideas by replacing at the sentence level.

For the local text revisions, the learners paid attention to the use of academic language, specifically grammar and word choice. To achieve this, they added, removed and substituted words and phrases and also re-arranged words and phrases for accurate sentence structures. The learners also revised their writing at the local level in relation to conventions, including spelling, mechanics, citing and referencing. The sample in Table 7 demonstrates how the learners, with the assistance of the instructor implicit feedback (highlighting and ‘mmmm’), made local text revisions, particularly conventions or academic style of writing.

Quantification of the learners’ global and text revisions revealed that the engagement of students in text revisions varied from one group to another. As shown in Table 8, the learners made an overall number of 504 text revisions, most of which (344, 68%) focused on writing at the local level, whereas...
160 (32%) of the text revisions were oriented towards the global improvement of their writing, that is the content, organization and coherence. The results also revealed that the highest amount of text revisions was made by Group 1 with overall numbers of 132 (26%) focusing on global (41/8%) and local (91/18%) areas of writing. Group 5 is the second group that made the second highest number of text revisions (120, 24%), 81 (16%) of which focused on local issues and 39 (8%) of the text revisions focused on global issues in writing. This is followed by Group 3 and Group 2 with overall numbers of revisions (88, 17% and 83/17%) that are close to each other. The last group scoring the lowest number and percentage of text revisions is Group 4 which made 81 (16%) text revisions oriented towards global (24/5%) and local (57, 11%) areas of writing.

4.1.3. Engaging learners in responding to feedback

The feedback comments discussed above are initiations. Moreover, the learners engaged in responding comments. Our analysis of the learners’ responses to feedback via Google Docs revealed that in general the learners were active in responding to the instructor and peer feedback. Their responses to feedback varied from confirming understanding, agreeing, disagreeing, clarifying and even questions asking clarification and explanation. However, our analysis of students’ responses to feedback was not intended to identify the various categories and the foci of responses, but to see how the students responded and the extent to which they were involved in turn taking via Google Docs. Three ways in which the students responded to feedback initiations were identified: one reply comment, multiple reply comments, resolved and null reply comments. The previous examples in Tables 5 and 6 show students’ responses to feedback through one reply comment and multiple reply comments, respectively. The following example shows the resolved response by the students in responding to feedback. This resolve indicates that the student accepted the suggestion and integrated it into his text revision:

Table 6. A sample of peer editing of writing at the global level.
The authors in all three articles mentioned clearly information about the participants.

<table>
<thead>
<tr>
<th>S2-G5</th>
<th>12:11 AM Apr 21</th>
</tr>
</thead>
<tbody>
<tr>
<td>What if you re-write this sentence in a better way without repeating samples and participants as well as information? and use ‘such as’ and connect it with the second hanging sentence from ‘geographical, etc?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>S2-G5</th>
<th>12:17 AM Apr 27</th>
</tr>
</thead>
<tbody>
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<td>Good but one minor thing about ‘Such’ i will fix t now.</td>
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It was found that out of 837 feedback comments, 520 comments were responded to by the students through reply comments, 172 of them were responded to by the students through resolved and the remaining 145 feedback initiations were not responded to by the students. This result is encouraging since it indicates that the students could effectively use the interactivity of Google Docs for peer review of writing.

4.2. Students’ views of Google Docs supported pedagogical practices in writing

The thematic analysis of the learners’ voices in the follow-up interview revealed interesting findings which are presented in the form of four main themes and several sub-themes with sample experts extracted from the transcript of the interviews (Table 9). In general, the learners expressed their positive views of the pedagogical practices supported and facilitated by Google Docs. More specifically, all the learners acknowledged the value of feedback through Google Docs. As they received feedback from the instructor and peers, the learners could detect or identify the global and local issues in their
writing of article reports. Moreover, as they provided feedback, they could also feel that they active learners in the learning process.

When they were asked about whether they preferred instructor or peer feedback, four of the learners stated their direct preference for instructor feedback and justified this preference by stating that instructors are experts in writing. However, six of them seemed to be aware of the importance of both instructor and peer feedback. They appreciated instructor feedback as feedback given by an expert, but they also appreciated peer feedback for it complements instructor feedback.

The EFL learners had also positive views of Google Docs application to collaborative writing and editing. In this regard, seven students recognized the potential of Google Docs in collaborative writing and editing for it is convenient for them to work in pairs in editing their writing. Another important feature of Google Docs that was perceived by the learners is editing-traceable. That is, they could see, observe and track the changes made to their writing. Moreover, they could also highlight the changes and edits of writing. It was interesting that most of the voices of the EFL learners in the interview are indicative of the interactive feature of Google Docs. In other words, the students perceived Google Docs as an interactive tool for they could interact with the instructor and each other in each pair through comments of Google Docs. Most of the above sub-themes support the earlier findings obtained from our analysis of the observation and feedback exchanges, responses and text revisions.

| Table 8. Number and percentage of peer text revisions. |
|-----------------|-----|-----|-----|-----|-----|-----|
| Foci of Feedback | G1  | G2  | G3  | G4  | G5  | Overall |
| Global revisions | 41 (8%) | 30 (6%) | 26 (5%) | 24 (5%) | 39 (8%) | 160 (32%) |
| Local revisions  | 91 (18%) | 53 (11%) | 62 (12%) | 57 (11%) | 81 (16%) | 344 (68%) |
| Overall          | 132 (26%) | 83 (17%) | 88 (17%) | 81 (16%) | 120 (24%) | 504 (100%) |

| Table 9. Sample students’ views of Google Docs supported pedagogical practices in writing. |
|-----------------|-----------------|-----------------|-----------------|
| Main themes     | Sub-themes       | Examples from interviews |
| 1. Valuing feedback practices through Google Docs in writing | 1.1. Being able to detect and correct global and local issues in writing | S1-G5: Actually, feedback helped me a lot as I could know I mean my errors in writing like organization and grammar. |
|                 | 1.2. Being able to be active learners | S1-G1: When I provided feedback on my friend, I really felt so good about it because you know I need first to read about that thing and then give my opinions so I felt like active |
| 2. Instructor feedback vs. peer feedback through Google Docs | 2.1. Viewing instructor and peer feedback as complementary | S2-G4: Yes I would say that both are very useful for editing our writing because besides doctor feedback, I got new perspective from my peer feedback. |
|                 | 2.2. Preference for instructor’s feedback | S1-G2: Ah it’s the lecturer feedback. It’s because a lecturer is more experienced than peers. |
|                 | 2.3. A way to get their writing read from an expert’s and reader’s perspective | S1-G4: Yeah I think that as the doctor reads our writing, he knows so he is an expert, but also we need to let our friends read it and give feedback. |
| 3. Affordance of Google Docs for peer editing | 3.1. Convenient for group writing and editing | S2-G5: And Google Docs the group writing and editing was very convenient because both we were working on the same task. |
|                 | 3.2. Editing-traceable | S2-G3: It was very wonderful and I could see the changes to our writing and I also made new changes in different colors. |
|                 | 3.3. Interactive for feedback | S2-G2: One interesting thing also about Google Docs is that we could comment and reply to comments so I mean like interactions. |
| 4. Challenging concerns | 4.1. Technical like net | S2-G3: You know sometimes, when the net is slow and it is difficult to work on Google Docs. |
|                 | 4.2. Formatting issues | S2-G1: I liked Google Docs, but before the end of our work, the format became annoying for me. |
|                 | 4.3. Lack of skills and experience in using Google Docs at the initial stage | S2-G4: Sometimes, I did not respond to comments, but I read and revised our writing because it was my first time to use Google Docs. |
Despite the value and appreciation of Google Docs supported and facilitated pedagogical practices in writing, a few students perceived it somewhat challenging due to the slow internet connection. Most of the participants admitted that after finalizing editing their reports, they had to work again on formatting their last drafts to be submitted to the instructor as part of their performance evaluation in the writing course. Finally, two of the students seemed to lack the necessary skills involved in using Google Docs especially at the initial stage of peer editing as they were observed to delete the instructor’s comments and did not know that they could respond to the comments through Google Docs.

5. Discussion

The purpose of the current study was to explore the potential of Google Docs in facilitating and supporting writing instruction in an EFL writing course. Focusing on Google Docs as practiced by the instructor and learners and perceived (only by learners), the study provided interesting findings indicating that one of the potentials of Google Docs is that it supports feedback practices. Feedback, when approached from the process approach to writing (e.g. Ferris 1997; Leki 1991; Zamel 1985) and sociocultural theory (Vygotsky 1978), plays an important role in assisting learners to detect various issues in writing, scaffold each other and refine and draft their writing. In this study, instructor and peer feedback served as a kind of assistance for the EFL learners in editing their writing. This also corroborates the evidence on the potential of Google Docs for teachers’ and learners’ feedback practices (e.g. Godwin-Jones 2008; Semeraro and Moore 2016; Woodard and Babcock 2014). Our findings also support the results of a few other studies in terms of peer feedback through Google Docs helping learners to discuss both global and local issues in writing (Bradley and Thouësny 2017; Woodard and Babcock 2014).

The findings of the present study indicate that Google Docs facilitates writing instructional practices, particularly collaborative writing. It facilitates learners’ editing of writing (Conner 2008; Perron and Sellers 2011; Riley-Huff 2010). As in this study, peer editing through Google Docs also allows learners to contribute to the written text (Gillow-Wiles and Niess 2015), automatically save the corrections/changes to the text and trace back the various versions/drafts of the text through its history (Yang 2010). The findings of this study are in agreement with some previous studies on the role of peer editing through Google Docs in learners’ refinement of their texts in relation to global issues such as content (Ebadi and Rahimi 2017; Semeraro and Moore 2016; Ströbl 2014; Woodard and Babcock 2014), organization of ideas (Ebadi and Rahimi 2017; Semeraro and Moore 2016), language (Ebadi and Rahimi 2017; Semeraro and Moore 2016; Woodard and Babcock 2014), citations (Woodard and Babcock 2014) and conventions of writing (Semeraro and Moore 2016).

The voices of the EFL learners in the interview support the above findings, especially the potential of Google Docs in allowing them to refine their writing and feel active by receiving and providing feedback on writing. This finding is somewhat similar to what was reported by some studies (Ebadi and Rahimi 2017; Hedin 2012; Suwantarathip and Wichadee 2014; Woodard and Babcock 2014). However, our finding on feedback practices through Google Docs adds to our understanding that while the EFL learners valued instructor feedback, they acknowledged the importance of peer feedback. This indicates that assistance in writing should not be given only by teachers, but also by peers (Bradley and Thouësny 2017; Ebadi and Rahimi 2017; Saeed and Ghazali 2017; Semeraro and Moore 2016; Slavkov 2015; Villamil and de Guerrero 2006).

Our investigation of the EFL learners’ views of Google Docs-facilitated writing instruction adds to our understanding of the facilitative features of Google Docs that make it a useful tool for editing. First, it is convenient for group or pair work, especially at collaborative writing, peer editing of writing, which is similar to what was found in earlier research (Brodahl, Hadjerrouit, and Hansen 2011; Ebadi and Rahimi 2017; Krajka 2012; Yang 2010). In addition, Google Docs enables the instructor and learners to highlight and trace the changes in their writing (Chu and Kennedy 2011; Gillow-
Wiles and Niess (2015) and it serves as an interactive tool for peer feedback where learners can respond to feedback (Bradley and Thouësny 2017).

Although Google Docs supports and facilitates innovative writing instructional practices, it sometimes poses challenges for learners that may affect their positive views of this tool in writing. As in this study, the EFL learners seemed to be challenged by their lack of skills in using it, the slow internet-connection and formatting issues. Yet, such challenges do not seem to be serious. In this study, we have learnt that besides training and instruction on the activities given at the earlier stage of the study procedure, constant instruction and observation of learners’ practices in writing using Google Docs appear important in motivating and enabling them to pursue their activities and achieve the intended aims of such technological applications in writing classrooms.

6. Conclusion

This study has several limitations that should be addressed in combination with useful implications for future research. First, this study involved a small number of EFL learners in the writing activities supported by Google Docs. Therefore, future studies are recommended to investigate the use of Google Docs among a larger number of EFL learners. Secondly, the study was limited to students’ peer editing of writing, which is the last stage of the process approach, so future research should aim to provide a comprehensive investigation of the entire process of writing starting from idea generating or planning, writing to editing. Analysis of the learners’ text revisions in this study was also exclusive to identification of the edits or changes the learners made to their writing through Google Docs. However, for future researchers interested in the impact of Google Docs-based peer editing on learners’ writing, they should include evaluation or assessment of students’ first drafts and last drafts of writing. Although this study quantified the peer feedback and text revisions to compare among the five pairs of the EFL learners, it was not intended to look at this for each individual learner. Future studies could trace each individual learner’s contribution to the text through Google Docs. Future studies may also explore the ways learners collaborate or work together on editing a single text.

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References


Appendix A

(1) What did you find useful about writing and editing using Google Docs in this course?
(2) How did the instructor and peer feedback help in writing? Explain.
(3) What did you focus on when providing feedback on your peers? Why?
(4) Which do you prefer instructor or peer feedback? Why do you say so?
(5) Any special features that you liked about using Google Docs for editing? Explain.
(6) Did you face any challenges in using Google in peer editing? Explain if any.