Using Google Docs in Omani EFL College Classes: Students' Writing Performance and Perceptions towards Use

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Abstract

This quasi experimental study aimed at investigating the effect of using Google Docs on EFL Omani college students' writing performance and students' perceptions of its use. The sample of the study included 81 Level 3 Foundation Program students in Nizwa College of Technology, Oman. The experimental group consisted of 39 students while the control group consisted of 42 students. The research instruments included a writing performance test that was administered as pre and post- test and a students' perceptions questionnaire. Data analysis revealed that there was a statistically significant difference between the writing performance of the experimental and control groups in favour of the experimental group. The experimental group outperformed the control group in task achievement, task organization, grammar and vocabulary. Also, the students perceived using Google Docs in EFL writing as

a very beneficial tool in improving their writing and collaboration skills. In light of these findings, a number of recommendations for practice are presented.

Keywords: Web-based learning, Google Docs, Online collaborative writing, Oman, EFL college students

1. Introduction

Web-based instruction provides a promising environment for improving students' writing skills (Al Abri, 2009; Fuccio, 2014; Suwantarthip &Wichadee, 2014). There are many web-based tools that facilitate the process of writing and at the same time promote the social skills of the learners. When students are engaged in online writing activities, they discuss ideas with others and get constructive feedback about their writing from their peers and their teacher. This helps to improve their writing performance (Noytim, 2010). Additionally, online learning strategies, such as note-taking are very effective in language learning. Students take online notes about their peers' essays including information about the writing topics and the organisation of paragraphs. Sharing such notes helps students refine their own language knowledge and composition skills (Yang & Lin, 2015). In this way students indirectly develop critical thinking and collaboration skills as well as their writing abilities.

Google Docs is a promising web tool that can increase students' writing performance. It allows students to write their essays online, share them with teachers and peers and get feedback instantly. This process of editing and commenting teaches students how to analyse their own writing, how to correct their errors and how to develop a better understanding of the writing process. A number of researchers have investigated the impact of using Google Docs on students' writing skills and have reported positive gains in writing skills and in students' learning process in general(Ishtaiwa & Aburezeq, 2015; Lin & Yang, 2013; Seyyedrezaie, Ghonsooly, Shahriari, & Fatemi, 2016; Suwantarathip & Wichadee, 2014).

Although there is an increasing emphasis on the importance of integrating online learning in the Omani educational system, little effort is directed to the use of web-tools for enhancing students' learning, particularly language learning in Oman. In addition to that, higher education institutes face challenges in training their students on successful communication and collaboration so that they become competent employees in the future. According to previous research, many new employees struggle to use English to communicate and collaborate and, therefore, find it hard to fulfil their given roles efficiently (Al Mahrooqi & Denman, 2016). Thus, higher education colleges need to instil solid language, collaboration, critical thinking and communication skills within their learners.

In the Omani context, the Ministry of Education takes into consideration the importance of technology in education nowadays. The reform in the Omani educational system in 1998 was a result of various changes in society, among them was the increasing use of educational technologies. Students are expected to know how to use different technological applications and how to apply the appropriate tools to solve problems (Directorate General of Curriculum Development, 2010). Many higher education colleges and institutions in Oman have established e-learning systems to follow the global trend of applying ICT in education. Most of the applied web-based tools are used mainly to manage learning and teaching, including the sharing of course documents with students, sending reminders and setting quizzes. This

means that higher education colleges have barely started to tap the potential of web tools, and therefore more practice should be directed at maximizing the actual learning process, for example, incorporating web tools in students' collaborative activities and projects.

With regard to the writing skill in Omani schools and colleges, many students complain about the difficulty of the writing skill and their inability to write well-polished compositions. Previous studies support these worries and indicate that Omani students have many concerns when it comes to the writing skills (Al Mamari, 2015; Al Seyabi & Tuzlukova, 2014). Using Google Docs might help reduce such problems with writing (Fuccio, 2014; Suwantarthip & Wichadee, 2014). The synchronous collaborative brainstorming provides students with plenty of ideas and would, thus, help trigger thoughts in their minds. Additionally, the online discussions about the organisation of the text would help increase students' confidence in the flow of their writing. Most importantly, the instant collaborative feedback received through Google Docs is a tool that helps students to edit and revise texts. Seeing how other students write and how they develop their sentences will inform students about how people use language to put their ideas into words (Seyyedrezaie et al., 2016; Suwantarathip & Wichadee, 2014). Also, it provides a rich environment to promote the 21st century skills needed in the workplace (Noytim, 2010).

Moreover, there is a dearth of studies that investigated the impact of web-based tools on the teaching and learning of English language, particularly in the writing skill in the Omani context. However, the studies that looked at the effect of using online instruction on students' writing performance in the past few years in Oman have shown that it can improve students' writing abilities (Al Abri, 2009; Al Mamari, 2007; Al Rawahi, 2013). Based on recommendations made in previous studies and because of the benefits and useful features of Google Docs in enhancing students' writing and personal skills, this study attempts to expand our current knowledge about the effectiveness of web-based tools in English language learning by investigating the impact of using Google Docs in students' writing performance at the college level.

2. Literature Review

2.1 Background

The new generation of the web (Web 2.0) was introduced in the field of ICT in 2005. McLoughlin and Lee (2007) define Web 2.0 as "a second generation, or more personalized, communicative form of the World Wide Web that emphasizes active participation, connectivity, collaboration and sharing of knowledge and ideas among users." (p. 664). Web 2.0 applications, including blogs, wikis, Really Simple Syndication (RSS), podcasting, social networking sites and peer-to-peer media sharing utilities, attract the attention of many educational institutes because of their ability to address the learners' needs by customising, personalising and offering rich experiences for collaboration and sharing. These web tools offer an opportunity to shift from the centralised industrial model of learning of the past decades to a more individualised learning experience by offering collaborative and networked interactive learning settings. Therefore, web-based instruction is popular in today's education as it accommodates various learning theories and approaches.

Web-based tools fit in within the social constructivist view as they enable students to interact

and communicate in diverse online communities by sharing ideas, generating feedback, socialising with other cultures and expanding their views about real world issues (Beatty, 2003). It is through dialoguing in chat rooms, commenting on blogs, collaborating on wikis and expressing themselves in e-portfolios that learners are able to develop as members of their learning community to create a shared understanding and to challenge and question the key issues of their area of study (Mason & Rennie, 2010). Likewise, they get the opportunity to be producers of content rather than receivers of content. In web-based environments, learners get the chance to improve their creativity and co-construct new knowledge. They have access to experts worldwide and an opportunity to interact in authentic environments through which they reach a wider audience (Conole & Alevizou, 2010).

2.2 Google Docs

Google Docs is a free web-based tool that helps students to be active learners and improve their writing collaboratively. It was launched by Google in 2006 and it allows users to create word documents online and edit them, share those documents with others to edit the document together at the same time, comment and chat with collaborators to modify ideas and information and save the documents for offline work ("How to use Google Docs", n.d.). Google docs provides a platform where students can construct knowledge together in a simultaneous context. Students generate ideas together and revise their input collaboratively.

Many empirical studies reported the benefits that students gain when using Google Docs in their writing (Fuccio, 2014; Seyyedrezaie et al., 2016; Suwantarathip & Wichadee, 2014). Fuccio (2014) conducted an action research to explore the effect of using Google Docs on L2 writing feedback. The findings of the study revealed that Google Docs played a role in boosting interaction between the teacher and students. For example, the initially static information sheet turned into an interactive space where students made enquiries. The teacher's workload and students' questions about the assignment were reduced as all the students could see and track the questions and answers on the document. Another advantage that Fuccio (2014) reported is an increase in readability and feedback rate. Students were able to correct their mistakes before submitting the final text by viewing others' writing. Many students in this study reported that using Google Docs made receiving feedback easier for them and they admitted that instant feedback, in particular was beneficial because they were able to modify their work faster.

Suwantarathip and Wichadee (2014) conducted a quasi-experimental study to examine the effect of online collaborative writing through Google Docs on students' writing performance. The findings from a writing test administered to students indicated a significant improvement in students' writing performance in favour of the Google Docs group. The researchers attributed this to the interactive features of Google Docs which motivated students to work collaboratively and allowed them to get beneficial feedback from peers and the instructor. Students also reported that the collaborative nature of Google Docs gave them the opportunity to read, revise and edit their peers' texts while the positive feedback helped them "learn about their writing problems such as inappropriate language use, misspellings, wrong mechanics, not understandable text, and illogical organization" (Suwantarathip & Wichadee 2014, p. 154).

It is worth mentioning that studies reported some difficulties when using Google Docs in

learning. Lin and Yang (2013) stated that teachers and students faced some difficulties such as periodically missing data from the screen and lags that could occur when writing online. Some students reported their disappointment when working in Google Docs because the multiple editing hindered their work and made it more difficult (Ishtaiwa & Aburezeq, 2015). Another difficulty that may hinder the implementation of online collaborative writing tools is the differences in students' writing habits (Fuccio, 2014). This indicates how learners' characteristics can affect the implementation of collaborative process-based writing. Ishtaiwa and Aburezeq (2015) pointed that students' lack of teamwork skills prevented them from fully benefiting from the web tool. They put this down to the fact that students did not have clear guidelines for collaborative work and peer editing. Another point to be considered is the students' lack of familiarity with web-based tools. They said that their lack of technological skills hindered their learning through Google Docs.

The present study intends to add to the literature on the area of web-based learning by investigating the use of Google Docs in improving students' writing skills in the Omani educational context.

The present study attempts to answer two research questions: a) Are there any statistically significant differences between the control and experimental groups' writing performance after the latter's use of Google Docs?, and b) What are students' perceptions of the use of Google Docs in EFL writing?

3. Method

3.1 Design

The study adopted a quasi-experimental research design with a control group and an experimental group to investigate the impact of using Google Docs on EFL students' writing performance. It was carried out over 11 weeks during the second semester of the academic year 2017/2018 in Nizwa College of Technology (NCT), Oman.

3.2 Population and Sample

The population of the study was all 329 Level 3 students doing the second semester of the academic year 2017/ 2018 at the NCT. These were all students who finished high school and were enrolled in a foundation program that offered English, Math and IT courses to students prior to their study in their respective colleges. The sample of the study consisted of four intact classes from a pool of 14 level 3 sections. Two sections (42 students) made the control group and two sections (39) formed the experimental group. The four intact sections were chosen based on a Technology Use Survey that was distributed to seven random sections from level 3. After analysing the data from the survey, four sections with the highest means pertaining to technology and web-based applications use were selected to participate in the study. Four teachers taught the four sections. All four teachers were holders of Masters' Degrees and their teaching experience in the NCT ranged from 5 to 9 years. In addition, they all had similar background in the use of technology in teaching and they were all familiar with Google Drive.

3.3 Instruments

Two instruments were used: a test and a questionnaire. In addition, a teachers' guide was developed to help the teachers in the implementation of Google Docs in the writing sessions.

3.3.1 The Writing Performance Test

The writing performance test was developed to measure the effect of using Google Docs on students' writing performance. The test was designed according to the writing test specifications of the NCT for the Foundation Programme. Two parallel versions of the test were designed: a pre-test and a post-test; both out of 25. The test comprised two writing tasks. In task one, students had to write a personal e-mail about a topic that was relevant to their personal experiences and interests. The second asked the students to discuss a topic and express their agreement and disagreement. The test was marked using a marking rubric followed by the instructors in the NCT. This is an analytical marking rubric which assesses students' performance against four clearly defined criteria, namely: task achievement or task response, organisation, grammar and vocabulary.

Both validity and reliability of the test were established. For validity, the researchers asked a jury of 11 experts in the field of education to assess the parallelism of the test's two versions and to ensure the test's appropriateness to the sample of the study. As for reliability, the test was piloted with a group of 10 Level 3 students who were not part of the research sample. Two raters marked the test using the given marking rubric. Cronbach's alpha was computed and the results showed that the marking rubric had a good level of consistency (Cronbach's alpha was .87).

3.3.2 The Questionnaire

A questionnaire was developed to investigate students' perceptions of the use of Google Docs in writing sessions after the intervention was over. The questionnaire was translated into Arabic to make it easier for the students to understand the statements. The questionnaire consisted of two parts. The first part investigated students' perceptions of using Google Docs in the writing classes in terms of its benefits on the writing skill and on enhancing collaboration, sharing and interaction. A five-point agreement Likert scale was used for this section. The second part included open-ended questions that asked students to express their opinions regarding the benefits and challenges of using Google Docs in the writing sessions. The questionnaire was validated by 13 experts who confirmed its relevance and clarity. A few items were modified based on their feedback.

3.3.3 The Teachers' Guide

A guide was developed to provide the instructors who taught the experimental group with information about Google Drive and its features. It also outlined the teachers' and students' roles in the Google Docs writing sessions. Moreover, clear illustrations of how to use and manoeuver the platform were provided, including the features of Google Docs. A sample lesson plan was given with detailed procedures regarding the implementation of Google Docs.

3.3.4 Google Docs

The researchers took into consideration both the writing objectives and the delivery plan of Level 3 English syllabus when planning the implementation of the treatment (using Google Docs) into the syllabus. By doing this, the treatment was not given as a separate objective. This also helped reduce the level of worry instructors might have had about having to implement a totally new treatment within their classrooms.

Students had three writing sessions per week and the duration of each session was one hour and forty minutes. However, during the research period students used Google Docs in only one session out of the three due to the limitations of lab availability and syllabus requirements. During that session, students brainstormed the topic in groups, wrote their drafts and edited one another's writing. After the session, they had two days to continue editing and revise their essays. The same process was followed with the control group. They had one writing session per week in which they started writing their essays in class and revised it outside the class over two days until they had to submit their final draft. The remaining two other lectures were presented to both groups in the regular way of teaching writing.

4. Results

4.1 Impact of Using Google Docs on Students' Writing Performance

At the beginning of the semester and before the training session was run, the writing performance test was administered to both control and experimental groups. Students' results were analysed using an independent sample T-test in order to determine whether the experimental and control groups were homogenous in their writing performance prior to the intervention. Table 1 shows the Independent Sample T-test for the pre-test results of the control group and the experimental group.

Table 1. An Independent Sample T-test for the Experimental and Control Groups' Pre-test Scores (n = 81)

	Group	N	M^*	SD	T	Df	$p. value$
Pre-test	Experimental	39	14.60	2.73	-.077	79	.94
	Control	42	14.65	3.20			

*The total score = 25.

The results from the Independent Sample T-test showed that there was no statistically significant difference in the scores of the experimental group ($M = 14.60$, $SD = 2.73$) and the control group ($M = 14.65$, $SD = 3.20$); $t (79) = -.077$, $p = .94$, (two tailed). This means that the two groups' writing performance was equivalent at the outset of the study. To examine the effect of using Google Docs on students' writing performance, a writing performance post-test was administered to the experimental and control groups at the end of the semester. Table 2 presents the Independent Sample T-test for the experimental and the control groups' scores in the writing performance post-test.

Table 2. An Independent Sample T-test for the Experimental and Control Groups' Post-test Scores (n = 81)

	Group	N	M*	SD	T	Df	p. value
Post-test	Experimental	39	18.95	2.51	3.74	79	.000
	Control	42	16.80	2.66			

*The total score = 25.

The results from the Independent Sample T-test revealed that there was a statistically significant difference in the scores of the experimental group (*M* = 18.95, *SD* = 2.51) and the control group (*M* = 16.80, *SD* = 2.66); *t* (79) = 3.74, *p* = .000, (two tailed) in favour of the experimental group.

The results of the Independent-Sample T-test revealed that the experimental group outperformed the control group in the writing performance post-test, which indicates that writing through Google Docs had a significant impact on students' writing performance. The synchronous collaborative writing and instant feedback through Google Docs provided opportunities for the learners to improve their writing skills. These results are aligned with the results of Suwantarathip and Wichadee (2014) who found that collaborative writing through Google Docs improved students' writing performance. By using Google Docs to share their ideas and to collaborate in developing the content of their essays, the students had better chances to think about their language usage and modify the sentence structure and paragraph organization.

To further explore students' performance according to the four criteria that students' post-test writings were assessed against (task achievement, organisation, grammar and vocabulary), an Independent Sample T-test was run (See Table 3).

Table 3. An Independent Sample T-test for the Experimental and Control Groups' Post-test Scores in the writing categories (n = 81)

Category	Group	N	M*	SD	T	df	p. value
Task Achievement	Experimental	39	5.18	.768	3.57	79	.001
	Control	42	4.55	.799			
Organization	Experimental	39	5.33	.706	3.49	79	.001
	Control	42	4.76	.752			
Grammar	Experimental	39	4.30	.659	2.62	79	.011
	Control	42	3.90	.705			
Vocabulary	Experimental	39	4.15	.824	3.52	79	.001
	Control	42	3.59	.611			

*Total mean for each category = 6.25.

As can be seen in Table 3, the means scored by the experimental group were consistently higher than the means of the control group in all four criteria: task achievement, organisation, grammar, and vocabulary. This demonstrates that writing using Google Docs had more significant impact on the students' performance in the writing assessment when compared to the conventional way of writing.

4.2 Students' Perceptions of the Use of Google Docs in EFL Writing

In order to explore students' perceptions of using Google Docs in the writing skill, the students' perceptions questionnaire was distributed to the students in the experimental group after the intervention was over. In general, students had a positive perception of the use of Google Docs in the writing sessions. The total mean for all the statements was high (M= 3.97, SD= .363). This proves that the students felt that they had benefited from using Google Docs and that they believed that it was a useful tool to use in the writing courses. Particularly, 12 statements focused on students' perceptions of the benefits of using Google Docs in the writing skills (See Table 4).

Table 4. Means and Standard Deviations of Students' Perceptions of the Benefits of Using Google Docs in the Writing skills (n=37)

Item	M	SD
1. Google Docs gave me the opportunity to improve my writing skills.	4.35	.716
2. I enjoyed writing using Google Docs.	4.30	.740
3. Using Google Docs to brainstorm ideas with others gave me more ideas about the topic.	4.27	.652
4. I had the opportunity to improve my writing ability by reviewing others' writings.	4.16	.646
5. My teacher's feedback through Google Docs helped me improve my writing.	4.16	.646
6. Using Google Docs made me like the writing sessions more.	4.11	.936
7. Using Google Docs with others helped me organise my paragraphs in a better way.	4.05	.815
8. Using Google Docs to write essays helped me increase my vocabulary.	3.92	.759
9. Writing through Google Docs motivated me to write longer essays.	3.84	1.068
10. I can use the English language more confidently when giving feedback to others on their writing.	3.76	.830
11. Getting feedback from others using Google Docs helped me improve my grammar.	3.68	.784
12. I feel more comfortable giving feedback to others using Google Docs compared to face-to-face mode.	3.54	.900

As can be seen in the table above, the means of the statements ranged between 3.54 and 4.35, which indicates that overall students had positive perceptions of the benefits of using Google Docs in enhancing their writing skills. The highest mean (M=4.35, SD= .716) was received by the statement, "Google Docs gave me the opportunity to improve my writing skills", which illustrates that the students benefited from using Google Docs in their writing. Also, the results indicated that the students enjoyed using Google Docs when writing their essays (M=4.30, SD= .74). Collaborative brainstorming (M= 4.27, SD= .652), reviewing others' writings (M=4.16, SD= .646) and teacher's feedback sent through Google Docs (M=4.16, SD= .646) also helped the students to focus on their writing and develop better ideas. However, the statement, "I feel more comfortable giving feedback to others using Google Docs compared to face-to-face mode" had the lowest mean among all the items that explored the benefits of Google docs (M= 3.54, SD= .900). Students were used to face-to-face interaction during the classes and it seemed that shifting the interaction to online tools was new to them; students needed more time to become accustomed to the new writing classroom dynamics (Fuccio, 2014). The second lowest statement was "getting feedback from others using Google Docs helped me improve my grammar." The mean for this statement was 3.68. Although the students received some feedback concerning their use of verbs and sentence structure, some were not sure if this feedback enriched their grammatical knowledge and use, especially when that feedback came from peers.

4.3 The Benefits of Using Google Docs on Collaboration and Interaction

Table 5 illustrates the means and the standard deviations of students' perceptions of using Google Docs in the writing sessions with regard to the benefits gained in other aspects of learning such as collaboration, sharing ideas and interaction.

Table 5. Means and Standard Deviations of Students' Perceptions of the Benefits of Using Google Docs in Collaboration (n=37)

Statement	M	SD
1. Using Google Docs gave me the opportunity to share ideas and information with others.	4.57	.502
2. Using Google Docs improved my collaboration skills.	4.35	.633
3. Using Google Docs in English classes increases students' interaction.	4.14	.751

The results indicate that the students had very positive perceptions of the benefits of using Google Docs in collaboration, interaction and sharing. The mean scores ranged between 4.14 and 4.57, which fall under high and very high degrees of agreement. Using Google Docs did not only improve students' writing skills but also helped them to collaborate, share and interact more effectively. "Using Google Docs gave me the opportunity to share ideas and information with others" had the highest mean (M= 4.57, SD= .502) among all the questionnaire statements, which reveals that the students found the platform very helpful in sharing information and ideas with other fellow students. The statements, "Using Google Docs improved my collaboration skills" and "Using Google Docs in English classes increases

students' interaction" also had high means (M= 4.35, SD= .633; and M= 4.14, SD= .751, respectively). In the study of Suwantarathip and Wichadee (2014), students expressed similar opinions regarding the power of Google Docs to maximise collaboration and interaction.

The questionnaire also included a statement that examined ease of using Google Docs and another statement regarding students' readiness to use this web tool in the future. Regarding the ease of use, the statement, "I faced difficulties in using Google Docs" had a low level of agreement (M= 2.46, SD= 1.043). This means that the students did not face difficulty navigating and manoeuvring the platform and they were able to use it easily. This fact can be an important reason for the positive perceptions of Google Docs; if the platform had been complicated and hard to navigate, students would have been disinclined to write rather than motivated (Zaid, 2011).

Students' readiness to use Google Docs in the future is a good indicator of the success of the intervention. The statement, "I will use Google Docs in future courses" had a high mean (M= 3.86, SD= .673). This means that the students are eager to use Google Docs in future academic courses.

In addition to the data generated from the statements in part one of the questionnaire, the first question in the open-ended section, "What did you like the most about using Google Docs in the writing classes?", provided more insights about students' points of view regarding the benefits of using Google Docs in the writing sessions. Students highlighted the following benefits:

Enhancing Collaboration and Sharing: Collaboration and sharing ideas and information were reported as the most appealing features of Google Docs. Students believed that this platform can boost group work and is very powerful for collaborative writing, which ultimately made them like writing more. A student stated, "(I liked) sharing ideas with my peers and this improved my writing." Another student said, "(It) taught me how to appreciate others' comments and accept their ideas." This platform enabled the students to be active members in a collaborative environment. This suggests that Google Docs played an effective role in teaching students how to work collaboratively with others, which is an essential skill for 21st century students (Fuccio, 2014; Lin & Yang, 2013).

Facilitating Feedback: Although feedback was at the lowest side of the questionnaire statements, students noted that the comments feature was very helpful. This is because it allowed them to give and get feedback, which helped them to improve their writing. It is evident that the students benefited from the comments that their peers provided. One student said, "the feedback from others helped me to improve my use of grammar." In line with this, Chu et al. (2017) found that students who made more collaborative editing to their group assignments had better writing output in terms of accuracy and quality. Another student stated that, "communicating with the teacher and her encouragement helped me improve my writing." So, words of praise can be very motivating for students and students liked to give encouraging comments to one another.

Improving Language Skills: Another benefit that emerged from data analysis was improvement in language skills. Students reported that this web tool helped them improve their writing, grammar and vocabulary. The "define tool" helped the students to improve their

vocabulary and to learn about parts of speech. Also, it seems that the instant online feedback and the group interaction played a significant role in directing students' attention to their language problems and it allowed them to learn new grammatical structures, as one student stated.

Increasing Motivation to Write: The newness of the experience and the web tool in particular changed the routine of the writing classes and consequently motivated the students to learn and write. One student put this idea very clearly: "The new experience motivated us to learn and changed the routine of the class. Using technology is encouraging." It was also mentioned that Google Docs created an enjoyable atmosphere in the writing class, which increased students' positive attitude to learning writing skills.

Accessibility and Ease of Use: Students stated that because Google Docs is easy to use, it helped them to focus on the process of writing rather than the technical elements of the web tool. This is because students' drafts were accessed from the same location and they could be modified and commented on by both, the teacher and the students (Fuccio, 2014). One student said, "the ease of using (Google Docs) helped me to improve my writing skills and increased my vocabulary." Students who were familiar with other word processors found the platform very easy to use. Moreover, features like automatic saving, the search tool and the define tool were reasons behind finding Google Docs easy to use because they helped the students to save time.

Improving Computer Skills: Interestingly, improving students' computer and technology skills also emerged as an advantage of using Google Docs. Using Google Docs improved students' computer skills, in particular keyboarding skill. A student said, "(Google Docs) helped me improve my typing skills".

4.4 Challenges That Students Faced in Their Use of Google Docs

Besides investigating students' perceptions of the benefits of using Google docs, another open-ended question in the questionnaire sought to identify students' views with regards to the challenges they faced. Students reported the following challenges:

Lack of Technological Skills: Students' poor computer skills emerged as a major drawback that kept students from fully benefiting from the use of the web tool in writing. Keyboarding skills were particularly challenging to the students. However, as the experiment went on, the students felt they became faster with respect to typing. Additionally, the newness of the application was another challenge at the beginning of the study. The students needed time to understand it and learn how to work with the application. One student clearly stated this: "At the beginning I didn't understand the application and how to use it but now I like it very much." Another student reported that the teacher helped her overcome the difficulties that she faced when using the web tool. In fact, the students in the experimental group had some technology skills as the results from the technology use survey - given to the students prior to the intervention – indicated, however, they needed some time to get acquainted with the new web tool. This was presented in previous studies as well. For example, Seyyedrezaie et al. (2016) and Ishtaiwa and Aburezeq (2015) reported that students experienced some difficulties in using Google Docs at the beginning of the course.

Lack of Group Dynamics and Collaboration Skills: Another challenge mentioned by the students was that not all the students were collaborative, and this hindered the process of writing. Moreover, a student mentioned that, "dividing the work among the group members was difficult." Previous studies found that learners' characteristics play a crucial role in implementing online courses (Macdonalnd, 2003) and that learners may become reluctant to participate if the learning tasks do not match their preference and personal traits (Changwatchai, 2006). Also, the absence of students during the session affected the work of the group because the group was not able to finish writing the first draft during the session. Some of the students did not like to receive feedback and others were careless to give feedback to others. Thus, direct training on online collaboration and group interaction might make the process more effective (Changwatchai, 2006). Another solution might be "having marks (for writing collaboratively through Google Docs), so there is more commitment towards its use.

Technical Problems: These problems are classified into problems during the writing sessions and outside the sessions. Computer breakdowns and slow internet speed caused some troublesome during the writing classes. Phrases like, "the internet was very slow", "computer did not work", were commonly mentioned by the students. In most cases, the teachers were able to handle such problems with the help of the lab technician. Also, not being able to interact outside the session was a challenge for the students either because some students did not have a computer at home or because reliable internet connection was not available everywhere. Asking students to work through a mobile application and giving the students 2 days after the session to submit their work helped mitigate such drawbacks.In point of fact, technical problems are a prominent drawback in any online learning setting as noted by many researchers in the field of educational technology (Al Rawahi, 2013; Al Siyabi, 2016).

Lack of Time: Students were bounded by time to complete their essay writing in class since many students did not have internet connection at home. Therefore, finishing their writing during class time was the only solution for those students, a solution that was not always feasible. A student stressed, "the time is not enough to create files and write through Google Docs," and another said, "Doing a lot of work in a short time (was a challenge). Previous studies have also mentioned time constraints as a challenge in many experimental studies conducted in the area of online learning (Al Mamari, 2007; Al Rawahi, 2013).

Poor Language Skills: Poor language ability prevented the students from interacting through Google Docs. A student stated, "(I faced difficulty) in using the program because of my English language." Another student stated, "I don't have the language ability to give feedback on my peers' writing." So, they preferred not to comment because they were not confident about their linguistic abilities. Al Rawahi, (2013) pointed out that the students did not provide a lot of constructive feedback because of their modest language proficiency. Yet, during the researchers' chats with the participants in the classroom visits, students said that, although they were not confident about their linguistic competence, they did not fear making mistakes and they tried to comment and encourage their friends. These students might have been high achievers or students who had high self-confidence, however, this might not be the case for low achievers or shy students who were struggling to express themselves in English as students tended to give less feedback on their peers' writing who were more linguistically

competent than them (Allen, 2015).

5. Discussion

The findings of this study showed that there was a statistically significant difference in the writing performance of the control and the experimental groups in favour of the experimental group. This finding is in line with the findings of previous research (Seyyedrezaie et al., 2016; Suwantarathip & Wichadee, 2014). In their study, Suwantarathip and Wichadee (2014) pointed out that the collaborative features of Google Docs motivated students to work with others and facilitated the feedback process from peers and the teacher. This was also the case in this study. Because Google Docs is collaborative in nature, it maximised the sharing of ideas in the brainstorming stage and getting feedback in the revision and editing stages, ultimately improving the final piece of writing that students produced. In the long run, this experience improved the students' scores in the writing performance post-test, as could be seen in the results.

Additionally, writing through Google Docs enhanced students' writing in terms of organisation, grammar and vocabulary. The experimental group outperformed the control group in the task achievement, task organisation, grammar and vocabulary. This finding matches the conclusions drawn by other researchers such as Al Abri (2009) who found that students who used online writing performed better in task achievement than students who used the regular way of writing. Al Rawahi (2013) also reported that students who used online collaborative platforms outperformed their peers in the control group in the categories of grammar, organisation and vocabulary. In fact, the instant feedback is an important factor that might have led to these positive findings as it allowed the students to think about their language errors, learn new words and better organise their paragraphs. This conclusion is in line with Suwantarathip and Wichadee's (2014) findings about using Google Docs in the writing lectures. They found that the constructive feedback received through Google Docs allowed students to think about what they had written thoroughly in terms of language, organisation and nature of the task.

Students in this study held positive attitudes to using Google Docs in the writing classes. They believe that Google Docs made the writing classes more enjoyable and improved their writing skills in many aspects. Online brainstorming, collaborative editing and feedback helped them to improve their essays. This echoes what previous research reported (Lin & Yang, 2013; Seyyedrezaie et al. 2016; Suwantarathip & Wichadee, 2014). Besides benefits gained in the language skills, students believe that Google Docs enhanced their collaboration and technology skills as well. Students in Lin and Yang's (2013) study said that interacting with other students through Google Docs gave them an opportunity to improve their language and personal skills. Also, Ishtaiwa and Aburezeq (2015) reported that using Google Docs stimulated information sharing, learning from peers and teacher-student interaction.

Furthermore, this study also reported the different challenges the students faced during the experiment. These challenges included technical problems, lack of technology skills, lack of language skills, lack of collaboration skills, time constraints and the difficulty of some writing tasks. These challenges were mentioned in previous studies that investigated online learning tools (Changwatchai, 2006; Fuccio, 2015; Ishtaiwa & Aburezeq, 2015; Lin & Yang, 2013; Seyyedrezaie et al. 2016).

To improve the implementation of Google Docs in the writing classes, the students said more training is needed, more Google Docs writing sessions are important, improving the internet speed is crucial and using the mobile application is useful. This is in line with what other research studies recommended (Al Rawahi, 2013; Changwatchai, 2006; Ishtaiwa & Aburezeq, 2015).

6. Implications

The study revealed that using Google Docs in collaborative writing had a significant impact in improving students' writing performance. Therefore, English language teachers can make use of Google Docs in their teaching of writing skills as it is a powerful tool that can be used to enhance such skills. Also, since higher education institutes face several challenges in developing students' language and personal skills, they can integrate tools such as Google Docs in the syllabus as they have been found to promote language, personal and technology skills. They can use Google Drive to deliver course materials and manage students' course work and for students' collaborative projects. Similarly, teachers of other subjects can benefit from the findings of this study and integrate Google Docs in their classrooms. The findings of this study also provide an important recommendation for Oman's Ministry of Education in urging the policy makers to implement projects that integrate web tools in the classrooms.

Another implication lies in the importance of training for both teachers and learners. It is important to equip today's teachers with knowledge of how they can successfully blend web tools to achieve the learning outcomes and facilitate the learning process. Likewise, students need adequate training in using web tools such as Google Docs to be able to interact with and use the web tool effectively. It is also important to train students on collaboration and interaction with others before implementing web tools that require collaborative skills.

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