

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

The Incorporation of Computer-Assisted Peer Feedback in the L2 Classroom

A graduate project submitted in partial fulfillment of the requirements
For the degree of Master of Arts in Teaching English as a Second Language

By
Maribel Garcia

May 2019

The graduate project of Maribel Garcia is approved:

Anna Dina L. Joaquin, Ph.D.

Date

Stephanie H. Kim, Ph.D.

Date

Hyung-Jo Yoon, Ph.D. (Chair)

Date

California State University, Northridge

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Dedication

All of this is for my parents, immigrants from Mexico, who surpassed adversity and gave me the best life they could despite their struggles. They gave me the gift of an education for the hope to excel in the future. They came here with nothing, but they gave me everything.

Abstract

The Incorporation of Computer-Assisted Peer Feedback in the L2 Classroom

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Many studies have analyzed the strengths and weaknesses of peer feedback. Some studies had even begun to research the inclusion of technology in peer feedback. However, there are not many recent studies that include the use of technology within peer feedback. With this new shift of technology used in recent years, a study was proposed based on the strategies provided by previous scholars. My research attempts to understand the perceptions of the 12 students from my writing course in Westwood, California. It seeks to determine whether they preferred traditional face-to-face interactions or if they perceived technology as useful for this exercise. Moreover, students were observed, and some unexpected problems occurred that I believe are worth mentioning.

Introduction

Writing is a process that involves many steps such as brainstorming, prewriting, drafting, editing and revising (Kellogg, 1996). Although editing may take some extra time it is crucial for student improvement. Through editing, students can reflect and improve their work. Editing is an important step in the writing process because it allows the student to be able to correct errors and improve their writing skills. Depending on the focus of the class, they may choose to edit small details (local errors) or focus on the cohesion and organization (global errors). Moreover, there are different forms of editing and it is disputed whether self-editing, teacher feedback, or peer feedback is the best form of editing for students.

The purpose of this paper is to argue that peer feedback is beneficial in ESL classrooms. It will examine the advantages and disadvantages of peer feedback in its traditional mode of face-to-face interactions. Then it will evaluate the modes in which technology, specifically computer-mediated communication, can benefit peer feedback in ESL writing classrooms.

Technology has grown rapidly in the past decade and it is widely used in the classroom. Teachers use technology in the classroom as supplemental material. For example, teachers are using YouTube videos for an array of reasons. One way it is used is to practice listening. YouTube can also demonstrate authentic scenarios where the speech target is spoken. Teachers can also incorporate technology to assess students in interactive ways. For instance, Kahoot! is a popular online platform that allows teachers to assess their students as they have fun competing against their classmates. Moreover, the incorporation of applications in classrooms is growing as developers create engaging material for students and teachers. Teachers can use technology to develop a more dynamic classroom that is focused on promoting discussions and collaborations (Tsui & Ng, 2000), therefore, helping students improve their language proficiency.

This paper will explore the advantages and disadvantages of peer feedback in a general traditional face-to-face interaction. Then, it will analyze the advantages and disadvantages of peer feedback through the use of technology, specifically focusing on computer-mediated communication (CMC). To do this it will first ask participants of an English as a Second Language course about their perceptions on peer feedback. Then students will be taught peer feedback in a traditional mode through hand-written and face-to face interaction. After this, students will be taught how to use peer feedback through Google Docs. Finally, students will be surveyed about their experience. The study seeks to understand which mode of teaching is best for students, traditional v. computer mediated.

Literature Review

Roles of Peer Feedback

Peer editing is a beneficial component to the writing process. A major benefit to peer feedback is that it can help students establish audience awareness. Rollinson (2005) argues that a peer who acts as an audience, will be able to demonstrate if the writer's message was conveyed effectively by responding to the writer. Moreover, a peer can provide another perspective and outlook that may be able to provide new ideas to their classmate. In a study (Ghandoura, 2012) that looked at the perceptions of students who used peer feedback, many students praised working with international students. They believed that multicultural perspectives were a strong advantage as part of their writing process. Therefore, receiving peer feedback allows students to gain audience awareness and also provides students with new perspectives from their classmates.

Another asset to peer feedback is that it creates real authentic communication amongst students. In sum, peer review leads to interactions that involve clarifications, justifications, and explanations. These characteristics make up for advanced socio-cognitive conversations, (Rollinson, 2005). Therefore, when it comes to peer feedback, it often leads to the development of complicated conversations between peers, resulting in authentic speech. This environment is valuable because it develops a real dialogue between students as they participate actively in giving and receiving feedback.

Peer reviewing is not only a benefit for the receiver of the feedback, but it also benefits the reviewer. In actuality, the reviewer becomes a better writer (Ghandoura, 2012; Min, 2005). Students are more capable of critically evaluating writing. For example, Rollinson (2005) claims that through peer editing, students become better self-reviewers. Min (2002) also found that peer

reviewing helped improve one's own writing ability. In a separate study, Lundstrom and Baker (2009) compared the improvement in writing skills from students who only gave feedback but never received to students who only received feedback but never gave. They found that reviewers learned more by giving feedback compared to the students who only received feedback. Hence, participating in assessing student writing establishes awareness of common errors and allows students to reflect on their own writing. Tsui and Ng (2000) also reported that students believed they gained knowledge from critiquing other students' writing. Therefore, peer feedback is necessary for students to not only help their peers, but it also makes them become better writers as they are more capable of evaluating and critiquing writing.

Difficulties in Implementing Peer Feedback

However, the adoption of peer feedback also has its downfalls. Depending on the student's culture, some students may not be accustomed to this type of classroom dynamic (Ghandoura, 2012). This can produce an apprehensive atmosphere amongst students. Liu and Sadler (2003) found that peer feedback can create tension and a feeling of uneasiness amongst participants. This is due to various factors. Liu and Sadler suggest that students are defensive when their work is critiqued. They also claim that students can become "hostile" or "unkind" when criticizing their classmates' writing. Consequently, this classroom environment can have a negative influence where students feel hostility towards their classmates.

In some cases teacher feedback is favored by a majority of students (Rollinson, 2005). Depending on their cultural upbringing, some students are hostile to receiving feedback from a peer. For example, students from China favored teacher feedback and students did not approve of peer feedback (Miao, Badger & Zhen, 2006). This study interviewed students about their

perception of peer feedback after it was used in the classroom. It found that “usefulness of peer feedback was expressed with reservations. In students’ words, “peer feedback was ‘basically,’ ‘partially,’ or ‘sometimes’ useful.” A reason for this might be that students may perceive their teacher as someone who is trained and very knowledgeable in their field of study. In fact, students may feel that their peer does not add as much value to their writing as compared to the teacher (Rollinson, 2005). Rollinson also argues that students would prefer to be critiqued by a native speaker or someone who they feel would be qualified to critique their writing. Therefore, encouraging peer reviews in the classroom can be a difficult task due to student perceptions.

Peer feedback is not only controversial within student perceptions, but it is also controversial among teachers who dispute whether peer feedback is necessary. Time constraints are a big issue for many teachers (Rollinson, 2005; Yunus et al., 2013). This is one main reason teachers do not favor providing class time for peer review activities. However, when comparing the total changes made by students with teacher and peer feedback, Eksi (2012) found that students corrected about the same amount of errors as teachers. Therefore, peer feedback is valid. Further, Eksi argues that it can help teachers save time by not having to provide feedback for each draft. This is beneficial because teachers will look at a paper that contains fewer errors than the original. As a result, peer feedback can save time rather than just be a waste of time. Therefore, time spent on peer feedback is valuable time, especially for teachers who have large classes.

Some people may argue that technology is not necessary and may be difficult for students to use. However, Liu and Sadler (2003) found that not all students were technologically savvy. Some students were not accustomed to typing and were constantly slowing down to look at the keyboard to type. This shows that not all learners possess computer literacy although many

young adult learners do. However, in this day and age it can make learning easier and more entertaining for students (Ghandoura, 2012; Liu & Sadler, 2003; Yunus et al., 2013). Many learners are accustomed to using technology in their day-to-day life as technology has become the norm for many people (Hiradhar, 2013). In reality, the use of computer technology in ESL and EFL classrooms is integrating as a norm of the 21st century, (Ghandoura, 2012). Computer literacy is also becoming an important skill that students need and want to learn regardless of subject. In addition, students who learned through WebCT, a program that utilizes computer-mediated communication (CMC), found that students believed “it was helpful to become familiar with WebCT formats, as these are becoming more prevalent across educational domains,” (Ghandoura, 2012, p. 60). It is also noted that using CMC in assisting with peer review is becoming an important component to the instruction of ESL writing, (Liu & Sadler, 2003). WebCT is an online virtual system that helps facilitate education through e-learning. ESL and EFL teachers are able to utilize the tools in WebCT, such as live chats or discussion boards and use them in everyday lessons. This can help promote discussion throughout the class or it could also be used for homework. An example of an everyday assignment could be to read or listen to a passage, then to write their opinion about the passage on a discussion board. Then they should read two classmates’ opinions and leave a comment about whether they also agree or disagree with their classmate. Teachers could also choose to specifically use these tools for peer editing. Students could post their writing, and other students can see the work and leave various comments about the passage. Or students could also discuss the work through a live chat. The teacher has many options with WebCT. Thus, technology has become a prevalent tool for teachers to incorporate into the modern curriculum.

With the introduction of technology into the classroom, commenting on a fellow peer's work can also be a challenge. First, a teacher must decide whether the commenting should be synchronous (leaving feedback at the same time their peer is present) or asynchronous (leaving feedback while their peer is not present). This can be done through CMC or face to face. Liu and Sadler (2003) compared synchronous and asynchronous through CMC and compared it to face to face interactions. They reported that the CMC group had 30 % more maintenance and superficial comments as opposed to clarification, suggestion, and alteration. However, this statistic is based on percentage. In actuality, this study had a much higher number of comments from the CMC group, 316 versus 180. Therefore, CMC motivates students to participate more amongst their peers. Moreover, Liu and Sadler's findings also demonstrated synchronous group chats were more distracting for students as these had the higher amount of maintenance comments. Similarly, Yunus et al. (2013) report that online forums were more distracting for students. This made it difficult for students to stay on topic. However, Liu and Sadler argue that maintenance comments play an essential role in communication, and claim "the importance of this type of communication must not be underestimated in terms of its impact on the peer review process," (p. 210). These types of comments are real authentic speech that Rollinson (2005) would encourage. Comments can also be distracting when groups are too large and may result in difficulty controlling time management (Liu & Sadler, 2003).

Technical difficulties should also be taken into account. Liu and Sadler (2003) suggest that technology takes more time to set up. In addition, teachers are weak in managing problems that involve technology (Yunus et al., 2013). For instance, student wrote about problems that they experienced with software compatibility, especially when it dealt with formatting they believed that improvements with formatting could improve the overall

course, (Ghandoura, 2012). Liu and Sadler (2003) also reported that students blamed their classmates on technical difficulties, which might promote animosity. In this study, students also had difficulties logging into their accounts. Therefore, teachers should be aware of this concern and allot for extra time to help students adjust to any technical difficulties.

Another large issue with CMC is the lack of nonverbal features. In the Liu and Sadler study, it revealed that the high number of maintenance comments were “partly due to the lack of nonverbal communication, which is indispensable in a culturally diverse peer review group,” (2003, p. 221). Meaning, that nonverbal behaviors such as hand gestures, facial expressions, and the lack of tone and stress diminishes the potential for effective communication.

Overcoming the Disadvantages through Peer Feedback with Computer-Mediated

Instruction

Despite these disadvantages, peer feedback has numerous positive effects that promote engagement and collaboration in the classroom. Students report that the implementation of technology in the classroom is more encouraging and fun compared to face to face interaction (Ghandoura, 2012). Hojeij et al. (2017) used a synchronous collaborative application in the classroom, Edmodo, for peer feedback. Their study found that 78% of students had positive perceptions of the technology. Furthermore, Liu and Sadler’s (2003) students found the use of computers more appealing. As mentioned before, the CMC group of students also saw more comments compared to the face to face group. This demonstrates that students found it more encouraging to discuss online. In this same study, students reported that they found online interaction to be less face-threatening.

Students who utilized CMC interactions in peer review are more likely to comment on local issues and have more review-oriented comments compared to the traditional group, (Liu & Sadler, 2003). The CMC group's comments were 72% local, compared to the traditional group at 58% (p. 204). Whereas "92% of the comments made by the technology-enhanced group were revision-oriented in nature, compared to 75.6% for the traditional group," (p. 206). It is argued in their findings that there is more feedback on local errors because of the grammar and spell check features in computer writing programs. Liu and Sadler (2003) also argue that these functions help students notice errors. The fact that grammar and spell check is readily available makes it easier for students. The traditional group would have to grab a dictionary or a grammar reference to be certain of the mistakes. Computers have multiple features that can help students in their writing. Another benefit is the ability for students to write while having internet access. This makes it easier for students to find information on their topic, (Yunus et al., 2013). Teachers said this was one great advantage. The researchers also argue that internet access can be great for pre-writing stages.

With all this in mind, peer feedback has many advantages especially through the use of computer-mediated communication. When CMC is used appropriately it can help learners develop better writing skills. They develop an awareness to critiquing writing. Not only do writers benefit, but reviewers also benefit from the process. In addition, teachers can save time from reading too many drafts and providing all of the necessary feedback. Another benefit discussed is the development of real authentic language used to discuss the writing, which promotes clarification, suggestions, and questions. Moreover, students have more positive attitudes about technology and thus use it more to communicate. Some students also argue it is more encouraging to critique through this medium because it is less face threatening (Liu &

Sadler, 2003). Technology also allows for students to have many resources available to them through the internet, they have access to dictionaries, information for reports, and an array of material to reference. Another benefit of technology that I have experienced personally is the ability to access my papers from any computer if they are saved on an internet cloud. For example, if students use Google Docs, or Apple Pages, then they are able to access their papers from any device that has internet access. Students can simply log in to their account from any device. Students will no longer have the excuse that they forgot their homework at home. To end, CMC is necessary, especially in the modern day. Teachers should take advantage of the benefits from CMC in respect to providing peer feedback.

Procedures

Students were given a pre-survey about their perceptions on language learning and technology. This was done through the use of Google Forums. Students were asked if they liked working in groups or individually. They were also questioned whether they believed they were good learners in general and if they believed they were good writers. Finally, because this experiment aimed to use peer feedback through computers, they were also survey about their beliefs of technology.

Next, students were placed into groups of four for the remaining of the session. Students were given a prompt and individually brainstormed their ideas. After, students met with their groups to discuss with their team their ideas for writing as suggested by Rollinson (2012) who believes that peer work should start from the beginning stages of the writing process. Students were observed during their discussions and it appeared that many students were able to give and get ideas for writing from their peers. Students wrote the first draft at home. The following day students were provided with a sample essay and a handout with guiding questions for peer feedback that focused on global errors. Students discussed the sample essay in groups as they answered the questions. After this, the sample essay was projected in the class and everyone addressed the errors that were made. Through this process students were taught how to discuss problems in an adequate manner that targets the matter and is clear.

The next class meeting, students brought their first drafts for peer review. They reviewed the lesson from the previous date on how to ask for clarity in a partner's paper. In each group of four, students would review three papers and receive feedback from their three partners. Finally for homework, students were asked to rewrite their paper and turn in a second draft. First draft, second draft, and peer review handouts were all collected.

The next week, students were provided with a similar draft for controlling of the prompt. Students brainstormed together like with the first prompt. Then students were taught how to access Google Docs through their Gmail accounts. For homework they were asked to write their first draft and email it to me. Each first draft was saved. Then during the next class meeting students were given access to an example paragraph. They practiced using the same guiding questions, but this time they did the editing through “comment mode” on Google Docs. Therefore, all feedback was not to be automatically changed by the reviewer but instead suggested and required approval from the writer. Then as a class, they entered the same Google Doc and inserted comments and practiced using the features. The teacher assessed their understanding informally and helped those who had difficulties using the software. The next day, students peer reviewed their group members’ papers. This took a lot of time because some students had difficulty sharing the document. When students finished commenting through Google Docs, students met face to face to discuss each members’ paper. For homework, students were to fix their mistakes and email their final draft to their teacher.

Finally, a post-survey was conducted to evaluate the students’ experiences and to understand whether the use of Google Docs for peer feedback could be useful to future courses. Results were gathered and evaluated.

Participants

The study takes place in an English as a Second Language school in Westwood, California. There are 12 students who participated in this study; students are from the ages of 18-24, and one student is 43 years old. Students come to this English school for a variety of purposes; many are tourists and want to learn English while in town. Some students seek to

improve their English as part of their university requirement to study abroad. Other students hope to transfer to universities in the U.S. and want to improve their academic language. This school functions in 12-week sessions being year round. The school is unique in the sense that students can enter the class and leave the class during any point. This means that some students may enter the class during week 1 or maybe week 9. There is usually a 2 week minimum that students stay. However, most students stay for 12 weeks or longer. This also means that students can enter a course during week 5 and after “12 week session”, they will finish their level during week 4. Moreover, the school offers 7 levels, these students are in level 5, which is considered high intermediate. Students at this level based on the school’s provided syllabus and textbook are focused on creating paragraphs. There is an emphasis on teaching topic sentences and supporting sentences with organized transitions.

Moreover, for this study, the participants are mainly from Japan (n = 9) and a few from other parts of the world: Turkey (n = 1), Brazil (n = 1), United Arab Emirates (n = 1). They meet 4 times per week, Monday through Thursday from 11:10 AM to 1:15 PM (including a 10-min break). One hour focuses on Grammar, and the last hour focuses on Writing.

In their Grammar class they have practiced all verb tenses, subject verb agreement, article usage, and modals. Peer feedback may help the students reflect on grammatical issues that they have already covered in class.

Methods

Student email addresses were collected during the beginning of the experiment. Then, students were sent the survey created through Google Forms. Students were given the survey as homework and completed them at home. The next day, students looked at the essay prompt that asked students to either agree or disagree with a statement about the importance of learning a

foreign language in this globalized era (Yoon, 2017). Students brainstormed their main points and came up with examples using a brainstorming cluster. After brainstorming individually students discussed their ideas with their assigned group. For homework, they were to write a draft of their paper. Following this, the next class students were taught how to do peer feedback by analyzing an essay. They used a handout with guiding questions for this activity. Then the teacher and students went over the mistakes that they found by projecting the essay and discussing the errors together. The guiding sheet focused on global errors, however, the students were also able to find local errors (capitalization and commas).

On a separate day, students brought in their first draft of their paper. The class began by reminding them how to ask questions about another student's paper. Students were assigned into groups of 4 so that they may practice and receive more peer feedback. For homework students were to make corrections to their papers based on the peer feedback. Students then submitted their first and second drafts with their peer review handouts.

These steps were then repeated the following week but with the use of Google Docs. First, students were shown how to access Google Docs. Students were sent a sample essay to illustrate how to insert comments. During this class, students also collected their peers email addresses. The next day students were given a prompt to brainstorm that was similar to the first essay prompt in the traditional peer feedback where students used traditional hand-writing and face-to-face interaction. This prompt also asked students whether they agreed or disagreed that learning a foreign language can lead to success (Yoon, 2017). They were asked to discuss their brainstorming clusters with their group. After, they began to type their draft on their computers and finished them for homework. The next day, students brought their drafts on their computers and were given the same worksheet to focus their attention to these types of global errors.

Finally, students were asked to meet face-to-face to discuss the comments that they made, to avoid any miscommunications from the lack of gestures and voice that does not exist through computer communication. For homework, students must make corrections and submit their final draft through email.

Finally, students were surveyed about their experiences with using Google Docs in the classroom. Google Forums was used to collect the data. The surveys used open ended questions as well as linear scale questions ranking from one through seven to better understand the average opinions in the class.

Results

Observations

Students first did the traditional peer feedback with the prompt from Yoon (2017) that focused on whether the student agreed or disagreed that learning a foreign language is necessary in a globalized era. They began by creating brainstorm clouds about the prompt and then met with their groups. Groups were created by the teacher, and students were to meet with the same group members for the complete writing process (brainstorming, peer reviewing, discussions). I noticed students had a lot of positive energy when discussing their ideas and some students chose not to simply read their notes but to discuss their ideas without depending on their notes to speak. They were having genuine conversations about the future of their paper and what they hoped to explain. This energy was also consistent during the second prompt's brainstorming discussion.

For homework, students were to write a paragraph about the prompt. The papers were started in class after their discussion. Most students did their homework, however, a few students did not. The teacher demonstrated how to talk about someone's writing with an example essay. Students met in teams to discuss the example paragraph. Then after, the students discussed the work as a class. A lot of errors were found, but the main target of this hour was to teach them how to discuss with a partner how to provide feedback. During the next class, students met with their teams and were given a handout of questions to answer relating to the organization of the paper. Students read each other's papers and provided feedback. Students really utilized the question handout and provided a lot of commentary. After meeting with their groups, students were to make necessary changes.

The following week, students began to learn how to use Google Docs through an example paragraph that they received access to. Many students already had their

own Gmail accounts, so this was great. However, when logging into their Gmail account, it would be in their language. This challenge was not foreseen, for future studies I recommend students make a new Gmail account in English. Another difficulty that arose when using computers was that students would accidentally send their paper in editing mode instead of commenting mode. This may have been due to the home language being used in the Google Doc. However, this was not too bad because this was caught ahead of time, and every student made two copies of their papers for the purpose of this study.

One major thing I noticed, was that students received more comments on the traditional paper in comparison to the Google Doc. This may have occurred because the prompts were similar. Some students expressed that they had already gone over the same writing. Overall students did better in their final Google Doc, compared to their traditional hand-written paper. However, a lot of the same ideas were carried over.

Technical difficulties were expected and did arise during the sessions with computers. Some of the technical issues that came up was logging into their accounts. One student had forgotten her password and it took her some extra time to log in. Another technical difficulty was that one student was not able to email her Google Doc to one group member. She was the only one who experienced this issue and only with 1 of her 3 group members. I tried to fix the issue, but the server would automatically change that students' email address. Students also had difficulties in sending their Google Doc, as it was their first time. However, with practice I believe that the class time that was spent on setting up for peer review could decrease as students continue to practice and improve this skill.

Also, after students left comments online, students met their groups and discussed each paper one at a time amongst the group. Students were very engaged in their discussions and as I

observed, students were giving a lot of positive comments about the writing. These discussions lasted longer than expected as well. They would explain why they left their comment and as they were discussing some students would add more comments to the paper. This is most likely due to the fact that they are re-reading the paper.

Pre-Survey

Students were asked 17 questions using Google Forums. They were asked about their language learning confidence as well as about their perceptions on writing. The first part of the survey used a 1-7 point scale to determine if students agreed (7) or disagreed (1). The first question asked students if they believed they had the ability to learn English very well. The students averaged 6.17, with a standard deviation of 1.14, meaning that many students have confidence in their own learning abilities. Next, students were asked if they felt they were able to write accurately in English. This question varied in results with a standard deviation of 1.9 and an average rate of 3.83. When asked if they felt they should find their own opportunities to learn English, many students agreed with an average of 6.58 and a standard deviation of 0.51. Another general question that targeted their independence as learners asked students if they like to do their classwork at their own speed. Students rated this question at an average of 5.67 and a standard deviation range of 1.15. The last question that focused on independence as well as a writing skill asked students if they reread their paper before submitting it. This question scored an average of 5.42 and had a large range of answers with a standard deviation of 1.68.

Students were also asked if they believed their language success depended on what the teacher does in the classroom. The results varied, but on average students rated this question with a 5.67 average and a standard deviation of 1.44. Then students also answered if they thought receiving comments from their teacher on their writing would be beneficial. The data

showed that many students agreed with this statement with an average of 6.67 and a standard deviation of 0.67.

Separate questions on this survey targeted understanding if students have positive perceptions about working with their classmates. Students were questioned if they enjoyed working with classmates in partner activities. This question had a range of answers with a standard deviation of 1.31 and an average of 5.58 that demonstrated that for the most part they had positive perceptions. Participants were also questioned if they believed it would be a good idea to receive comments from a classmate on their own written work. This question received mostly positive scorings, with an average of 5.5 and a standard deviation of 1.38. In comparison, when asked if they felt that giving a comment to another student could benefit, participants rated this lower with an average score of 4.42 and a standard deviation of 2.19.

Finally, the last question of the linear scale questions aimed to understand participant perceptions about the use of technology. They were asked if they believed that using technology in the classroom is beneficial. Students had very positive perceptions with an average score of 6.08 and a standard deviation of 1.16.

Some of the open-ended questions had similar responses. For example, when asked about the difficulties encountered when writing, a large majority indicated vocabulary as the most challenging part. When asked to indicate as many people as possible from which they would ask for feedback on the writing everyone said teacher, and very few indicated tutor, classmates, friends, and family.

Survey Question	Average	Standard Deviation
1. I believe that I have the ability to learn English very well.	6.17	1.11
2. I think my language success will be based on what the teacher does in the classroom.	5.75	1.36
3. I think it is beneficial to receive comments on my writing from teachers.	6.67	0.65
4. I am able to write accurately in English.	3.83	1.9
5. I believe that I should find my own opportunities to speak English outside of the classroom.	6.58	0.51
6. I like to do my classwork by myself at my own speed.	5.67	1.15
7. I always like to reread my writing to check for mistakes before turning it in.	5.42	1.68
8. I like working with partners or doing small group activities.	5.58	1.31
9. I think it is beneficial to receive comments from my classmates on my writing.	5.5	1.38
10. I think it is beneficial for students to receive my comments on their paper.	4.42	2.19
11. I think it is beneficial to use technology in class.	6.08	1.16

Post-Survey

Students were interviewed about their experiences using Google Docs at the end of the experiment. The questions in the post survey were also conducted using a linear scale and a few open-ended questions. The linear scale questions used 7 points ranging 1 through 7. 1 being that they did not agree, and 7 means that they strongly agreed. When asked if they felt their writing had improved using computers, the average ranged at 2.25 which is low, with a standard deviation of 1.13. When asked if they believed they had become better at finding errors in their own papers the average score was 3.5, but it was split almost evenly, with a standard deviation of 1.56. They were also asked if they enjoyed communicating with their peers online through the use of comments, and the average was 4, with a standard deviation of 1.65. When asked if they felt their partners contributed good suggestions to help them improve their paper, they averaged a 4.5 with a standard deviation of 0.52. Their opinions about the importance of communicating

face-to-face with their partners after online discussions scored higher with an average of 5.5 and a standard deviation of 0.90. When asked if they felt they were able to help their partner improve their paper, it was a middle response with an average of 3.5, and a standard deviation of 1.16. Students were also asked if they felt Google Docs made it easier to find errors than traditional writing, students agreed with an average of 5.75 and a standard deviation of 0.87. Finally, students were questioned if they believed Google Docs would be useful for other students to utilize in a writing course, and this averaged a 5, with the standard deviation of 0.74.

Survey Question	Average	Standard Deviation
1. I feel my writing has improved while using computers.	2.25	1.14
2. I think I have become better at looking for errors on my own paper.	3.5	1.57
3. I enjoyed communicating with my partners online by leaving comments.	4	1.65
4. My partners gave me good suggestions to better my paper.	4.5	0.52
5. I believe it is important to discuss face-to-face with my partners after making online comments.	5.5	0.9
6. I believe that I was able to help my partner fix their papers.	3.5	1.17
7. I think using Google Docs made finding errors easier than traditional hand writing.	5.75	0.87
8. I think Google Docs is helpful for other students to use in their writing class.	5	0.74

Discussion

The data showed a lot of information about student perceptions. According to the literature, students benefit more by critiquing writing, (Ghandoura, 2012). Although this may be true, students were questioned if they believed through their experience if they felt they benefited more through critiquing or receiving feedback. The data illustrated the opposite as students believed they would benefit more from receiving feedback compared to giving feedback. Through observations, it was noticeable that students became more aware of correcting their peers' papers and their own papers also improved.

After their experience, students leaned towards the agreement that communicating face-to-face after virtual interaction was important. I agree with this point because as I observed the study, students would add more comments and they could clear up any misconceptions during their face-to-face interaction. Students also seemed to agree that Google Docs made it easier to find errors compared to traditional writing. One note, is that students were better at finding local errors through the use of Google Docs. However, this may be because the first essay prompt was similar and it is possible that students cleared up most global issues during the hand-written essay. Overall, these results were very positive in the favor of the addition to CMC in L2 peer feedback lessons.

However, students were not as positive about whether they felt they were able to help their peers. This was a middle average response. I would have preferred to see this result as more positive to note that students felt they were making a positive impact. However, this was not the case. Some students felt their advice was helpful and others did not feel they provided helpful suggestions.

Overall, I believe that using technology in the classroom is important in this day and age because education is now being facilitated through e-learning programs throughout different schools around the world. Moreover, the use of peer feedback encourages authentic communication through a communicative approach.

Conclusion

This research has found that Google Docs promotes discussion in the classroom during peer feedback activities. Students were motivated to use technology as previous research suggested. Moreover, students were able to find more local errors through the use of CMC. Perhaps the spelling and grammar check helped, or perhaps it also had to do with the fact that both the traditional writing and the Google Doc prompts were similar therefore students may have no longer wanted to go over the global errors. Nonetheless, writing scores did improve during the final draft of the Google Doc.

Peer feedback through Google Docs did take more classroom time compared to traditional face-to-face interactions. One main reason is that students were not familiar with the software and this was their first time using the program. However, it is believed that teaching peer review through Google Docs would improve as students become more familiar with the software. Students were able to catch on quickly to the teacher's directions. The teacher would also become more familiar with the program through more practice. This could also help the teacher know what problems to anticipate for future classes. For instance, there were some technical difficulties that were not expected, but through this experience both the students and teachers can learn what to expect.

Limitations

One major limitation is the way that the school functions. Some students have been enrolled for 9 weeks in this course, while others may have been enrolled 3 days prior. Therefore, some students have learned more from the grammar and writing textbooks at this point during

the semester than others. This is difficult for the experiment because some students have learned more than others and may be able to provide more feedback.

Another limitation is that not all students do their homework and some don't like to do classwork either. This was attempted to be fixed by having students do their homework or start their homework in class. However, this did affect class time. One student in particular did not do his homework at all, and he did not receive points as a result. This caused delays in his group because he would start writing his paragraph during class. He would be writing or typing, meanwhile his peers would be looking at the papers within the other group members. However, when comparing hand-written homework to online homework, more students turned in their online homework. I believe online homework eliminates the chances of students making the common excuse of forgetting it at home.

Future Directions

If to repeat this study, it would be advised that students create a new Google account in the classroom in order to make sure the settings are in English for everyone. This was a flaw in the study, as it was not anticipated that their accounts may be set to their native language. This would help facilitate instructions on how to share their documents. Although this did not create huge problems, it did take some extra time away as the teacher tried to decipher which items needed to be clicked.

Another part of the study that should be more closely analyzed would be to see whether CMC programs receive more global or local feedback. To do this, it would be best to use two completely different prompts so that students are not repeating the same idea. It would also be interesting to see this study also done twice through CMC as to see how much students'

confidence improves in using the technology. It would also be great for both teachers and students as they would be more familiar with what types of problems to anticipate.

I would definitely recommend students to be in groups of four. They were able to receive and provide feedback to multiple people and as a result create more of a dialogue between group members. Setting groups to brainstorm together did appear to help students better understand their peers' papers.

Although this paper strongly favors the use of computers in this modern day, this does not substitute for verbal communication which includes tone, gestures, facial expressions, etc. Therefore, with all future plans of incorporating CMC into the curriculum, after students leave comments online, they should get into groups and verbally discuss the comments and suggestions that they made to avoid any misunderstandings. This was a very successful step in my research because I found that students were not always sure what their partner meant or were not sure why they made a suggestions. This allowed for students to ask questions and provide clarification. It also created magic moments where students taught each other very specific things like the use of commas, or subject-verb agreement.

Peer feedback is important because it allows students to think critically about their peers' writing but also about their own writing. It helps them improve their paper and it can help reduce teacher grading. It can also encourage learners to become independent learners as they evaluate their own writing. This also promotes student-centered learning.

The use of Google Docs for peer feedback in ESL classrooms needs more research to be done because through this experience it was evident that students enjoyed interacting through this software. Overall their grades did improve when using this program as they appeared to be

more aware of organizational errors as well as local issues. Moreover, more work should be done to better use this software amongst ESL classrooms.

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Appendices
Appendix A: Google Doc Example Paragraph

Name: John Doe

Countries to Visit

A famous country is Italy because it has many beautiful places to visit. A glorious attraction is the Colosseum because it is filled with a lot of cultures and history. Venice is also popular and tourists can ride the gondolas. Gondolas are romantic boats, and are especially popular in the summer. I went with friends for a gondola ride once, but in Xochimilco, Mexico. Drinking in Italy is popular because I heard the wine is very good. Try the local food and enjoy a plate of spaghetti or a gelato or both. Italian food is delicious. My favorite type of meal is Chinese food. If I have time in my visit I would like to go shopping in Milano and buy presents for my family. Sometimes I miss my family when I am on vacation. It makes me sad. In Italy, The Vatican is a common place for tourists because it is very sacred. I hope to visit Italy next summer. Italy is a popular place for tourists.

Appendix B: Peer Editing Question Sheet

Writer's Name: _____

Peer Editor: _____

1. What is the title of the paragraph? Does the title match the ideas in the paragraph?
2. Is the paragraph indented? Yes/No
3. What is the topic sentence?
4. Can the topic sentence be improved? How?
5. Are there any unrelated sentences? If so, write down the unrelated sentence here.
6. What is the concluding sentence?
7. Can the concluding sentence be improved?
8. Write down two things you liked about the paragraph.
 1. .
 - 2.
9. Write down any other comments that can help improve the paragraph.

Appendix C: Peer Editing Example Google Doc

Google Doc Demonstration

The first thing you should do is create a title. second thing you should do is indent. Create your topic sentence after you have indented. Add six spaces on the first line. The topic sentence should have a strong controlling idea. Follow this by adding supporting sentences with examples and finally write a concluding sentence. after you have written your paragraph you will share it with your team members. On the top right there is a blue button that says “share,” click it. Blue is also a color of dominance. Blue can also symbolize sadness. First click the button that looks like a pencil. select the option “can comment.” Under where it says “people” write the email addresses of your partners. Send it to your teacher. You do not need to write their phone number. When you receive your partner’s papers, you can make suggestions and insert comments. There are different ways to do this. One way is to highlight text and right-click and select “insert comment.” You can also write on top of the paragraph and make the suggestions automatically. Google Docs is easy for students to use and can help them interact in their writing.

Appendix D: Directions for Sharing Google Doc

Directions for Sharing Google Doc with classmates and teacher

Everyone should share their Google Doc with Maribel, her email is:

maribel.garcia.117@my.csun.edu

Groups are assigned, you will also share the same document with each of your 3 partners.

- To do this you will enter the Google Doc.
- First make sure to copy and paste it and make a second copy. Teacher will demonstrate.
- Then add to the title of one and write “first draft”
- The one you send to your group member should say “second draft”
- Then to share, on the top right, click “Share”
- There is a button that looks like a pencil, click it and select “make suggestions”
- Under where it says “People,” insert email addresses. You can send it to everyone at the same time by writing each person’s email.
- Finally click Send.

Team A

(Included 4 student names and emails, removed for privacy)

Team B

(Included 4 student names and emails, removed for privacy)

Team C

(Included 4 student names and emails, removed for privacy)

To insert comments, you can highlight the text and right click, and select insert comment. Or you can also write on the paper directly and make suggestions.

Appendix E: Writing Prompts (Yoon, 2017)

A1 (Hand-Written Essay)

Situation:

You attended a seminar and the main theme was that using a foreign language fluently has become necessary in this globalized era.

Writing task:

Write an essay about whether you agree or disagree with the statement about the necessity of foreign language abilities. Support your position with reasons. Be sure to fully develop your essay by including clear explanations and logical supporting ideas.

A2 (Google Doc Essay)

Situation:

You attended a seminar and the main theme was that the ability to speak a foreign language raises the possibility of having a successful life.

Writing task:

Write an essay about whether you agree or disagree with the statement about the relationship between foreign language abilities and success. Support your position using the reasons provided below. Be sure to fully develop your essay by including clear explanations and logical supporting ideas.