2022

Using Peer Review to Improve English as a Second Language College Students' Writing Scores

Mengjie Wei

The University of San Francisco

**USING PEER REVIEW TO IMPROVE ENGLISH AS A SECOND
LANGUAGE COLLEGE STUDENTS' WRITING SCORES**

A Dissertation Presented
to
The Faculty of the School of Education
Learning and Instruction Department

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

by
Mengjie Wei
San Francisco
May 2022

THE UNIVERSITY OF SAN FRANCISCO

Dissertation Abstract

Using Peer Review to Improve English as a Second Language College Students' Writing Scores

This study was conducted to examine the effectiveness of peer-review in college English as Second Language writing classes to improve ESL students' writing scores. It also investigated a statistically significant difference in college ESL students' writing scores between those who use the self-check list and peer review worksheet and those who only use the self-check list in writing paragraphs and essays. More specifically, this study was conducted to determine the influence of different areas on students' English writing scores, i.e., format/content/structure, grammar, vocabulary, and spelling. In addition, this study explored students' attitudes and opinions on peer-review in writing class.

This research was a mixed-methods study with a quasi-experimental design, including qualitative and quantitative components. The quantitative part included participants' essay writing scores on the baseline writing and post-writing assignments. The quantitative component was an online survey for the treatment group.

There were two groups of participants (*n*=25) in this study. There were 13 students in the comparison group and 12 students in the treatment group. The independent variables in this research design were the peer-review worksheets and the self-checklist interventions. The dependent variables in this study were students' writing scores on the baseline writing assignment, which used a self-review checklist, and the post writing assignment, which used a peer-review editing worksheet.

The results show no statistically significant difference in the baseline writing scores

between the treatment and comparison groups. The corresponding significance values for F/C/S scores, grammar scores, spelling scores, vocabulary scores, and the total scores were 0.953, 0.758, 0.955, 0.846, and 0.857, respectively. Those values were much higher than 0.05, demonstrating that the students' English writing skills were similar between the treatment and comparison groups on all criteria. There was a statistically significant difference in grammar scores, spelling scores, and total scores between the self-review results and peer-review results for the post writing scores within the treatment group. Corresponding significance values were 0.016, <0.001, and <0.001, respectively. For F/C/S scores and vocabulary scores, the corresponding significance values were 0.093 and 0.071, respectively. Therefore, there was no statistically significant difference in F/C/S scores and vocabulary scores between self-review and peer-review results. There was a statistically significant difference in grammar scores, spelling scores, and total scores between the treatment group (with peer-review) and the comparison group (with self-review) for the post writing scores between the two groups. Corresponding significance values were 0.029, 0.002, and 0.002, respectively. For F/C/S scores and vocabulary scores, the corresponding significance values were 0.066 and 0.078, respectively. Therefore, there was no statistically significant difference in F/C/S scores and vocabulary scores between the two groups. There was also a statistically significant difference in absolute score changes between the treatment group and the comparison group for grammar scores, spelling scores, and total scores regarding the score improvement from the baseline writing scores to the post writing scores. Corresponding significance values were 0.049, 0.004, and 0.028, respectively. The corresponding significance values for F/C/S and vocabulary score changes were 0.184 and 0.449,

respectively. Therefore, there was no statistically significant difference in F/C/S and vocabulary score changes. Similarly, there was also a statistically significant difference in the percentages of the score improvement between the treatment group and the comparison group for grammar scores, spelling scores, and total scores. Corresponding significance values were 0.045, 0.029, and 0.047, respectively. There was no statistically significant difference in F/C/S and vocabulary score-change percentages between the two groups since the corresponding significance values were 0.289 and 0.434 (which were all higher than 0.05). Feedback from the treatment group student' survey also revealed that students had a positive attitude toward peer-review. More students found that peer-review can better help them improve their English writing scores. Survey results also indicated that more students would like to recommend using peer-review to other students.

This study has implications and provides recommendations for future research and practice in second language acquisition, writing skills, language research, educational technology, and teaching methodology.

This dissertation, written under the direction of the candidate's dissertation committee and approved by the members of the committee, has been presented to and accepted by the Faculty of the School of Education in partial fulfillment of the requirements for the degree of Doctor of Education. The content and research methodologies presented in this work represent the work of the candidate alone.

<u>Mengjie Wei</u>   <u>May 9, 2022</u>
Candidate   Date

Dissertation Committee

<u>Dr. Sedique Popal</u>   <u>May 9, 2022</u>
Chairperson

<u>Dr. Xornam Apedoe</u>   <u>May 9, 2022</u>

<u>Dr.Kevin Oh</u>   <u>May 9, 2022</u>

ACKNOWLEDGEMENTS

This research study would not have been possible without the exceptional support of my professors and alumnus from the University of San Francisco, my family, and dear husband, and many of my friends. I want to take this opportunity to express my deepest gratitude to each one of them for their continued support, help, and encouragement along the way in my doctoral degree journey.

First and foremost, I would like to express my most significant appreciation to Dr. Sedique Popal for his valuable and constructive suggestions during each phase of my dissertation journey. His knowledge, enthusiasm, and exacting attention to detail have been instrumental in my dissertation journey. He always provided me with valuable insights and feedback to help improve my draft paper and kept my work on track from Chapter 1 to the last Chapter.

I would like to express my great appreciation to Dr. Xornam Apedoe, who provided me with constructive and valuable suggestions during the planning and development of my research study. My gratitude also goes to Dr. Kevin Oh for his help in providing me with insightful comments on my research design and for providing me with helpful resources and network support for my data analysis. I am grateful for his help on my doctoral dissertation and his support and guidance in my professional career guidance. I've learned so much from him about being a great researcher and being an inspirational professor who supports international students.

I also would like to thank my experimental group instructors, Professor Brian Ng and Professor Anne Agard, who were willing to support me on the experiment in their classes. I appreciate they provided so much support and assistance when conducting my research study. Without their help, I could not have completed my research experiment.

No one has been more important to me in my journey of pursuing a Doctoral degree in Education. I would like to thank my family, husband, and friends who have given me so much patience, love, and guidance. I especially want to thank my husband, Dr. Zipeng Li, who accompanied me at every stage of my dissertation journey. His story of pursuing his Doctoral degree inspired me and motivated me along the way.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Figure   Page

CHAPTER I

STATEMENT OF THE PROBLEM

English is being used widely globally, and English learning has become one of the most popular trends in educational practice. Due to globalization, English learning has become more critical (Shimaya, Yoshikawa, Ogawa, and Ishiguro, 2020). Learning English is still considered one of the most challenging issues for non-English speakers. According to Lin (2015), about 49 million adults reported speaking a language other than English in their daily lives. Among the 49 million adults, there are about 22 million who do not speak English very well, which means about 22 million adults would need extra instruction to improve their English skills (Lin, 2015).

In English learning, there are some essential skills that students need to master. These skills are speaking, listening, reading, and writing. According to Manurung and Mashuri (2017), to be successful in learning a new language, language learners should have the ability to express themselves by speaking their feelings, experiences, and thoughts in their daily life. According to Afshar and Asakereh (2016), speaking is an essential skill that English as a Second Language (ESL) students need to acquire to communicate effectively with others. Speaking not only requires students to have grammar and linguistic knowledge but also to use socially appropriate language. Some factors can affect students' speaking proficiency, such as age, cultural background, discourse, and knowledge of grammar and vocabulary. Afshar et al., (2016) highlighted that speaking is as important as knowing a language since it is the primary means of communication. According to Schafer, Aoyama, Ho, Castillo, Conline, Jones, and Thompson (2018), ESL students' attitudes towards a language and accents may affect their listening performance. Students can improve their speaking and listening skills by improving their classroom participation. When students actively listen and speak in an English classroom, they

can improve their oral language and have more practice and learning opportunities. The more practice that they do, the better they will develop language skills.

Similarly, most ESL students have difficulties in acquiring speaking skills. According to Afshar et al. (2016), speaking English is a difficult skill because students need to learn it through human interaction with at least one more person. This process requires students to understand what the other person is saying, analyze what that person means, and contribute their knowledge to the conversation. According to Afshar et al. (2016), the researchers stated that students need to develop connected context, have interaction skills, speak in various situations, manage the relationship between vocabulary accuracy and fluency, and elaborate on unfamiliar topics.

Speaking and listening comprehension skills are highly correlated to learners' reading comprehension skills and can help to improve learners' reading skills. According to Babayigit and Shapiro (2020), speaking and listening skills are similar, but reading comprehension skills are more demanding and vital when mastering a language. According to Fathi and Afzali (2020), reading skills can positively affect mastering a language. Therefore, using some teaching strategies in an ESL reading class, such as strategy-based reading comprehension instruction. Teaching reading strategies can help to solve two main problems for the ESL students: 1) improve learners' reading comprehension proficiency, 2) raise students' awareness of utilizing reading strategies, and 3) facilitate the process of mastering a language (Fathi and Afzali, 2020). Fathi and Afzali's (2020) study also concluded that teaching reading strategies on reading comprehension and applying these strategies in English as a second language is significant.

Besides the above language skills, grammar and vocabulary are the other two primary essential skills for ESL students. According to Huseynova (2019), English grammar is indispensable in improving second language development. ESL students work on grammar errors

and correctness to understand grammar rules. Grammar rules also help students to know how to construct sentences and paragraphs. It also helps connect words and word groups and create sentences in any language. However, most ESL learners have difficulties in learning grammar and vocabulary. According to Castillo-Cuesta (2021), Grammar and vocabulary are complex for two reasons. First, ESL learners do not have enough vocabulary to express themselves or describe a story. Second, ESL learners have limited skills to create topics and build their comprehension ability.

English speaking, listening, reading, grammar, and vocabulary skills are essential in learning English. However, Essay writing is the most crucial skill that ESL learners need to master. Essay writing is a process that involves speaking, listening, reading, grammar, and vocabulary skills. To master writing skills, students need to study and improve these skills. According to Sun (2014), writing is considered one of the essential skills in learning English because it is a process that includes selecting, combining, and organizing words into sentences to express an idea. The writing process is a complex process that requires highly organized words, forms, and context. As essay writing becomes more and more important in higher education, ESL students have more difficulties improving their writing skills. According to Rodriguez, Maria, and Mosquera (2020), most English teachers recognize the problem of writing academic essays for English learners because of the complexity of generating discourse by describing a topic. ESL learners also acknowledge that writing academic papers in English was challenging and frustrating. The reason might be that ESL learners are usually literate in their native language. Still, they might not have a strong literacy background and experience in writing academic tasks in English. According to Wei (2001), ESL students have difficulties in rhetorical and linguistic aspects in academic writing because they have different educational and linguistic

backgrounds. These students need more time to get used to the English-writing environment in the United States.

According to Skidman and Karathanos (2015), college-level ESL students find writing academic essays in English. English for educational purposes at the university level goes beyond basic academic literacy. ESL students have difficulties in essay-writing because of their education and linguistic backgrounds. Writing a university-level essay needs high-order thinking and research skills (Singh, 2019). ESL students are not well prepared for these skills in writing (Singh, 2019).

According to Skidman and Karathanos (2015), seventy-nine percent of ESL students want to study academic writing skills. About 40% of ESL students indicate they need more support from their ESL teachers to improve their writing skills (Sidman & Karathanos, 2015). Students need to acquire skills in solving academic tasks and figure out many different reading and writing problems (Pae, 2014). Essay writing is one of the most challenging tasks for students because it requires students to apply their knowledge to writing (Beccaria, 2019). ESL students may struggle with academic English essay-writing tasks because the rhetorical writing styles are different from their native language.

Most college ESL students have writing difficulties in rhetorical and linguistic aspects because of their different cultural, educational, and linguistic backgrounds (Wei, 2001). For instance, some students have limited vocabulary, poor grammar, spelling, and fluency. Traditional ways of teaching essay writing cannot address students' writing difficulties and help improve students' writing performance. According to Singla, Saini, and Paur (2016), traditional teaching, also called basic and conventional, was traditionally used in schools. It emphasized the teacher's role and responsibilities in the classroom and ignored students' participation. Teachers

were considered the controllers at the school, whereas students were the followers. Previous researchers, such as Zafar and Akhtar (2021), concluded that the traditional ways of teaching writing were ineffective and couldn't help students improve their writing skills.

According to Zafar and Akhtar (2021), traditional teaching methods are the methods that emphasize teachers' knowledge instead of providing students with opportunities to practice and ask questions. In traditional teaching methods, teachers usually give information to students, and students only have the chance to listen and follow teachers' instructions. The learning process was very passive. In Gao, Yang, Zhao, Wang, Zou, Wang, and Fans' (2005) study comparing problem-based learning and traditional teaching methods article, they concluded that traditional teaching methods are lecture-based. Students simply listen and take notes. They did not have opportunities to take responsibility for their own skills development and professional improvement. According to Zafar and Akhtar (2021), many traditional methods of teaching writing depend on teachers' knowledge of a subject. Students learn new knowledge directly from their teachers. However, this teaching method limits students' contribution and participation in the classroom. The authors also concluded that students would not gain all their knowledge if they did not participate in the class.

Researchers further demonstrated that traditional ways of teaching are considered outdated and cannot support students with higher-order thinking skills. Research indicated that academic writing in the United States was extremely difficult for non-native English learners due to their differences in culture, social, and linguistic background. Because of these differences, the writing teachers had to adjust their teaching approach to help accommodate students' needs (Ahmed & Al-Kadi, 2021).

In Taiwan, most English as a Foreign Language (EFL) teachers only focuses on presenting vocabulary and structure lectures instead of teaching students to comprehend the materials (Hou, 2019). According to Li and Jones (2019), most ESL teachers presented favorable attitudes in active learning. Nevertheless, they did not implement motivation and active-learning strategies to improve their instruction in ESL classes. ESL students cannot receive motivating and effective writing instructions for these reasons. Their essay-writing performance is constrained and cannot reach a standard proficiency level (Dimililer & Kurt, 2019). More importantly, teachers' comments on students' compositions are no longer adequate (Daweli, 2018).

Researchers have investigated many other teaching methodologies to help students improve their writing skills more productively and efficiently. According to Wei (2016), peer-review, as a part of the writing process and teachers' feedback, is one of the most popular teaching techniques. According to Wei (2016), peer-review, also known as peer feedback, peer evaluation, or peer assessment, are popular in higher education. It is defined as a process in which students review, evaluate, and provide feedback on their peers' work (Wei, 2016). Peer feedback has become a widespread approach in recent years because student-centered learning is becoming more and more popular. Several studies, such as Tai, Lin & Yangs' (2016) study, have demonstrated peer-review of several students' writing skills and efficacies in many perspectives, such as cognitive, affective, social, and linguistic. It is a practical approach to higher education to improve students' writing skills. Existing research has shown that peer-review positively impacts students' writing performance. Peer-review can improve ESL students' writing and eventually enhance second language acquisition (Esmaeelireview, Abasi & Soori, 2014). When working together with peers, learners can share ideas and feedback to improve their written work. Unlike

collecting input from a teacher, students can be more critical when revising their writing work (Daweli, 2018). According to Wei (2016), students were more likely to take the initiative to read others' essays when participating in a peer-review activity. They are likely to change their role from reader to critic when reviewing others' writing.

Background and Need

Teaching methods are essential in criticizing, and appropriate teaching methods can help transfer knowledge to students efficiently and effectively. According to Shah and Ahmad (2020), effective teaching methods can help provide students with clear guidelines and help to build on students' understanding of a topic. Hence, teachers' teaching methods can affect students' learning process and performance. Teachers' teaching skills, knowledge, and teaching methods are the key factors that can impact students' learning (Shah & Ahmad, 2020).

Teaching writing techniques have been outdated and ineffective in the past few decades. According to Singla, Saini, and Kaur (2016), traditional teaching, also known as fundamental and conventional teaching, shows that the teacher is considered the center of the learning process. Teachers have the power and responsibility to develop and design the lecture. According to Annadani and Udi (2021), traditional teaching methods such as giving lessons and having small group discussions were widespread. In these traditional teaching methods, teachers give most of the speech during the class, and students do not have much opportunity to participate in discussions or debates. In Tariq and Khans' (2020) recent study, they indicated that making errors and mistakes during the writing process is not valued in the traditional teaching classroom. Only the final writing product is valued. Teachers do not appreciate students' critical thinking and learning process. Furthermore, in the traditional teaching methods, students learn knowledge based on memorization, and they are not encouraged to participate in any classroom

activities to enhance their knowledge (Shah & Ahmad, 2020). This traditional teaching method only prepares students to get a better score in the exam rather than helps students to acquire a skill. In addition, according to Shah and Ahmad (2020), this kind of teaching method creates strict, fixed, and memorization-based learning for students. Students have a feeling of fear during this kind of teaching process.

The development of new teaching methods has helped to increase students' engagement and improve their academic performance. According to Singla, Saini, and Kaur (2016), the flipped classroom method is a new teaching method that helps gain students' attention and allows them to participate in the in-class activities. Flipped classrooms are considered one of the most popular and influential teaching methods. It is a process that includes pedagogical exercises that allow students to learn knowledge by using technology before they come to class. After that, teachers work with students to resolve complex problems by assigning group collaboration activities (Singla et al., 2016). It is an excellent teaching method that can contribute to students' superior learning outcomes, critical skills, and knowledge retention. Eventually, flipped classroom teaching methods can enhance students' performance and learning.

Another new teaching method, concept formation, has been widely used in the current classroom to enhance students' understanding and learning performance. It is considered an inclusive teaching method that creates topics for students by providing examples and clarifications (Shah & Ahmad, 2020). The concept formation teaching method can create a closer relationship between teacher and students. Teachers transfer knowledge to students by giving simple explanations and more in-depth information. Additionally, teachers present the ability at the beginning of class and then work with students to figure out the solution to a problem.

In addition, mobile learning has become one of the most popular teaching methods in higher education. Mobile learning allows students to learn virtually anywhere and anytime, depending on their preferences and convenience (Rouah, Bourekkadi, Khoulji, Slimani, and Kerkeb, 2021). There are many benefits of using mobile in a classroom. First, mobile learning allows teachers to instruct students by providing personalized learning content. Second, students can choose when and where they wish to learn the information. Third, mobile learning provides students with more options regarding the diffusion of training. For example, the learning content can be an e-learning format, a workshop, a webinar, or any accessible format applicable to students. Lastly, mobile learning is straightforward to access only if learners have a smartphone or tablet (Rouah et al., 2021).

Compared to the traditional teaching methods, new methods have contributed to students' learning experience, interactivity, and outcome. New teaching methods not only help to improve students' interactivity and learning outcomes but also help to enhance their learning process experience. Implementing new teaching methods to improve students' writing skills in college ESL writing classrooms is very important because writing skills are considered one of the most challenging language skills. According to Innali and Aydin (2020), writing is not a simple skill that students can acquire. It is a complex skill that requires students to understand the complex writing process deeply. However, writing skill has become more challenging because of insufficient time spent writingInnali Aydin, 2020). According to Shah and Ahmad (2020), the writing process includes pre-writing, brainstorming, reviewing and revising, editing, and finalizing.

According to Tariq and Khan (2020), teaching writing should be innovative to make the writing process more exciting and engaging. Self and peer-review are two new teaching methods

that can help enhance students' engagement and improve their learning performance (Tariq and Khan, 2020). Self and peer-review have been used widely in ESL education, especially in ESL writing classes. Nawas (2020) found that self-review helps students develop their cognitive skills, self-regulation skills, and productive language skills. In addition, students can improve their writing by critically analyzing their errors and monitoring their learning progress. Nawas (2020) also investigated that learners' level of self-efficacy can improve by doing self-reviewing activities. Learners can see their weaknesses, strengths, and room for improvement during this process. The self-review helps to increase students' awareness of their strengths and weaknesses (Salehi & Sayyar, 2017).

The self-review helps students be more responsible for their writing, and they have opportunities to reflect on their papers when self-reviewing their works. However, there are many challenges of self-review. According to Salehi and Sayyar (2017), the self-review did not help to improve students' writing skills over time. Peer-review further adds more value to students' writing process than self-review. Kayancan and Razi (2017) mentioned that according to Vygotsky's concept of Cognitive Development Theory, peer-review helps facilitate students' internalization and improvement of their writing skills because students can not only collaborate with their peers during this process but also develop their critical thinking and learning skills. Some other researchers, such as Nawas(2020), also stated that peer-review could help learners learn how other students write compared with self-review. Students can interact with others during the peer-review process to give and receive feedback, and it eventually helps to improve their writing skills more effectively.

According to Daweli (2018), peer-review can describe the process when students are reading and responding to each other's essay written tasks. This process also includes

commenting on each other's essays to improve their essay draft. Many researchers pointed out that peer-review has positive effects on stimulating and motivating students' writing ability (Yang, 2011). Consequently, more and more ESL teachers utilize peer-review in their writing classes. Researchers such as Berg (1999), Min(2006), and (Krashen, 1982), found that peer-review helps to provide students with constructive feedback (Yang, 2011). Students become more interested in reading and reading throughout the peer-review process. Furthermore, students' speaking and listening skills are improved when using the target language to convey effective information (Yang, 2011). Vorobel (2014) found that when students receive feedback from their peers, they can secure immediate improvement and have better performance in Essay writing.

There are some significant benefits of peer-review in previous studies. Salehi and Masoule (2017) concluded in their research that peer-review improved students' writing works in terms of the following components: format, vocabulary, grammar, content, and organization. It encourages students to revise their works and restructure their texts. In Thai, Lin, and Yangs' (2016) study, they demonstrated that peer-review effectively enhanced students' writing competence. This study investigated the combination of peer-review and teacher's feedback and only teacher's feedback on university students' writing performance on content, organization, grammar, mechanics, and style. This study was a quasi-experimental study that involved a nonequivalent pretest and post-test. In Thai, Lin, and Yangs' (2016) study, 107 first-year students were randomly assigned to a comparison group ($n = 53$) and an experimental group ($n = 54$). Students' writing assignments, peer-reviews, and teachers' feedback, instructions, and communications were online. There were three rounds of revisions in the study: initial, second, and final revisions. Each group of students received teachers' feedback before the second

revision. After that, students received teachers' feedback to finalize their work. In addition, the experiment group had an extra peer-review activity after the first revision. Therefore, the experimental group had four rounds of revisions. There were two graders in this study, with adopted grading criteria from Brown and Bailey (1984). Both groups of students received a survey to understand how they perceived the online writing activity and how helpful the peer-review and teachers' feedback were on their writing assignment. The Thai, Lin, and Yangs' (2016) study indicated that the combination of peer-review feedback and teachers' feedback positively influenced students' writing competence in the content, organization, grammar, mechanics, and style.

There are many benefits of using peer-review in an ESL classroom. First, students can benefit from the peer-review by providing and receiving feedback and suggestions from others (Loretto, DeMartion, and Godley, 2016). Students can share ideas about how they perceive each others' written work (Kim, 2015). Second, peer-review can give students more opportunities to ask questions and clarify to others. More importantly, students can learn from the mistakes of others and avoid making the same mistakes for themselves (Kim, 2015). Third, students can improve their critical thinking and analytical skills when collaborating. According to Hoogeveen (2013), peer-review skills can be used for self-improvement and are beneficial to their writing work. Fourth, students can learn to find linguistic mistakes and develop critical thinking and analyzing abilities (Rodas, 2021). Lastly, students can build their confidence when providing and receiving positive feedback from their peers. During the peer discussion process, students feel more comfortable and confident (Daweli, 2018). Students can benefit from the peer-review by improving their overall writing quality and increasing their confidence and communication skills.

Researchers such as Kurihara (2017), Bos and Tan (2019), and Wei(2016) showed that peer-review could not only improve ESL students' writing ability but also some other skills. Some previous research has shown that peer-review can help to improve students' performance in social strategies, and cognitive and metacognitive strategies when interacting with peers in ESL writing classrooms (Kurihara, 2017). Students can build relationships with other teammates during the peer-review process, develop their cognitive construction, and build confidence. In Kurihara's (2017) study, he also indicated that while interacting with peers, ESL students can improve their collaboration skills, eventually improving their writing skills. For example, during the peer-review process, students can collaborate with others by reading their peers' writing, providing feedback, and discussing questions. After this collaborative process, students can take their peers' feedback and revise their writing (Kurihara, 2017).

Peer-review has also played an essential role in group learning. According to Bos and Tan (2019), peer-review shows Vygotsky's notion of the Zone of Proximal Development that when learners can get help from others, they are more likely to complete the task. When learners work together, they interact to overcome complex tasks that seem impossible to accomplish independently (Bos & Tan, 2019). Learners find it easier to resolve the problem and improve written text when working in a collaborative environment. Peer-review is an essential collaborative learning process and a critical part of an online learning environment (Bos & Tan, 2019). This process needs students' active interaction to share feedback on each others' written work. Wei (2016) concluded that students could make recognizable improvements in their writing quality and capability after peer-review in the Essay writing class. Hence, students' teamwork skills, mutual understanding, and appreciation have significantly improved. For instance, students learned how to work with other students, listen to other students' suggestions,

show gratitude to others, etc. Bos and Tan (2019) also demonstrated the benefits of peer-review in improving students' critical and logical thinking, grammar, and vocabulary skills. Students can benefit from giving and getting feedback from others more cognitively.

Recently, some researchers found that college students' attitudes vary towards peer-review. According to Listyani (2019), she proved that about 85.37% of students in her study had positive attitudes toward peer-review. Only six students provided their negative feedback because of some external factors such as the uncooperativeness of their peers. Tai, Lin, and Yangs' (2015) found that most students believed peer view was helpful; however, they did not trust their peers' feedback. Even though this group of students did not have confidence when receiving feedback from others, they thought they had a great learning experience throughout that process (Tai, Lin, & Yang, 2015). Alt and Hadars' (2020) recent study on measuring students' perspective of peer-review feedback showed that students have positive feedback on peer-review because it helped them to transfer the knowledge to their practice

Purpose of the Study

This study was conducted to examine the effectiveness of peer-review in college English as Second Language writing classes to improve ESL students' writing scores. It also investigated if there was a statistically significant difference in college ESL students' writing scores between those who use both the self-checklist and peer-review worksheet and those who only use the self-checklist for writing correctness in a writing assignment. More specifically, this study was conducted to determine the influence of different areas on students' English writing scores, i.e., format/content/structure, grammar, vocabulary, and spelling. In addition, this study explored students' attitudes and opinions on peer-review in writing class.

Significance of the Study

Peer-review is one of the most important processes during the whole writing process. According to Salehi and Sayyar (2017), peer-review further adds value to students' writing process, and it is a part of the whole writing process. Previous research has shown that peer-review is essential in ESL writing. ESL students can improve their critical thinking skills while analyzing and revising their peers' written work (Daweli, 2018). According to Kurihara (2017), peer work can improve students' writing skills by collaborating. Most importantly, students can develop their writing and reading skills and improve their writing (Rodas, 2021).

This study is significant for four reasons.

First, this study expanded research beyond peer-review to improve college-level ESL students' essay writing scores. Second, this study provided college-level ESL students and ESL teachers with an effective way to use the peer-review worksheet in the writing process to help college ESL students overcome their essay writing challenges and difficulties. Third, this study helped encourage college-level ESL students and ESL teachers to facilitate a collaborative learning process in an ESL classroom. Lastly, this study raised awareness among language-learning institutions and international schools about using peer-review worksheets to improve ESL students' writing skills in fluency, grammar, vocabulary, and spelling.

Theoretical Framework

The theoretical framework in this study employs the concepts of Social Cognitive Learning theory and the Schema Theory. Social Cognitive learning theory provides the theoretical framework of this study by contributing to the idea of peer-review. It describes why and how learners can learn new knowledge by observing their peers' behaviors (Prati, 2012). It also explains that learners' behavior is changeable through social activities (Malone, 2020).

Schema theory explains the mental comprehension process, and now it is used to describe the information process procedure, information organizing procedure, and storing information procedure (Li, 2014). Both Social cognitive learning theory and schema theory explore how learners develop knowledge when collaborating with others. These two theories help explain the benefits of peer-review in a college ESL writing classroom.

Social Cognitive Learning

According to Malone (2002), Bandura developed the social cognitive theory to explain how each learner learns. After a few years, he expanded the idea and added cognitive processes, including thinking, memory, evaluating, and predicting results. Bandura's contribution to social cognitive theory explains that people learn by observing other people's behavior and outcomes (Malone, 2002). Bandura has studied various factors that influence learners' learning behavior and consequences, and one of the most recent focuses is self-efficacy. According to Hoose (n.d.), self-efficacy refers to learners' confidence in their ability. Students can improve their self-efficacy by attending social activities and experiences. Self-efficacy influences how people obstacle difficulties, reach goals and create successful outcomes (Hoose, n.d.). Learners can construct their knowledge by participating in a group activity. Bois, Krasyn, and Russ (2019) describe that social cognitive learning theory contributes to an engaging and collaborative learning environment where learners construct their knowledge of the learning content among a group of learners.

Many research studies have pointed out that social activities can significantly change learners' behavior and consequences. According to Malone (2020), there are some significant focuses of social cognitive learning theory: learning by modeling and imitation, learning by doing a symbolic activity (language and gesture), learning by doing forethought activity, etc.

This study addresses how social cognitive learning theory contributes to extended activity in college ESL writing classrooms. According to Malone (2020), symbolic activities help learners restructure their thoughts and knowledge. Eventually, these activities contribute to students' creation, cognition, and work outcomes. For instance, through symbolic activities, students can better understand the concepts, generate their thoughts, and then apply the knowledge in practice (Malone, 2020). According to Hoose (n.d.), a symbolic activity refers to how learners demonstrate their behavior through books, movies, video games, or internet sources.

Social Cognitive Learning suggests that when the social environment and cognitive processes are combined, people's behavior changes (Prati, 2012). According to DuBois, Krasyn, and Russ (2019), cognitive refers to "the extent to which the participants in any particular configuration can construct meaning through sustained communication." During the cognitive state, there are four phases: triggering event expiration, integration, and resolution (Garrison, Anderson, and Archer, 2000). During the first stage, learners had to think about a problem or issue and discuss it with their peers. During the second stage, learners brainstorm, question, and exchange ideas with their peers. In the next stage, learners construct their knowledge. In the last step, learners apply what they have learned to various practical situations (Garrison, Anderson, and Archer, 2000). According to Money (1995), people discover new knowledge from practice and experience. A person's behavior in a specific situation highly relies on the interaction that emphasizes social cognitive factors. Money's (1995) study about explaining a social cognitive learning theory in a group work classroom describes the interactive relationship among behavior, mental and personal factors, and the external environment. The study demonstrated a triangle relationship between Behavior (B), Cognitive and Personal Factors (P), and the External

Environment (E) variables. It illustrates that these three variables are interactional and can affect each other bidirectionally.

Social cognitive learning theory has rich research in education. According to Callinan, Zee, and Wilson (2018), social cognitive theory predicts that students significantly improve their essay writing skills when they engage and interact with their peers. Prati (2012) indicated that their cognitive operations and social experiences influenced the learners' behavior. For instance, students' cognitive behavior explains why they behave aggressively through a peer's observation. Students learn to bully by observing other students' bullying actions (Prati, 2012).

Schema Theory

Schema is the collection of learning knowledge that correlates to a specific topic, and it includes some background knowledge of that topic and hierarchical organization of the context (Sun, 2014). Neumann and Kopcha (2018) stated that a schema represents an abstract. It provides new learning materials with contexts and background information. Schemata, also called "building blocks of cognition", is essential for the development of learning, design, and technology (Neumann and Kopcha,2018).

Schema theory plays an important role in language learning. According to Bensalah and Gueroudj (2020), the term schema was created by the philosopher Kant (1781) and Psychologist Bartlett (1932). Kant (1781) firstly introduced the term schema. He suggested that schema could only take place only if it was associated with some information that humans already knew. After that, Rumelhalt (1980) used the term in relation to reading. He suggested that readers can only process new information only if they have background knowledge about that information. Readers' prior knowledge could make a difference on the process of understanding new information (Bensalah and Gueroudj, 2020).

According to Li, schema is from a Greek word meaning shape or plan. In English, people use schema or schemata. The theory of schema relates to many different fields, such as artificial intelligence, anthropology, psychology, and linguistics (Li, 2014). According to Li (2014), schema theory describes the mental comprehension process. It included the information process procedure, information organizing procedure, and storing information procedure. Cai and Wu (2020) concluded that schema theory helps structure and restructure knowledge. When humans absorb new information, the schema system will be activated, and it will restructure the information. According to Neumann and Kopcha (2018), it helps humans understand new information when a new schema happens. In addition, the new schema recalls previous knowledge to help interpret and restructure new information.

To create writing content, students need to recall their previous knowledge and add new knowledge based on their understanding. According to Sun (2014), schemata include learners' prior knowledge, knowledge of the new content, and reorganization of the information. Schema theory emphasizes the importance of learners' prior knowledge about a topic. Learners' comprehension can contribute to understanding the relationship between learners' prior knowledge and new knowledge. According to Farangi and Kheradmand (2017), there are three different forms of schema. The first schema is called linguistic schema, which indicates learners' linguistic knowledge. The second schema is named formal schema, which means the organizational structure of a topic. The third schema is called content schema, which is also called background knowledge. In the writing process, it is essential to activate learners' background knowledge to be more engaged in the learning process (Farangi and Kheradmand, 2017). Schema theory cannot only affect learners' writing process, but also the reading process. For instance, when learners are reading new materials, the schema will help students recall their

prerequisite knowledge to understand the new information more effectively (Cai and Wu, 2020). In Cai and Wu's (2020) study, they also concluded that when learners are reading new materials, the schema will restructure their knowledge and help produce a sense of cultural identity. For instance, learners from different cultural backgrounds will interpret reading material differently because of the cultural schema (Cai and Wu, 2020).

The Schema theory supports the development of this study because students utilized their prior knowledge about a topic to organize and create new content during the writing activities. The schema theory was applied when students were doing self-review and peer-review sessions because students needed to recall their prior knowledge in English fluency, grammar, vocabulary, and speaking to perform the writing tasks. In addition, students' understanding of the new knowledge and peers' feedback contributed to their final writing task.

Research Questions

To fulfill the purpose of this study, there are seven research questions:

1. To what extent was there a difference between the comparison and treatment groups on the baseline writing scores?
   a. To what extent was there a difference between the comparison group and the treatment group students' baseline writing scores on FCS (format, content, structure)?
   b. To what extent was there a difference between the comparison group and the treatment group students' baseline writing scores on grammar?
   c. To what extent was there a difference between the comparison group and the treatment group students' baseline writing scores on vocabulary?

  d. To what extent was there a difference between the comparison group and the treatment group students' baseline writing scores on spelling?

2. To what extent was there a score difference between the self-review results and the peer-review results within the treatment group for the post-writing test?

  a. To what extent was there an FCS (format, content, structure) score difference between the self-review and the peer-review results within the treatment group for the post-writing test?

  b. To what extent was there a grammar score difference between the self-review and peer-review results within the treatment group for the post-writing test?

  c. To what extent was there a vocabulary score difference between the self-review and peer-review results within the treatment group for the post-writing test?

  d. To what extent was there a spelling score difference between the self-review and peer-review results within the treatment group for the post-writing test?

3. To what extent was there a difference between the comparison group and the treatment group on the post-writing scores?

  a. To what extent was there a difference between the comparison group and the treatment group students' post-writing scores on FCS (format, content, structure)?

  b. To what extent was there a difference between the comparison group and the treatment group students' post-writing scores on grammar?

  c. To what extent was there a difference between the comparison group and the treatment group students' post-writing scores on vocabulary?

     d. To what extent was there a difference between the comparison group and the treatment group students' post-writing scores on spelling?

4. To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing?

     a. To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing in FCS (format, content, structure)?

     b. To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing in grammar?

     c. To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing in vocabulary?

     d. To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing in spelling?

5. To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing?

     a. To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing in FCS (format, content, structure)?

b. To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing in grammar?

c. To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing in vocabulary?

d. To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing in spelling?

6. What did the survey results indicate the student feedback regarding peer-review for the English writing?

7. What parts were most useful or challenging regarding the use of peer-review for English writing?

Definition of Terms

Below are the definitions for the terms included in the study. Please be aware that the descriptions provided on the list only apply to the study.

Computer-supported Collaborative Learning: Computer-supported Collaborative Learning (CSCL) theory is an emerging branch of the learning science that focuses on how individuals can benefit from using computers (Stahl, Koschmann, & Suthers, 2005).

EFL (English as a Foreign Language): EFL is a term that stands for English as a foreign language (Artigliere, 2019). It describes English as not commonly used for education, work, or government in a country or context (Brown, 2007).

ESL (English as a Second Language): ESL is an English second language acronym (Singh, Hamilton & Soble, 2021). It stands for English as second language learners living and working in some countries where English is their dominant language (Harmer, 2007).

Peer-review: Peer view is a process that includes collaborative and interactive learning. It also includes a component of the logical thinking process in an online learning environment. Learners can receive feedback more cognitively. Besides, learners can process their higher-order thinking skills to make self-correction and make suggestions for improvement (Bos & Tan, 2019).

Self-review: Self-review is the process when learners review their assignments by themselves. Self-review can help develop learners' cognitive, self-regulation, and productive language skills (Nawas, 2020).

Schema Theory: Schema is the collection of learning knowledge that correlates to a specific topic and it includes some background knowledge of that topic and hierarchical organization of the context (Sun, 2014).

Social Cognitive Learning: Social Cognitive Learning explains how people learn by observing other people's behavior and outcomes (Malone, 2002). It is a theory developed by Bandura to add thinking, memory, evaluating, and predicting results to the incognito process.

Zone of Proximal Development (ZPD) Case-Based: Zone of Proximal Development is a key concept of Vygotsky's nation of sociocultural learning. He defines the ZPD as the zone between learners' potential development and their actual level of development. Learners can learn new knowledge or skills when working collaboratively with peers or partners (Lisa, 2013).

CHAPTER II

REVIEW OF THE LITERATURE

Over the past years, English has become more critical in higher education due to globalization (Shimaya, Yoshikawa, Ogawa, and Ishiguro, 2020). Learning English has become one of the most challenging subjects for non-English speakers. Many researchers, such as Lin (2015), Singla, Saini, and Paur (2016), and (Hou, 2019), along with many other researchers, have investigated the difficulties of mastering English skills for English as second language speakers. Among those English skills, writing is the most challenging skill. According to Ahmed and Al-Kadi (2021), academic writing classes in the United States were extremely difficult for non-native English learners due to their differences in culture, social, and linguistic background. Because of these differences, the writing teachers had to adjust their teaching approach to help accommodate students' needs. Researchers such as Wei (2016), (Daweli, 2018), (Tai, Lin & Yang, 2016), as well as many other researchers have examined that the traditional ways of teaching writing skills do not help college students to improve their essay writing scores anymore.

Peer-review, a new teaching writing technique, has been widely applied to many ESL/EFL classroom settings to improve students' essay writing performance (Ho, 2015). According to Daweli (2018), peer-review, also called "peer-feedback," "peer response/revision," or "peer editing," has become a popular and effective method to motivate and improve students' writing ability. Peer-review is considered invaluable for English language learners because it does not help students improve paper organizing skills and helps them improve writing revision skills (Ahmed & Al-Kadi, 2021). Ahmed and Al-Kadi (2021) indicated that peer-review had been described as the technique to facilitate the critique conversation among students by sharing

personalized knowledge while dealing with a challenging writing task. Implementing the peer-review technique in the L2 writing classes also help accelerates students writing revision and editing process. Although the effectiveness of peer-review in a college ESL writing classroom has been studied across a range of settings, most studies have focused on the positive effects of peer-review on improving students' collaboration, writing performance, critical thinking skills, confidence, and communication skills. Few researchers have investigated peer-review in a virtual college ESL writing classroom setting to improve students' writing scores. In addition, very few scholars have examined the effectiveness of peer-review in a college ESL writing classroom to enhance students' writing scores in format, content, structure, spelling, grammar, and vocabulary.

This study was conducted to examine the effectiveness of peer-review in college English as Second Language writing classes to improve ESL students' writing scores. It also investigated if there was a statistically significant difference in college ESL students' writing scores between those who use both the self-checklist and peer-review worksheet and those who only use the self-checklist for writing correctness in a writing assignment. More specifically, this study was conducted to determine the influence of different areas on students' English writing scores, i.e., format/content/structure, grammar, vocabulary, and spelling. In addition, this study explored students' attitudes and opinions on peer-review in writing class.

This chapter presents a review of related literature studies to provide a solid foundation for the present study. This chapter introduced an overview of the literature that provides a theoretical foundation and background for the current study. There are four sections in this literature view chapter. The first section introduced peer-review in college English as Second Language writing classrooms. The second section discussed the benefits of peer-review in ESL

writing classrooms. The third section summarized the challenges of using peer-review in ESL writing classrooms, and the fourth section introduced students' perspectives of peer-review in a writing classroom**.** The first section provides an overview of some relevant literature and research on the general use of peer-review in college ESL writing classrooms. The second section contains some challenges encountered when using peer-review in an ESL writing classroom. The third section focuses on some benefits of peer-review in an ESL writing classroom. The fourth section details students' perceptions of the peer-review process in a writing classroom.

The Use of Peer-review in College ESL/EFL Writing Classrooms

Researchers investigating the use of peer-review in higher education have demonstrated that students' writing scores are significantly improved by implementing peer-review in a writing class. In this section, some findings on peer-review in an ESL writing classroom are introduced. Peer-review in college ESL writing classes can improve students' writing performance and skills. We (2016) examined the use of peer-review in a college ESL writing class by using the Action Research model (Wang & Zhang, 2014). The study was conducted among 45 college ESL students. Among these 45 students, 12 of 45 students used peer-review for a writing assignment, and 33 students didn't use peer-review after a writing assignment. The study reported students had a strong willingness for peer-review. With the peer-review collected, the researcher noticed that only 1 of the peer feedback was critical feedback. All other feedback was affirmative feedback. The findings indicate that students were more likely to provide affirmative feedback to others. In contrast, another researcher Ho (2015), did a study to examine the effectiveness of utilizing peer-review in an EFL writing classroom, but had the opposite result. The researcher conducted a study among 13 Taiwanese university students to explore how peer-

review and in-person review influence students' revision, comment categories, and interpretation of peer feedback. An online peer-review software *OnlineMeeting* was used to facilitate the peer-review activities in the writing classrooms. According to Ho (2015), this study implemented a modified writing cycle from Min's (2006) study. The results of this study revealed that both in-person and online peer-review was highly influential in resolving students' writing problems, and both methods have created constructive and revision-oriented comments instead of complimentary comments by the end of the review process. An interesting finding from this study was that peer-review among Asian ESL/EFL learners was not effective because they were more likely to provide complimentary feedback to their peers (Ho, 2015).

Some studies have shown that peer-review has an insignificant impact on ESL/EFL students' writing performance (Esmaeeli et al, 2014; Satake, 2021). As a newly written teaching technique, peer-review was considered a popular technique among other new teaching methods. Implementing peer-review training into the peer-review process effectively enhances students' learning experience and writing quality. Esmaeeli, Abasi, and Sooris (2014) investigated the influence of peer-review training on the advanced Iranian EFL students' writing revisions in Larestan Islamic Azad University. The researchers evaluated the differences between students' revisions before and after peer-review training. This study was a 12-week study with 12 male and female students. Students were asked to write their drafts and do revisions after embedding peers' feedback. This study found that students incorporated more input into their writing revisions after peer-review training. It also concluded that peer-review training benefited students a lot in improving their writings. Expressly, the findings in this study indicated that 34% of students' comments were incorporated into their writing revisions. This study added a training session before the peer-review activity, and the results showed that the percentage of students'

comments increased to 66%. This increased rate indicates that peer-review plays an essential role in students' writing revisions; what's more, giving the instructions before a peer-review activity can help to improve students' writing performance (Esmaeeli et al., 2014). This study indicates that peer-review activity plays an essential role in improving students' writing revisions and implies that giving some clear instructions before a peer-review activity is critical.

As for peer-review patterns in the ESL writing class setting, researchers also found that different peer-review patterns had various aspects of impact on ESL students' writing performance. According Farani's et al.(2019) recent study evaluated the effectiveness of face-to-face peer-review and mobile-mediated peer-review on students' academic writing performance. The study was conducted on seventy-two English for Academic Purposes (EAP) students who were enrolled in eighteen-session educational writing classes at the Canadian University. Participants from each group used different peer-review patterns to evaluate their peers' writing skills in frequency, type, area, nature, and IELTS assessment criteria. This study indicated that the mobile-mediated peer-review groups' revision-oriented comments and actual revisions made numbers were significantly higher than the face-to-face peer-review group. Moreover, the mobile-mediated peer-review group made more revision-oriented comments than the face-to-face peer-review group. Overall, the results of this study showed that both mobile-mediated peer-review and the face-to-face peer-review group improved ESL students' writing skills even though the mobile-mediated peer-review performed better than the face-to-face peer-review group (Farahani et al., 2019).

In addition to peer-review feedback, teacher-led feedback can also help to improve students' writing performance. The discussion about comparing the effectiveness of peer-review feedback and teacher-led feedback in a college writing classroom has been addressed in the

literature. According to Tai, Lin, and Yangs' (2015), they compared the influence of students' peer feedback and both students' and teachers' feedback on a student's writing assignment. One hundred seven undergraduate students from a 2-year vocational nursing college in Taiwan participated in this study, including the control group (m=53) and the experimental group (m=54). In the experimental group, students received both peers' and teachers' feedback; however, students only received peer feedback in the control group. The result of this study shows that there were statistically significant differences between the control and experimental groups (Table 1). Table 1 indicated that the experimental group performed better than the control group on all scales (Tai et al., 2015). The results indicated that students who received feedback from both teachers and peers showed greater improvements than those who only received feedback on grammar, organization of content, and writing style.

Table 1

Independent t-Test of Pre-test and ANCOVA Analysis of Writing Performance (Tai et al., 2015)

Measure	Experimental (TF+PR) M (SD)	Control (TF) M (SD)	t	Experimental (TF+PR) M (SE)	Control (TF) M (SE)	F	Partial η^2
Content	2.32 (.87)	2.50 (.64)	−1.22	2.64 (.10)	2.18 (.10)	9.51**	.08
Organization	2.26 (.90)	2.44 (.69)	−1.16	2.58 (.10)	2.13 (.10)	10.62**	.09
Grammar	1.74 (.90)	1.83 (.72)	−0.618	1.96 (.10)	1.62 (.10)	4.92*	.06
Mechanics	1.91 (.88)	2.04 (.75)	−0.829	2.13 (.10)	1.81 (.10)	4.78*	.04
Style	2.02 (.91)	2.06 (.66)	−0.240	2.24 (.10)	1.84 (.10)	8.16**	.07
Holistic score	2.08 (.85)	2.19 (.62)	−0.764	2.35 (.09)	1.90 (.09)	12.68**	.11

Note. ANCOVA = analysis of covariance.
*$p < .05$.
**$p < .01$.

Even though students may benefit more from combined feedback from peers and teachers, Schunn, Godley, and Demartinos' (2016) study demonstrated that students tend to give more accurate feedback when provided with well-established rubrics. Schunn, Godley, and Demartinos' (2016) extended the peer-review study and investigated the reliability and validity of peer-review in high school advanced placement essay writing classrooms. This study introduced that students tend to give more accurate feedback with a well-designed rubric. This rubric helped to guide students while reviewing and providing feedback to others. This study also explained the logic and method used in a well-designed rubric and the reliability and validity of students' writing assessments after being reviewed by teachers and students. One thousand two hundred fifteen students and 28 AP English teachers participated in this study. This study used an online peer assessment tool, Peerceptive, to conduct the peer-review activity. Students uploaded their writing assignments to Peerceptive, and the system randomly distributed the writing assignments to each student. After that, students used the rubrics to review and provide feedback to each other. In the end, students used peer feedback to revise their writings. This study used essay prompts, Peerceptive, and the survey as the instrument. The findings from this study indicated that peers' feedback was helpful. Including peer-review in writing, the classroom was one of the most effective ways to provide students with immediate feedback, understand criteria, and advise improvement. Studies in college ESL writing classrooms have shown that if students have a rubric during the peer-review process, the peer-review feedback will have strong validity and reliability (Schunn et al., 2016). Their study indicated that implementing a well-designed writing rubric was helpful for students to give higher scores to their peers. Also, most students thought having peer-review was helpful for them to improve their writings.

Even though the effectiveness of peer-review in a college ESL writing classroom has been examined, some other researchers, such as Yang (2011), have cautioned against the above findings regarding peer-review feedback and teacher-led feedback. In Yang's (2021) study, the researcher examined that teachers' input on ESL students' writing has a more substantial effect on students' writing scores than students' peer-review feedback. In Yang's study (2011), the researcher investigated peer-review and teachers' feedback in a writing class at Taiwan's University of Science and Technology. There were 50 college students in this study, and all of these students had finished introductory grammar courses in the past. This study used writing drafts, a questionnaire, and two interviews. All participants completed a questionnaire in this study, and the results were collected to evaluate students' attitudes toward peer-review. In addition, an interview measured teachers' perspective on peer-review in this study. There were two interviews in this study. There was one interview at the beginning of the semester and another one at the end of the semester. The interview results indicated that most students believe teachers' comments and feedback were more helpful than peers' feedback; it also concluded that peer-review was an effective method to improve students' explicit correction and fix grammar errors (Yang, 2011).

Some other studies have also indicated that peer-review does not have insignificant effects on ESL learners' writing performance ((Manglesdorf, 1992; Mendonca and Johnson, 1994; Sengupta, 1998). These studies showed that students do not fully trust their peers' comments from the peer-review, and they only selectively incorporated the feedback they believed was correct into their writings. These researchers also found that learners preferred to take feedback from their teachers rather than their peers. Manglesdorf's (1992) study indicated that Asian students tended to trust teachers' feedback instead of their peers' feedback because

these groups of students were in a teacher-centered environment, which led them to rely on teachers' feedback. In this study, the researcher Ahmed(2021) explained several reasons why peer-review was not as effective as teachers' feedback. First, students did not trust their peers' level of knowledge while providing feedback. Second, most students believed that it was a time-consuming process to read drafts, give and incorporate feedback, and discuss feedback with each other. Third, students had a negative experience because teachers were not involved in the peer-review process and did not provide sufficient feedback.

Finally, miscommunication was an issue between the writers and reviewers because of their differences in culture, language backgrounds, and communication styles (Ahmed, 2021). Ahmed's (2021) study discovered the problems that appeared during the peer-review process. This study was conducted on 162 instructors and students at a public university in the United States.

Peer-review in college ESL classrooms has positively impacted students' writing performance. It helped students improve their grammar, content, word structure, and paragraphs. Providing clear instructions can help enhance the validity of peer feedback. A well-designed rubric can be beneficial for students to give higher scores.

Benefits of Using Peer-review in ESL Writing Classrooms

The benefits of peer view in a college ESL writing classroom have been investigated in literature with various findings and results in the past decades. According to Tai, Lin, and Yangs' (2015), several literature studies have demonstrated that peer-review can help enhance ESL/EFL students' writing skills and efficacies in many ways, such as linguistic and social communication logical thinking emotional expressions. Peer-review is a powerful tool that has been used in many universities to enhance ES/EFL students' writing capabilities.

Research has been conducted on the benefits of peer-review to improve students' writing (Wei, 2016; Lisyani, 2019; Satake 2021). According to Wei (2016), peer-review and peer feedback have benefited students' essay writing. Students did not entirely rely on teachers' feedback anymore, and teachers' feedback was not the only recourse that students can learn. Students' high motivation during the peer-review process facilitated their team cooperation and co-support abilities. Students started to take the initiative to be the reviewer and tried to participate in this process to help each other. Wei (2016) also indicated that students were more active in asking for peer-review support and feedback. Peer feedback is one of the highest recommendations in pedagogical practices for college ESL students. Other studies have examined the benefits of peer-review in a writing classroom. According to Lisyani (2019), students can also improve their reading, language use, critical thinking, and analysis skills during the peer-review process. Students can also build trust and friendship during the peer-review process even though they need to give critical feedback to each other (Listyani, 2019). Another great benefit of peer-review is that students can learn to be good listeners and speakers while collaborating with others during the peer-review process. This process is very challenging but very helpful for students. Listyani's (2019) study analyzed the differences between male and female students' responses to peer-reviews in Indonesian college academic writing classes. There were forty-one Indonesian students in this study. There were 21 students in the experimental group and 20 in the control group. A questionnaire was provided to these students one semester before the experimentation. Students wrote a journal about peer-reviews at the end of the semester. During the experiment, the students had guidance to provide feedback on other students' journals based on the teacher's checklist. The results showed that most students (85.37%) had very positive feedback on the peer-review process. Only a few students have

complaints about peer-review because of the hostile experience due to some critical feedback. Students state that:

> In a peer-review, I can correct, give comments, or offer suggestions easily because I assess someone else's work. By having someone else review my work, I will know about the problems that I have in my essay. From his/her review, I can improve my writing and have some new ideas from my classmate's advice. Peer feedback and lecturer feedback are beneficial in the teaching and learning process. It allows students to revise their work, for example, in an essay. Peer and lecturer feedback will make students learn from something wrong in their work (Listyani, 2019).

This study further indicated that out of 24 female students, only 3 of them perceived the peer-review process as a negative experience. However, among 15 male students, only two male students provided negative feedback. To conclude, this result indicated that female and male students have very similar experiences with peer-review. Another conclusion in this study was that female students tend to have more stress than male students. The results state:

> Women are more subject to distress. Men and women are different in physically, mentally, and cognitively, that is, in their way of thinking (Listyan, 2019).

Similarly, in Satake's (2021) study, the researcher conducted a study among fifty-seven EFL students from a private university in Japan. The purpose of this study was to investigate the relationship between Japanese EFL students and their peer-review activities in the writing class. All participants were asked to join a peer-review activity after their regular writing process by using a peer-editing worksheet. Once the peer-review worksheets were returned to each

participant, they wrote "N - not adopt" or "A - adopt" for each comment they received from their peers. The results from this study showed that peer-review had various benefits to students. For instance, students learned mistakes from a different perspective, and they learned how to provide meaningful feedback to others to help them improve their writing.

By expanding the benefits of peer-review in a college ESL writing classroom, Kurihara (2017) investigated how peer-review can help to improve high school students' writing skills after implementing their peers' feedback. His study addressed the influence of peer-review on the development of writing skills among 35 high school students in Japan. These 35 high school students were in the last year of their high school in Japan. The experimental group did the peer-review activity after getting teachers' feedback. However, the control group only got feedback from teachers. Both groups of students completed the first draft of their essay before the review process. The author analyzes their scores from their first draft and second revised draft to identify students' improvement. The results showed that both the control and experimental groups had improved on the reviewed draft. ANOVA was conducted to analyze students' scores in both the first and second drafts. The results indicated that there is a significant interaction between the treatment and cohesion, mechanics, and other aspects. The *t*-test results indicated that the experimental group had greater improvement than the control group at the 0.01 level. However, the control group demonstrated a greater improvement at the level of 0.05 for mechanics. The results showed that peer-review was significantly helpful to students' essay writing process (Kurihara, 2017).

College students can benefit significantly from peer-review for three reasons. First, students have higher motivation for reviewing other students' essays. Second, students have

opportunities to learn what's wrong and make revisions based on their peers' feedback. Lastly, students can build trust and friendship during the peer-review process.

Challenges of Using Peer-review in ESL Writing Classrooms

Previous research has investigated the benefits of using peer-review in an ESL college writing classroom, but there were many challenges to peer-review. Researchers have shown that peer-review has not been evaluated enough in recent research. According to Michael & Julian (2012), peer-review in higher education has not been evaluated for its potential benefits. Some scholars have investigated the possible benefits of peer-review in higher education, but these studies have been relatively limited to a specific subject. Kelly (2015) mentioned that peer-review did not effectively support the learning goals of increasing students' writing scores. Students had a low performance during a peer-review session when they were trying to figure out how to identify a mistake or correct a grammar error. Students also complained that harsh comments from their peers have negatively impacted the efficiency of peer-review (Kelly, 2015).

Recent studies on the effects of peer-review in the ESL writing class found that peer-review does not have insignificant effects on ESL learners' writing performance ((Manglesdorf, 1992; Ahmed, 2021; Lai, 2010; Zhao, 2018). These studies showed that students do not fully trust their peers' comments from the peer-review, and they only selectively incorporated the feedback that they believed was correct into their writings. These researchers also found that learners preferred to take feedback from their teachers rather than their peers. The study from Manglesdorf (1992) indicated that Asian students tended to trust teachers' feedback instead of their peers' feedback because these students were in a teacher-centered environment, which led them to rely on teachers' feedback. In this study, the researcher Ahmed (2021) explained several

reasons why peer-review was not as effective as teachers' feedback. First, students did not trust their peers' level of knowledge while providing feedback. Second, most students believed that it was a time-consuming process to read drafts, give and incorporate feedback, and discuss feedback with each other. Third, students had a negative experience because teachers were not involved in the peer-review process and did not provide sufficient feedback.

Finally, miscommunication was an issue between the writers and reviewers because of their differences in culture, language backgrounds, and communication styles (Ahmed, 2021). In Ahmed's (2021) study, it discovered the problems that appeared during the peer-review process. This study was conducted on 162 instructors and students at a public university in the United States.

Other studies have examined that ESL students had a negative learning experience with using peer-review in the writing class. Lai's (2010) examined automated writing evaluation and peer evaluation effectiveness among 22 English as a foreign language student in Taiwan. Lai (2010) discussed how students used the automatic writing and peer evaluation methods, the evaluation process, and how students perceived these two different evaluation methods. The results of this study found that some students had a negative perspective toward peer evaluation. Three main issues made the peer-review process difficult: (a) the effectiveness of using peer-review feedback, (b) the way students incorporate peer-review feedback into their revisions, and (c) students' thoughts about peer-review and peer revision. The results revealed that students did not consider peers as the real audience for their writing, and some may even not trust their peers. Students were trying to figure out what teachers wanted to see instead of what their peers suggested during the peer-review process. The researchers found that students' background and cultural differences could influence how they engage with their peers. In addition, students might

be afraid of hurting their peers by providing harsh feedback or comments. Another problem that Lai (2010) saw in her study was that computer anxiety was another important issue that limited students' peer-review behavior. Students tend to feel more anxious and provide negative feedback when engaging with their peers in an online environment.

Similarly, research from Zhao (2018) examined that ESL/EFL students have negative attitudes towards peer-review. His study was conducted among 25 college students at different colleges and universities in China. This study aimed to explore peer-review writing tutors' perceptions of peer-review. The author interviewed 25 writing tutors from various colleges and universities and collected their perspectives regarding the use of peer-review and peer assessment in a writing classroom. The results of Zhao's (2018) study indicated that college students in China had hesitation when using peer assessment in their writing assignments because of 1) inexperience and limited instructions before the peer-review and peer assessment, 2) limited English proficiency and learning motivation, 3) conflicts between the concept of teacher-driven culture and student-center culture. Zhao's study further explained that college students had negative feedback on peer-review due to their limited English proficiency and cultural differences. Some students reported that:

> My students' English proficiency is too low. This makes it impossible to use peer assessment with them because it is hard for them to find mistakes for their peers; instead, they might provide wrong advice (Zhao, 2018).

Some other students explained that it was more helpful to get feedback from the teacher instead of peers.

> If we have to check on the correctness of peer feedback, why don't we spend that time providing teacher feedback which would be more helpful than peer

feedback? Plus, it is embarrassing and discouraging for students whose feedback was marked as wrong. Their peers wouldn't trust their feedback in subsequent writing tasks (Zhao 108).

In summary, even though there are a significant number of studies that highlight the benefits of using peer-review, there are some new challenges and difficulties that limit students' essay writing performance: (a) Students had difficulties reading harsh comments from their peers (b) Students have limited instructions and (c) Students have low English proficiency.

Students' Perceptions of Peer-review Process in A Writing Classroom

Education scholars have discussed ESL students' perceptions toward peer-review for the past few decades. This literature review section includes some recent studies about college ESL students' attitudes and perspective regarding peer-review in a writing classroom. Researchers have found that a majority of students have positive perceptions of peer-review. Students agreed with the benefits of peer-review in a survey that Schunn, Godley, and DeMartino (2016) conducted. In figure 1, the result shows that more than 80% of students agreed that they learned from seeing errors in other students' essays. More than 70% of students agreed that they received useful feedback from their peers on how to improve their essays. More than 80% of students agreed that they learned successful strategies from other students.

Figure 1

Percentage of Students Agreeing or Strongly Agreeing With Each Possible Benefit of Peer Assessment of Writing (Schunn, Godley, and DeMartino, 2016)

Percentage of Students Agreeing or Strongly Agreeing With Each Possible Benefit of Peer Assessment of Writing (With Standard Error Bars)
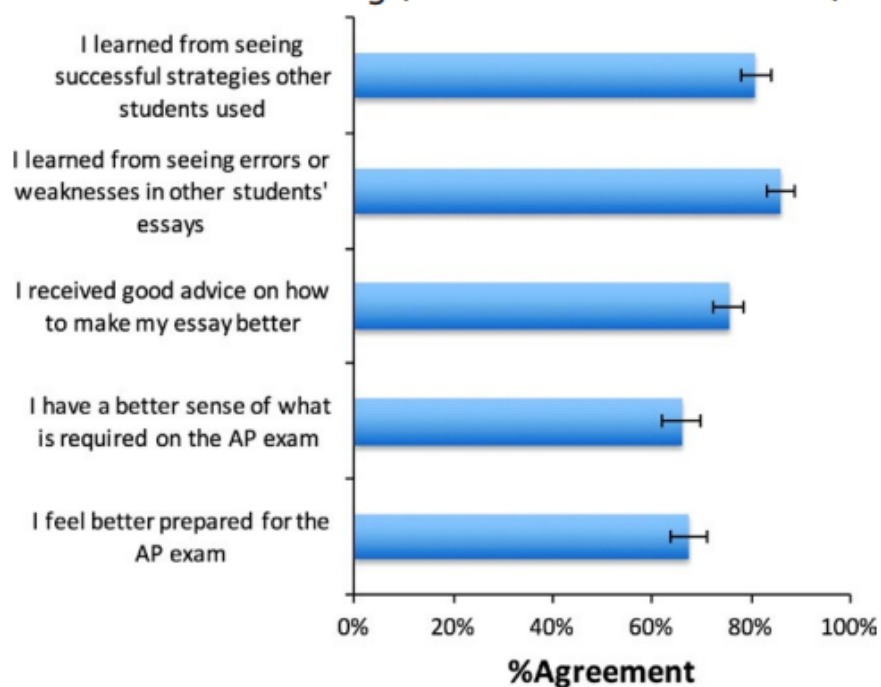
Note. AP = Advanced Placement.

According to Alt and Hadars' (2020) recent study on measuring students' perfections of peer-review feedback, it showed that students have positive feedback on peer-review because it helped them to transfer the knowledge to their practice, and they were able to utilize that knowledge to contribute to group works. Students said, " I will use the exercises I developed and experienced in my group and the other group, and I will apply the Halliwick principle for an enjoyable water experience"; "I already apply the disengagement principle with children whom I teach to swim - physical disengagement and eye-contact disengagement" (Alt & Hadars, 2020). A recent study by Nkhoma (Alt & Hadars, 2020) mentioned that engagement with peers and groups improved students' emotional engagement, team cooperation, and personal learning behavior.

Loretto et al. (2016) also examined that students have a positive attitude toward peer-review to improve their writing performance. Leretto et al.'s (2016) study used SWoRD as an online peer-review system to conduct the peer-review activity and used online questions to collect students' feedback on the peer-review process. SWoRD is an online peer-review system. Teachers used SWoRD to manage the whole peer-review process, including uploading materials, adding rubrics and criteria, setting due dates for writings, etc. A total number of 513 students participated in this peer-review activity. This study used both quantitative and qualitative methods to collect and analyze data. The results from the students' questionnaire showed that 82% of students agreed or strongly agreed that it was helpful to use SWoRD as an online peer-review tool to improve their writing revisions, and 80% of students agreed that peer-review was beneficial to their writing revision (Loretto et al., 2016). This study found that most students had positive feedback on peer-review as it had the following benefits. First, it mentioned that anonymity helped students be more honest, so their feedback was critical and fair. Anonymity gave students more opportunities to be confident and less fear of nervousness when providing feedback to their peers. The authors presented a survey to 503 students about giving and receiving feedback using peer-review. The survey results showed that students felt it was crucial to make reviewers anonymous during the peer-review process (Loretto et al., 2016). About 47% of the students agreed that anonymity helped them to be more confident when giving feedback. About 40 of the students strongly agreed with this statement. Anonymity allows students to be more honest and confident when giving critical feedback to others.

In summary, most college students have very positive feedback on peer-review. Peer-review can help students learn different strategies from their peers. It can give students more

opportunities and confidence when collaborating with others. It can improve students' emotional engagement, team cooperation, and personal learning behavior.

Summary of the Literature

Peer-review has added great value to college ESL students' writing process, and it helps to transfer students' knowledge to their practice. In addition, it allows students to utilize their knowledge to improve their writing scores by giving and receiving feedback, revising and restructuring their works, and collaborating with others. Even though the use of peer-review in a college ESL writing classroom, peer-reviews' benefits and challenges, and student's perceptions of the peer-review process in a writing classroom, have been studied extensively across diverse results, there are very few research studies investigating using peer-review in a virtual college ESL writing classroom setting to improve students' writing scores. The detailed review of literature studies has some gaps in the research. First, the classroom settings and cultural diversity are limited in the current research. Second, the comparison between self-checklist and peer-review in a college ESL writing classroom has not been studied.

CHAPTER III

METHODOLOGY

Restatement of the Research Purpose

This study was conducted to examine the effectiveness of peer-review in college English as Second Language writing classes to improve ESL students' writing scores. It also investigated if there was a statistically significant difference in college ESL students' writing scores between those who use both the self-checklist and peer-review worksheet and those who only use the self-checklist for writing correctness in a writing assignment. More specifically, this study was conducted to determine the influence of different areas on students' English writing scores, i.e., format/content/structure, grammar, vocabulary, and spelling. In addition, this study explored students' attitudes and opinions on peer-review in writing class.

This chapter describes the research design, the research setting, participants, protection of human subjects, instrumentation of the study, procedures for data collection, intervention, data analysis, and limitations.

Research Design

This research was a mixed-methods study with a quasi-experimental design, including qualitative and quantitative components. The quantitative component included participants' essay writing scores on the baseline writing and post-writing assignments. The quantitative component was an online survey for the treatment group. These components examined the effectiveness of peer-review in improving college ESL students' writing scores. There were two groups of participants *(n=25)* in this study. Students were assigned randomly to the treatment and the comparison group in those classes. There were 13 students in the comparison group and 12 students in the treatment group. The independent variables in this research design were the

peer-review worksheets and the self-checklist interventions. The dependent variables in this study were students' writing scores on the baseline writing assignment, which used a self-review checklist, and the post writing assignment, which used a peer-review editing worksheet. See the research design in Table 2.

Table 2

Research Design

Week	Treatment Group	Comparison Group
Week 1	Students completed the baseline writing – writing assignment 1.	Students completed the baseline writing – writing assignment 1.
Week 2	Students completed the post writing – writing assignment 2 and used the self-checklist to do a self-review. Students did a peer-review on the post-writing. Grade 3 for the peer-review writing assignment was collected.	Students completed the post writing – writing assignment 2 and used the self-checklist to do a self-review. Grade 2 for the self-review writing assignment was collected.
Week 3	Students signed the consent form and completed an online survey.	
Week 4	Data collection and analysis	Data collection and analysis

Note. The self-review checklist was included at the end of every chapter of the students' textbook.

Both treatment and comparison groups of students received the same writing tasks for the baseline writing (writing assignment 1) and the post writing (writing assignment 2). In the baseline writing, students from both groups used the same essay prompts, grading rubrics, and self-review checklists to do a self-review after receiving their grades for the baseline writing assignment. In week 2, all students did a post-writing assignment with a different writing prompt but the same grading rubrics in the class. Once students completed the post-writing assignment,

both groups of students used a self-checklist to review and revise their writing assignments. Once students edited their writing using the self-review checklist, they submitted the revised writing assignments to Canvas for grading. Different from the comparison group, once the self-reviewed writing assignment was graded, students from the treatment group had another round of review on the post writing. They did a peer-review activity using the peer-review editing worksheet in the Zoom class during this round of review activity. After the peer-review activity, students submitted a new version of their post-writing assignment to Canvas for a final post-writing grade. Treatment group students only have two recorded grades in this study: the baseline writing grade (self-review) and the final post-writing grade (peer-review).

To fulfill the purpose of this study, there were seven research questions:

1. To what extent was there a difference between the comparison and treatment groups on the baseline writing scores?

   a. To what extent was there a difference between the comparison group and the treatment group students' baseline writing scores on FCS (format/ content/ structure)?

   b. To what extent was there a difference between the comparison group and the treatment group students' baseline writing scores on grammar?

   c. To what extent was there a difference between the comparison group and the treatment group students' baseline writing scores on vocabulary?

   d. To what extent was there a difference between the comparison group and the treatment group students' baseline writing scores on spelling?

2. To what extent was there a score difference between the self-review results and the peer-review results within the treatment group for the post-writing test?

    a.   To what extent was there an FCS (format/ content/ structure) score difference between the self-review and the peer-review results within the treatment group for the post-writing test?

    b.   To what extent was there a grammar score difference between the self-review and peer-review results within the treatment group for the post-writing test?

    c.   To what extent was there a vocabulary score difference between the self-review and peer-review results within the treatment group for the post-writing test?

    d.   To what extent was there a spelling score difference between the self-review and peer-review results within the treatment group for the post-writing test?

3.   To what extent was there a difference between the comparison group and the treatment group on the post-writing scores?

    a.   To what extent was there a difference between the comparison group and the treatment group students' post-writing scores on FCS (format/ content/ structure)?

    b.   To what extent was there a difference between the comparison group and the treatment group students' post-writing scores on grammar?

    c.   To what extent was there a difference between the comparison group and the treatment group students' post-writing scores on vocabulary?

    d.   To what extent was there a difference between the comparison group and the treatment group students' post-writing scores on spelling?

4.   To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing?

a. To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing in FCS (format/ content/ structure)?

b. To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing in grammar?

c. To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing in vocabulary?

d. To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing in spelling?

5. To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing?

a. To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing in FCS (format/ content/ structure)?

b. To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing in grammar?

c. To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing in vocabulary?

d. To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing in spelling?

6. What did the survey results indicate the student feedback regarding peer-review for the English writing?

7. What parts were most useful or challenging regarding the use of peer-review for English writing?

Setting and Participants

This study occurred at two community colleges in the San Francisco Bay Area, United States. According to the U.S. News & World Report, one of these community colleges was a public community college that opened in 1968. This college currently has a total population of 5,760 students. Only 13.9% were enrolled full-time. There were 33.2% Asian, 25.4% Hispanic or Latino, 17.7% Black or African American, 14% White, and 13% of other races among the enrolled students. About 70.8% of the students in undergraduate programs were Asian males, followed by 17.2% of Asian females and 11.4% of Hispanic or Latino females. About 73 instructors were teaching at this college. There were 37 male and 36 female instructors at this college. The instructors were almost equally divided based on their genders. One instructor participated in this study. This instructor has a Master's degree in Teaching English as a Second or Foreign Language and has at least three years of teaching experience in ESL education. He is also pursuing a doctoral degree in education in Learning and Instruction. Another community

college was also a public community college founded in 1953 according to the U.S. News & World Report. This community college has a total enrollment of 10404 students with 2613 full-time students and 7791 part-time students. There were 46% male and 54% female students at this college. The U.S. News & World Report also indicated that 27% of students were Asian, 23% were Hispanic/Latino, 21% were Black or African American, 14% were White, and 14% were others. Regarding students' age distribution, 7% of students were under 18, 43% were between 18-24, 47% of students were between the ages of 25-64, and only 3% were over the age of 65. Demographic information for students who participated in the survey is as follows in Table 3:

Table 3

Participants' Demographic Information

Number	Student	Age	Gender	Full-time Students	Years of Living in the USA	Native Language
1	Iris	18-25	F	YES	2.0	Farsi
2	Jacob	18-25	M	YES	2.5	Mandarin
3	Heisley	30-38	F	NO	5.0	Spanish
4	Linda	30-38	F	NO	3.5	Vietnamese
5	Michael	18-25	M	YES	2.5	Spanish
6	Thomas	18-25	M	YES	2.5	Mandarin
7	Nova	45-60	F	NO	10.0+	Arabic
8	Rose	30-38	F	YES	3.0	Russian

Both community colleges belong to the same community college district, so their English as a Second Language department functioned and operated the same way for academic purposes. Both community colleges included four levels of difficulty in their ESOL programs: Level 1, Level 2, Level 3, and Level 4. Each level of the ESL classes has Listening and Speaking, Reading and Writing Grammar, Pronunciation, Vocabulary, and Conversation classes. Please see the ESOL class levels below in Table 4:

Table 4

ESOL Class Levels

Courses	Level 1	Level 2	Level 3	Level 4
Grammar (4 Units)	271A/B	272A/B	273A/B	274A/B
Listening & Speaking (4 Units)	261A/B	262A/B	263A/B	N/A
Reading & Writing (4 Units)	251A/B	252A/B	253A/B	52A/B
Pronunciation (4 Units)	N/A	N/A	267	268
Conversation (4 Units)	288	289	N/A	N/A
Vocabulary (4 Units)	N/A	N/A	293	N/A

The ESOL classes that were used for this study were intermediate Writing classes in the Fall semester of 2021. To register for the intermediate course, students need to complete base-level courses or a placement test through multiple assessment processes. Students could improve their critical-thinking skills and academic researching skills in this course. Students learn how to critically analyze and write academic papers for college-level texts.

Due to COVID-19, the number of students enrolled in this class was fewer than before. There were 12 students in the treatment group and 13 in the control group in the 2021 Fall semester. The age range of these students was 18 to 25 years old. These two classes had different

ESL instructors, but they used the same textbooks, syllabus, learning materials, and writing rubrics.

Protection of Human Subjects

Procedures to protect human subjects follow those specified by the American Psychology Association (2012). The researcher sought approval from the University of San Francisco Institutional Review Board to conduct this research. Two ESOL intermediate writing classes at a San Francisco Bay area community college participated in this study. All participants' names appear on the data that were collected. The study numbered all participants from 1 to the maximum number of students. Each student had a unique ID number. The researcher was not able to identify the individual participants by numbering the students. All data was obtained anonymously.

The instructors and students were asked to fill out a consent form before the experiment. The instructors' consent form was in Appendix D. Instructors gave the researcher permission to research their classes before the experiment. Students received an online content form (Appendix E) link via email during the experiment. The researcher read the script in the classroom, and then students clicked YES or NO on the consent form. Those students who chose "No" were invited to a separate Zoom meeting breakout room for a reading with their instructor. After collecting the consent forms, the researcher uploaded the consent forms to a private account for the research purpose. Only the researcher has access to this iCloud account. After two years, the iCloud account will be automatically removed.

Before the experiment, the researcher requested permission to carry out the study to the community college's ESL department chair. See the request form in Appendix F. The researcher also had permission from the dean of the ESL department at the community college. There was

no Review Board for the community college. Still, the research collected an IRB Verification of Exempt Research Involving Human Subjects from the University of San Francisco in the Summer of 2021.

Instrumentation

The following sections show a description of the instruments in this study. These include the grading rubric and survey.

Grading Rubric

Essay grading rubrics are important and should be written and explained in a language that students can easily understand (Mahmoudi & Bugra, 2020). The grading rubric used in this study was adapted from Mahmoudi and Bugra (2020). According to Mahmoudi and Bugra (2020), there are two purposes for this grading rubric. First of all, this grading rubric aimed to raise students' awareness of what areas they need to focus on when writing their essays. Second, the purpose of this grading rubric was to provide students with opportunities to evaluate their writing assignments by referencing the grading criteria and standards.

This grading rubric has four main components: 1) format, content, & structure, 2) grammar, 3) vocabulary, and 4) spelling. Each element has four categories: poor, fair, good, and excellent. See the Appendix G.

Table 5

ESL Essay Grading Rubric

Criteria	Rating Scale			
	Poor	Fair	Good	Excellent
Format, Content & Structure	1. None of the writing is about the topic. 2. The essay does not explicitly	1. Some of the writing is about the topic. 2. The essay answers nearly all parts of the question.	1. Most of the writing is about the topic. 2. The essay answers all parts of the question with	N/A

	answer the question. 3. The writing is disorganized, having only a body paragraph. 4. No logical progression of ideas, no use of transitions between paragraphs. 5. Writing needs to be more interesting and mature.	3. The writing is somewhat organized, having an introduction and body paragraphs, but missing a conclusion paragraph. 4. Some logical progression of ideas in some parts of the essay, but not others; a few transitions, but not throughout the whole essay. 5. Writing is somewhat interesting and mature.	interesting information. 3. The writing is organized, having an introduction, body and conclusion paragraphs. 4. Clear, logical progression of ideas; uses appropriate transitions. 5. Writing captures audiences' attention	
Grammar	More than 10 errors in sentence structure, verbs, parts of speech, pronouns, prepositions…	8 to 10 errors in sentence structure, verbs, parts of speech, pronouns, prepositions...	4 to 7 errors in sentence structure, verbs, parts of speech, pronouns, prepositions...	1 to 3 errors in sentence structure, verbs, parts of speech, pronouns,
Vocabulary	1. Poor word choice; most words are used incorrectly; sentences are simple and do not send a basic message. 2. No detailed expressions. 3. Use of the L1.	1.Simple word choice; some words are used incorrectly; sentences are simple and send a basic message. 2. Almost no detailed expressions.	1. Good word choice; some effort is made to use complex sentences and new vocabulary. 2. There are some mistakes but the argument of the essay is clear.	1.Many new words used correctly; strong efforts to expand the vocabulary; words and expressions are eloquently presented.
Spelling	More than 7 spelling errors.	5 to 7 spelling errors.	3 to 4 spelling errors.	0 to 2 spelling errors.

Note. From "The Effects of Using Rubrics and Face to Face Feedback in Teaching Writing Skills in Higher Education" by Mahmoudi, F. & Bugra, C. 2020.

Survey

Qualtrics was a tool to help produce quantitative or numerical descriptions of the population studied in the research study (Fowler, 2002). Each participant from the treatment was invited to complete an online survey one week after the experiments. The surveys were optional and anonymous for all participants. The purpose of the survey was to help the researcher collect data from all participants to better understand the effectiveness of using peer-review worksheets in the college ESL writing classroom to improve students' writing scores in format/ content/ structure, grammar, vocabulary, and spelling.

The survey was designed in Qualtrics and was distributed via students' email addresses. Twelve students from the treatment group participated in the survey and submitted their answers through Qualtrics. All survey responses were collected and exported from Qualtrics. There were 16 questions in the survey, with fourteen Likert scale questions and two open-ended questions. All students completed and submitted the survey within one week after receiving the survey from the researcher. The researcher received twelve responses from the treatment group and saved all data in a personal folder. All data was used only for this study and was secured. After two years, all data will be destroyed and no longer be accessible.

Students received an online survey with fourteen Likert scale questions and two open-ended questions in the treatment group. In the Likert Scale question section, students can rate their abilities for each item from 1to 5. Instructions for the survey questions were provided below in Table 6:

1 = Strongly disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly agree

A validity panel validated the questions below for both cultural and linguistic

sensitivities.

Table 6

Students' Online Survey

Survey Questions	Point	Point	Point	Point	Point
1. The self-checklist motivates me to improve my writing scores.	1	2	3	4	5
2. The self-checklists helped to improve my writing format/content/structure.	1	2	3	4	5
3. The self-checklists helped to improve my writing grammar.	1	2	3	4	5
4. The self-checklists helped to improve my writing vocabulary.	1	2	3	4	5
5. Self-checklists helped to improve my writing spelling.	1	2	3	4	5
6. I would recommend the self-checklist to my other ESL friends to improve their writing scores.	1	2	3	4	5
7. The peer-review worksheets helped to increase my writing scores.	1	2	3	4	5
8. The peer-review worksheet motivated me to improve my writing scores.	1	2	3	4	5
9. The peer-review worksheets helped to improve my writing format/content/structure.	1	2	3	4	5
10. The peer-review worksheets helped to improve my writing grammar.	1	2	3	4	5

11. The peer-review worksheets helped to improve my writing vocabulary.	1	2	3	4	5
12. The peer-review worksheets helped to improve my writing spelling.	1	2	3	4	5
13. I would recommend the peer-review worksheets to my other ESL friends to improve their writing scores.	1	2	3	4	5
14. What parts of the activity did you find the most helpful?					
15. What parts of the activity were challenging to you?					

Procedures for Data Collection

This study was conducted in the fall semester of 2021 at a community college in the San Francisco Bay Area. Fifty ESL students from two intermediate ESOL classes participated in this study. The instructors and the researcher administered the experiment via Zoom.

Each group of students had different ESL instructors (Instructor A and Instructor B) from this college located in northern California. These two instructors administered the experiments during all experiment days. Instructor A assisted the treatment group, and instructor B assisted the comparison group. Due to COVID-19, all in-classroom lessons at this community college were online via Zoom. All instructors used Canvas as their Learning Management System. According to Mucedola (2016), Canvas was released in 2011. In Canvas, users can upload and administer online education. Instructors can manage all learning material, increase interactions, and improve learners' overall learning experience within Canvas. Learners can upload their assignments to Canvas so that instructors can review and grade their assignments on Canvas. The independent variables in this research design were the peer-review worksheets, the self-checklists, format/content/structure, grammar, spelling, and vocabulary writing criteria. The

dependent variables in this study were students' writing scores in the baseline writing assignment and the post writing assignment. Regarding the timeline of this study, there were four weeks. See details in Table 2.

In week 1, both instructors uploaded the correlative materials to Canvas. Instructor A from the treatment group uploaded the writing prompts, peer-review editing worksheets, self-checklist, and grading rubrics to the Canvas site. Instructor B from the comparison group uploaded the writing prompts, self-checklist, and the grading rubric to its' course Canvas site. After that, instructors sent an email notification to all participants, so they could view and download all materials from Canvas. Once receiving all the materials, all students started to work on their baseline writing assignment on a word document. After completing the writing assignment, students uploaded the essay word document to Canvas by the end of week 1. Two college ESL instructors helped grade students' writings with the grading rubric that the research shared. Both instructors did grades for the treatment and the comparison groups.

In week 2, students reviewed and downloaded the graded writing assignment from Canvas. There were no additional writing revisions for this assignment. During week 2, both groups of students were required to do another writing assignment in the online Zoom class. Materials such as the grading rubric, peer-review worksheets, and self-checklist were uploaded to Canva before the class. The instructor and the researcher monitored the entire process via Zoom. Students turned on their cameras while working on the essay. In the first 5 minutes, the researcher read aloud a paragraph of instructions to students. The researcher shared a presentation deck via Zoom and demonstrated step-by-step instructions to the students. After the demonstration, students had 5 minutes to ask questions. Because these students were at the intermediate level, most had difficulty understanding the instructions. The researcher repeated

the instructions and helped students troubleshoot their issues. This process took about 10 minutes. After students were clear about the rules and instructions, they visited the course Canvas site and downloaded the self-checklist from the designated Canvas module. To help students feel more comfortable about doing the self-review, they had two options to do the self-review. The first option was to download the print the self-checklist and mark their answers on the checklist and then upload the revised writing assignment to Canvas. The second option was to directly keep their responses on the Word document and use it as a reference to revise their writings. While the students were doing the self-revision, the researcher and the instructor were in the Zoom meeting to help answer any technical questions or questions from the self-review checklists so students didn't feel anxious. The researcher and the instructor monitored the entire process via Zoom video to ensure no communication among students.

Another thing that the researcher did was countdown the time. Once there were only 10 minutes left, the researcher reminded all students. However, most students responded that they needed five more minutes because they didn't finish their checklist. The researcher agreed to give them 5 minutes after communicating with the instructor.

Once students completed the writing assignment, the treatment and the comparison group used the self-checklist to correct their baseline writing assignment. These corrections include format, content & structure, grammar, vocabulary, and spelling. See the self-checklists in Appendix A.

In the middle of week 2, students' grades for the post-writing assignment were posted on Canvas. In addition, the treatment group did a peer-review session (one hour) on their writing assignment with a paired partner via Zoom. Students were able to download a peer-review editing worksheet from Canvas. See the peer-review worksheet in Appendix B. Before the peer-

review session, the researcher introduced how to use the peer-review worksheet to the class.

After that, students were divided into different Zoom rooms to do the peer-review in the first 30

minutes. In the next 30 minutes, students worked on revising and editing their writing

assignments based on the feedback provided by their peers. At the end of this session, students

submitted their revised writing assignments to Canvas for instructors' grading.

In week 3, treatment group students received an online consent form and an optional

survey from the researcher. Students' responses to the consent form and survey were only

viewed and saved by the research for this research only. In addition, all students' grades and all

survey data were used for this study only and won't be shared with others. In week 4, the

researcher did the data collection and data analysis.

Intervention

There were three primary interventions in this study: peer-review worksheets and self-

checklists.

Peer-review Worksheet

The peer-review worksheet in this study was adopted from the ESL program at the

college where my research was done. Participants who participated in this study have never used

the peer-review worksheet before in their writing classes. There were seven questions in total in

the peer-review worksheets worksheet. Each participant answered these questions about their

peer's writing assignment during the Zoom breakout rooms. There were instructions on how to

complete the peer-review worksheets in the checklist. The reliability of the peer-review

worksheets worksheet was not needed for this study either. As for the validity, the same group of

panel reviewers reviewed and approved the peer-review worksheets. The researcher collected all

panel reviewers' feedback and comments and implemented them into the updated peer-review

worksheets worksheet in Appendix B. Peer-review editing worksheet questions include

1. What part or parts do you like best?

2. What part would you like to know more about?

3. What questions do you have?

4. Does the essay have a thesis statement?

              Underline it.

5. How many subdivisions does the thesis have?

6. Does the essay have a conclusion?

7. Does the conclusion include the restatement of the thesis statement?

           Underline it.

See Table 7 for some peer-review instructions and examples.

Table 7

Peer-review Instructions

Symbols	Meaning	Examples
sp	Spelling error	Incorrect: Go <u>too</u> the post office.
		SP
		Correct: Go to the post office.
cap	Capitalization error	Incorrect: I live on <u>main street</u>.
		Cap
		Correct: I live on Main Street.
p	Punctuation error	Incorrect: I ate an egg, and toast.
		P
		Correct: I ate an egg and toast.

wd	Wrong word	Incorrect: I <u>have</u> 21 years old.
		Wd
		Correct: I am 21 years old.
wf	Word form error	Incorrect: He runs <u>slow</u>.
		WF
		Correct: He runs slowly.
⌣	Connect the letters	Incorrect: Some students do n't like taking tests.
		Correct: Some students do not like taking tests.

Self-checklist

The self-checklist was adopted from the ESL program at the college where my research was done. This self-checklist was designed and developed by the ESL instructors from this college. Both instructors use this self-checklist form in their normal writing classes. There are two parts to this self-checklist document. Part A was the Paragraph Checklist, and Part B was the Essay Checklist. In the Paragraph Checklist part, there are ten questions. Students need to download the self-checklist from the Canvas site and fill in each question and choose either the "Yes" or "no" options for each question.

After completing Part A, students need to do the Essay Checklist part. There were three sections in this part, and each section had at least one sub-section. Students need to choose an answer for each question. Reliability of the self-checklist in this study was not required. An expert panel of ESL instructors reviewed the self-checklist and provided comments on whether the self-checklist measures college ESL students' writing skills. There were two ESL instructors in this expert panel. They have at least four years of experience in teaching college-level ESL

writing classes. All the panel reviewers have at least a Master's degree in Teaching English to Speakers of Other Languages (TESOL). The panel provided the self-checklist form in Appendix A and the grading rubric was shown in Appendix C. The researcher also sent a reminder email to these reviewers to collect their feedback and comments. In the end, the researcher incorporated all panel reviewers' input into the self-checklist. There were two parts to the self-checklists: part A - paragraph checklist and part b - essay checklist.

Part A: Paragraph Checklist

1. Do you have a topic sentence?

    - YES
    - NO

2. Do you have supporting sentences?

    - YES
    - NO

3. Do you have a clincher/concluding sentence?

    - YES
    - NO

4. Does your paragraph have unity?

    - YES
    - NO

5. Does your paragraph have coherence?

    - YES
    - NO

6. Did you indent the first line?

    - YES
    - NO

7. Does your paragraph have a title?

- YES
- NO

8. Did you write on every other line?

    - YES
    - NO

9. Did you proofread your paragraph?

    - YES
    - NO

10. Did you write neatly?

    - YES
    - NO

Part B: Essay Checklist

1. Does your essay have an introduction?

    a. YES
    b. NO

2. Does your introduction have a capture statement/Statements?

    a. YES
    b. NO

3. Does your introduction have a thesis?

    a. YES
    b. NO

4. Does your thesis include three subdivisions?

    a. YES
    b. NO

5. Are there three paragraphs in the body of your essay?

    a. YES
    b. NO

6. Does each paragraph start with a topic sentence related to one of the subdivisions of your thesis?

    a. YES
    b. NO

7. Does your essay have a conclusion?

    a. YES
    b. NO

8. Does your conclusion include the paraphrase of the thesis?

    a. YES
    b. NO

9. Does your conclusion end with a general clincher?

    a. YES
    b. NO

Data Analysis

Quantitative data from baseline and post-writing tests from treatment and comparison groups were collected and analyzed for inter and intra-group comparisons. The significance level was set at 0.05 for each test. To address the first five research questions, the analysis of variance (ANOVA) using the SPSS software was used. The independent variable was the group (the comparison group with self-review and the treatment group with peer-review). The dependent variables in this study were students' writing scores and score changes in baseline and post-writing tests. There are three basic assumptions to apply ANOVA analysis (Wilcox. 2022):

1. The samples from each group must be independent, and there should be no relationship between the observation in each group or between the groups themselves. This is applied to the assumption of independence.

2. The populations from the obtained samples must be normal or approximately normally distributed. This is normally applied to the assumption of normality.

The variances of the populations must be equal. This is normally applied to the assumption of homogeneity of variance.

To meet the first assumption (assumption of independence), students are randomly selected into two groups. Moreover, the writing scores for each test were the mean value of the scores given by two independent ESL instructors. To verify the second assumption (assumption of normality), Shapiro-Wilk test (Jurečková & Picek, 2007) was used to test the equality of error variances for different groups. Levene's test (O'Neill & Mathews, 2002) was used to verify the third assumption (assumption of homogeneity of variance).

For the first research question, Shapiro-Wilk test and Levene's test were performed for baseline writing scores in the comparison and treatment group. For both tests, the corresponding significance values are higher than 0.05 ($p > .05$). Therefore, both assumption of normality and assumption of homogeneity of variance were met for ANOVA analysis. ANOVA analysis for the first research question was to identify any statistically significant difference of baseline writing scores between the treatment and comparison group. The analysis was conducted for the total writing scores as well as the sub-scores for each criterion (grammar, vocabulary, spelling, and format/content/structure). The results can determine if students' English writing levels are comparable between two groups without any review process.

To address the second question, two set of scores were collected and analyzed within the treatment group for the post-writing test. The first set of scores were the scores after self-review process, and the second set of scores were the scores after peer-review process. Similarly, Shapiro-Wilk test and Levene's test were performed to check the assumption of normality and assumption of homogeneity of variance. For both tests, the corresponding significance values are higher than 0.05 ($p > .05$). ANOVA analysis was used to identify if there was any statistically

significant difference between the scores (including both total scores and sub-scores) after peer-review and after self-review for the post-writing test.

The third research question was to identify whether there was a statistically significant difference in the post-writing scores between the comparison and treatment groups. In the third research question, post-writing scores for the treatment group and comparison group were after peer-review and self-review, respectively. To verify assumptions 2 and 3, the Shapiro-Wilk test and Levene's test were performed and both significance values are higher than 0.05 ($p> .05$). ANOVA analysis was performed for the third research question. The third research question was a complement to the second question: in the second research question, the post-writing scores within the same group were analyzed; in the third research question, the post-writing scores between the two groups were analyzed. Combined with the analysis for the second and third questions, the influence of peer-review on the writing scores can be better understood.

Besides studying and analyzing the baseline and post-writing scores, the score changes from baseline writing scores to post-writing scores were also analyzed in the fourth and fifth research questions. For the fourth research question, absolute score changes were first calculated for both the comparison and treatment group. Then, the Shapiro-Wilk test and Levene's test were performed to check the assumption of normality and assumption of homogeneity of variance. For both tests, the corresponding significance values are higher than 0.05 ($p> .05$). Then ANOVA analysis was used to identify whether there was any statistically significant difference regarding the score change between the treatment group and comparison group.

To further analyze score changes, the percentage of score changes was also compared in the fifth research question. The percentage of score changes was calculated by dividing the absolute score changes (calculated in the fourth research question) by the corresponding baseline

writing scores. Similar to previous research questions, Shapiro-Wilk test and Levene's test were first performed to check the assumption of normality and assumption of homogeneity of variance. The corresponding significance values are higher than 0.05 ($p > .05$) for both tests. ANOVA analysis was then used to determine if there was a statistically significant difference in the percentage of score changes between the treatment group and the comparison group.

A survey was also designed to collect the treatment group students' feedback on the self-review and peer-review process. There were two sections in the survey: the first section was for collecting students' ratings of both the self-review and peer-review processes by answering fourth questions (details can be found in Table 6); the second section was for open-ended questions regarding the most helpful and most challenging parts of the peer-review process. In the sixth research question, initially, the rate score distribution was analyzed for self-review and peer-review questions. Next, the mean value of rating scores for each survey question was calculated and compared. This mean value can represent students' opinions of how much the self-review and peer-review process can help to improve their English writing. To further analyze the data, the mean value of rating scores from each student was also calculated and compared. Then, Shapiro-Wilk test and Levene's test were performed to check the assumption, and ANOVA analysis was carried out to identify if there was a statistically significant difference between the rating scores for peer-review survey questions and self-review survey questions.

For the last research question, students' perspectives on the most helpful and the most challenging parts of peer-review process were collected and studied through qualitative analysis. The qualitative analysis was carried out to provide more information on the ESL students' attitudes toward using peer-review in their writing class. The last research question was designed

to better understand how peer-review can help improve English writing scores and difficulties of using peer-review in the English writing class for ESL students.

Limitations

There were several limitations in this study. First, technology was not always stable and reliable. Due to COVID-19, all classes at the community college were online. Both groups of students will need to have a very stable Internet connection during these writing sessions. Information can be lost if the Internet breaks down. Second, due to COVID-19, all classes at this community college were conducted online. Students might have some unexpected emotional or health issues while taking online classes. Hence, students' performance in their writing assignments might be affected. Third, the sample size in this study was small due to COVID-19. This community college will not have sufficient students enrolled in their ESL program. The expected sample size (n=50), but the sample size in this study was 25, which may not identify accurate results.

About the Researcher

Mengjie Wei is a researcher born and raised in China. She has her Master's degree in Teaching English to Speakers of Other Languages. She pursued her Doctorate in Education at the University of San Francisco. Dream Wei has a strong EFL and ESL background and has about four years of experience in teaching college ESL classes. She published entitled "Strategies for First-year University ESL Students to Improve Essay Writing Skills" in 2017. She is passionate about teaching college-level ESL students essay writing, and her primary interest is utilizing educational technology to improve college-level ESL students' writing skills.

Based on the author's personal experience, peer-review in a writing classroom had many benefits. She was an English as a second language speaker. When she worked on her Master's

degree in Teaching English to Speakers of Other Languages with one of her professors, her professor used many peer-review activities in his writing classes. The author was highly motivated during the peer-review process because she considered herself a "teacher" when reviewing other students' writing assignments. She read other students' writing carefully and tried to provide some insightful suggestions.

On the other hand, when she got feedback from her peers, she found it very straightforward and helpful because it was easy to understand. In addition, she noticed that her communication skills and teamwork skills improved a lot during that process. After her Master's degree, she worked as an ESL teacher at a local high school in the San Francisco Bay Area. She taught 11th and 12th-grade students Reading and Writing. Influenced by her professor, she used peer-review in her classes. From the author's perspective, she noticed that her students were highly focused when they worked with each other during the peer-review activities. She saw so many conversations during the peer-review activities; She noticed that those shy students became more confident and active during the feedback sharing sessions. Most importantly, she found out that most students had better scores on the revised version after the peer-review revisions than on the first draft.

Motivated by some researchers' studies on peer-review in an ESL writing class, such as Tai, Lin & Yang (2016), Nawas (2020), and Salehi & Sayyar (2017), she was interested in investigating the effectiveness of using peer-review in a college ESL writing class and how peer-review improves students' writing skills and quality.

CHAPTER IV

RESULTS OVERVIEW

This study was conducted to examine the effectiveness of peer-review in college English as Second Language writing classes to improve ESL students' writing scores. It also investigated a statistically significant difference in college ESL students' writing scores between those who use both the self-checklist and peer-review worksheet and those who only use the self-checklist for writing correctness in a writing assignment. More specifically, this study was conducted to determine the influence of different areas on students' English writing scores, i.e., format/content/structure, grammar, vocabulary, and spelling. In addition, this study explored students' attitudes and opinions on peer-review in writing class. This research consisted of both quantitative and qualitative analysis. Detailed analyses of the below six research questions are shown in separate sub-sections. At the end of this chapter, a summary section concludes the research findings for all research questions.

QUANTITATIVE FINDINGS

Research Question # 1

To what extent was there a difference between the comparison and treatment groups on the baseline writing scores?

a. To what extent was there a difference between the comparison group and the treatment group students' baseline writing scores on FCS (format/ content/ structure)?

b. To what extent was there a difference between the comparison group and the treatment group students' baseline writing scores on grammar?

c. To what extent was there a difference between the comparison group and the treatment group students' baseline writing scores on vocabulary?

d. To what extent was there a difference between the comparison group and the treatment group students' baseline writing scores on spelling?

The purpose of research question # 1 was to investigate the English writing scores of students in the treatment and comparison groups. The expectation was that the English writing scores of the ESL students in the comparison group were close to the students in the treatment group. If they are comparable, the following analysis between groups is meaningful. Otherwise, the differences between the English writing scores can be attributed to different English writing levels. The descriptive statistics for comparing the treatment and the comparison groups are in Table 8.

Table 8

Means and Standard Deviations for Baseline Writing Scores between the Comparison Group and the Treatment Group

Group		Comparison M(SD)	Treatment M(SD)
Criteria	F/C/S	2.77 (1.01)	2.79 (0.86)
	Grammar	2.73 (0.73)	2.83 (0.91)
	Spelling	2.69 (0.75)	2.71 (0.66)
	Vocabulary	2.81 (0.80)	2.88 (0.91)
	Total	11.00 (3.02)	11.21(2.73)

Note. F/C/S stands for format/structure/content.

From the data in Table 8, the mean values of English writing scores in all criteria: format, content & structure, grammar, spelling, and vocabulary are similar between the comparison group and the treatment group. Moreover, the standard deviation values are also comparable between different criteria in the two groups. This table also illustrates that the score distributions are similar between the two groups. Regarding the total score for the baseline writing test, the comparison group's mean value is 11.00 and the treatment group's mean value is 11.21; the

standard deviation value for the comparison group and treatment group is 3.02 and 2.73, respectively. The mean writing score for F/C/S and spelling are almost the same between the two groups; the grammar and vocabulary scores are slightly higher in the treatment group. The standard deviations for both the comparison group and the treatment group are close to each other, close to 1.0. This also demonstrates that the score distribution in the two groups is also similar. The mean value comparison revealed that both the treatment group and the comparisons group had very identical mean scores in f/c/s, grammar, spelling, and vocabulary in the baseline writing. The comparison of standard deviations for all criteria between the comparison group and the treatment group demonstrated that ESL students' writing skills are comparable between the comparison group (who used self-checklist) and the treatment group (who used both self-checklist and peer-review worksheet) in the baseline writing.

The results of ANOVA for total scores and all sub-scores are presented in Table 9. A one-way between-subjects ANOVA was conducted to compare if there were any significant differences between the two groups on their baseline writing scores, prior to the implementation of the treatment. A one-way ANOVA revealed that there was no statistically significant difference in total scores at the $p < .05$ level between the treatment and comparison group ($F(1, 23) = 0.03$, $p = .86$). Similarly, there was no statistically significant difference at the $p < .05$ level between the treatment and comparison group in F/C/S scores ($F(1, 23) < 0.01$, $p = .95$), grammar scores ($F(1, 23) < 0.01$, $p = .96$), spelling scores ($F(1, 23) < 0.01$, $p = .96$), and vocabulary scores ($F(1, 23) = 0.04$, $p = .85$). These results suggest that the treatment and comparison group's baseline writing scores in all criteria did not significantly differ from each other. These results also illustrate that ESL students' writing skills are similar and comparable between the treatment and comparison groups.

Table 9

ANOVA Results for the Baseline Writing Scores

	SS	df	MS	F	Sig.
F/C/S Score					
Between Groups	<0.01	1	<0.01	<0.01	.95
Within Groups	20.54	23	0.89		
Total	20.54	24			
Grammar Score					
Between Groups	<0.01	1	<0.01	<0.01	.96
Within Groups	11.50	23	0.50		
Total	11.50	24			
Spelling Score					
Between Groups	<0.01	1	<0.01	<0.01	.96
Within Groups	11.50	23	0.50		
Total	11.50	24			
Vocabulary Score					
Between Groups	0.03	1	0.03	0.04	.85
Within Groups	16.83	23	0.73		
Total	16.86	24			
Total Score					
Between Groups	0.27	1	0.27	0.03	.86
Within Groups	188.23	23	8.18		
Total	188.50	24			

Note. Statistically significant at the .05 level.

Research question # 2

To what extent was there a score difference between the self-review results and the peer-review results within the treatment group for the post-writing test?

a. To what extent was there an FCS (format/ content/ structure) score difference between the self-review and the peer-review results within the treatment group for the post-writing test?

b. To what extent was there a grammar score difference between the self-review and peer-review results within the treatment group for the post-writing test?

c. To what extent was there a vocabulary score difference between the self-review and peer-review results within the treatment group for the post-writing test?

d. To what extent was there a spelling score difference between the self-review and peer-review results within the treatment group for the post-writing test?

The purpose of research question # 2 was to investigate whether there was a difference between post-writing scores after self-review and scores after peer-review in the treatment group. The descriptive statistics of the post-writing scores between the two groups are in Table 10.

Table 10

Means and Standard Deviations for Post Writing Scores between the Self-Review Results and Peer-Review Results for the Treatment Group

Group		Comparison M (SD)	Treatment M (SD)
Criteria	F/C/S	3.18 (0.40)	3.42 (0.37)
	Grammar	3.21 (0.81)	3.83 (0.54)
	Spelling	3.42 (0.63)	4.21 (0.40)
	Vocabulary	3.21(0.50)	3.58 (0.47)
	Total	13.02(2.34)	15.04 (1.78)

As shown in Table 10, the mean values of the peer-review scores are higher than the self-review scores for all criteria. The results reveal that the peer-review process can help improve students' English writing scores in their format/ content/ structure, grammar, vocabulary, and spelling compared with the self-review process.

Moreover, the standard deviation for the peer-review scores is smaller than the self-review scores. This result also indicates that the score distribution of the peer-review scores is more concentrated. The result also shows that most students in the treatment group improved writing scores, and more students had better scores after the peer-review worksheet activity. Regarding the total scores, the peer-review results ($M = 15.04$, $SD = 1.16$) have a higher mean

value and lower standard deviation than the self-review results ($M = 12.67$, $SD = 1.64$) in the treatment group, which shows that the students in the treatment group had a better performance in the post writing when using a peer-review worksheet. This result also demonstrates that compared with self-review scores, peer-review scores are higher and the corresponding score distribution is more concentrated.

The results of ANOVA for both total scores and sub-scores are presented in Table 11. A one-way between subjects ANOVA was conducted to compare the effect of the review process on writing scores in the treatment group for words in self-review and peer-review. A one-way ANOVA revealed that there was a statistically significant difference in the treatment group's total scores between self-review results and peer-review results at the $p < .05$ level ($F(1, 22) = 18.12$, $p < .001$). Statistical results indicated that the peer-review process led to higher total scores on the writing rubric ($M = 15.04$, $SD = 1.16$) and were significantly different than the students' writing scores after self-review ($M = 12.67$, $SD = 1.64$). Taken together, this result suggests that the peer-review process can help students in the treatment group to have better total writing scores. Similarly, there was a statistically significant difference between self-review results and peer-review results at the $p < .05$ level in grammar scores ($F(1, 22) = 6.87$, $p = .02$) and spelling scores ($F(1, 22) = 16.18$, $p < .01$). However, there was no statistically significant difference between self-review results and peer-review results at the $p < .05$ level in F/C/S scores ($F(1, 22) = 3.09$, $p = .09$) and vocabulary scores ($F(1, 22) = 3.61$, $p = .07$). These results suggest that with the help of peer-review, students from the treatment group had significant score improvement in grammar scores, spelling scores, and total scores, but not in F/C/S and grammar scores.

Table 11

ANOVA Results for the Post Writing Scores in the Treatment Group

	SS	df	MS	F	Sig.
F/C/S Score					
Between Groups	1.04	1	1.04	3.09	0.09
Within Groups	7.42	22	0.34		
Total	8.46	23			
Grammar Score					
Between Groups	3.01	1	3.01	6.87	0.02
Within Groups	9.65	22	0.44		
Total	12.66	23			
Spelling Score					
Between Groups	4.17	1	4.17	16.18	<.01
Within Groups	5.67	22	0.26		
Total	9.83	23			
Vocabulary Score					
Between Groups	0.84	1	0.84	3.61	0.07
Within Groups	5.15	22	0.23		
Total	5.99	23			
Total Score					
Between Groups	32.67	1	32.67	18.12	<.01
Within Groups	39.67	22	1.80		
Total	72.33	23			

Note. Statistically significant at the .05 level.

Research question # 3

To what extent was there a difference between the comparison group and the treatment group on the post-writing scores?

a. To what extent was there a difference between the comparison group and the treatment group students' post-writing scores on FCS (format/ content/ structure)?

b. To what extent was there a difference between the comparison group and the treatment group students' post-writing scores on grammar?

c. To what extent was there a difference between the comparison group and the treatment group students' post-writing scores on vocabulary?

d. To what extent was there a difference between the comparison group and the treatment group students' post-writing scores on spelling?

The purpose of research question # 3 was to investigate whether there was a difference in students' post-writing scores between the treatment and comparison groups. In the treatment group, students post-writing scores included two rounds of reviews: the first round was the self-review, and the second round was the peer-review. Unlike the treatment group, the comparison group only did the self-review on their post-writing assignment. The descriptive statistics of the post-writing scores between the two groups are in Table 12.

As shown in Table 12, the mean values of the treatment group are higher than the comparison group on each component of their writing scores. Other than a slight increase (around 0.35 points) for vocabulary scores, the other scores increased significantly after peer-review. The spelling scores even increased by almost 0.8 points. Even for the average score of all criteria, the score for the treatment group (3.76) is around 0.5 points higher than the comparison group (3.22). The results reveal that the peer-review process can help improve students' English writing scores in their format/ content/ structure, grammar, vocabulary, and spelling. Moreover, the standard deviation for the treatment group (with peer-review) is smaller than the comparison group (with only self-review). The result also shows that most students improved writing scores, and more students had better scores after the peer-review worksheet activity. Score distribution was not balanced and concentrated in the comparison group.

Table 12

Means and Standard Deviations for Post Writing Scores between the Comparison Group (with

only self-review) and the Treatment Group (with peer-review)

Group		Comparison M (SD)	Treatment M (SD)
Criteria	F/C/S	2.81 (0.69)	3.42 (0.47)
	Grammar	3.38 (0.65)	3.83 (0.54)
	Spelling	3.46 (0.63)	4.21 (0.40)
	Vocabulary	3.23 (0.48)	3.58 (0.47)
	Total	12.88 (2.45)	15.04 (1.88)

The treatment group ($M = 15.04$, $SD = 1.16$) has a higher mean value and lower standard deviation than the comparison group ($M = 12.88$, $SD = 1.85$) for the post writing results, which shows that the treatment group students have better performance using a peer-review worksheet.

A one-way between subjects ANOVA was conducted to compare the effect self-review + peer review (treatment) versus self-review only(comparison) on post-writing scores. A one-way ANOVA revealed that there was a statistically significant difference in the post-writing total scores between the treatment and the comparison group at the $p < .05$ level ($F (1, 23) = 11.97$, p $< .01$). Statistical results indicated that the total post writing scores in the treatment group ($M = 15.04$, $SD = 1.16$) were significantly higher than the scores from the comparison group ($M = 12.88$, $SD = 1.85$). Taken together, this result suggests that the total scores in the treatment group are significantly better than the scores in the comparison group for the post-writing test. Similarly, there was a statistically significant difference between the comparison group and the treatment group at the $p < .05$ level in grammar scores ($F(1, 23) = 5.42$, $p = .03$) and spelling scores ($F(1, 23) = 12.39$, $p < .01$). However, there was no statistically significant difference between the comparison group and the treatment group at the $p < .05$ level in F/C/S scores ($F(1,$

23) = 3.73, *p* = .07) and vocabulary scores ($F(1, 23)$ = 3.42, *p* = .08). These results suggest that

with the help of peer-review, students in the treatment group only had better grammar scores,

spelling scores, and total scores than the students in the comparison group with self-review for

the post-writing test. However, F/C/S scores and grammar scores are comparable between two

groups.

Table 13

ANOVA Results for the Post Writing Scores

	SS	df	MS	F	Sig.
F/C/S Score					
Between Groups	1.22	1	1.22	3.73	0.07
Within Groups	7.52	23	0.33		
Total	8.74	24			
Grammar Score					
Between Groups	1.77	1	1.77	5.42	0.03
Within Groups	7.50	23	0.33		
Total	9.26	24			
Spelling Score					
Between Groups	3.48	1	3.48	12.39	<0.01
Within Groups	6.46	23	0.28		
Total	9.94	24			
Vocabulary Score					
Between Groups	0.78	1	0.78	3.42	0.08
Within Groups	5.22	23	0.23		
Total	6.00	24			
Total Score					
Between Groups	29.03	1	29.03	11.97	<0.01
Within Groups	55.81	23	2.43		
Total	84.84	24			

Note. Statistically significant at the .05 level.

Research question # 4

To what extent was there a difference between the comparison group and the treatment group

regarding the score change from the baseline writing to the post-writing?

a. To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing in FCS (format/ content/ structure)?

b. To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing in grammar?

c. To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing in vocabulary?

d. To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing in spelling?

Research question # 3 examined the effectiveness of peer-review on the post-writing scores on different criteria. The results showed that peer-review improved students' post-writing scores. In addition, students writing scores on each criteria were different. The purpose of research question # 4 was to study the improvement of writing scores from the baseline to the post-writing score under different criteria.

The descriptive statistics for comparing the treatment and the comparison groups are in Table 14. The absolute score changes were students' post-writing scores minus the corresponding baseline writing score. From the data in Table 14, the mean values of the score improvement for the treatment group are higher than the comparison group in all criteria. For the comparison group (with only self-review), the total score improvement was only 0.04, while the corresponding score improvement was 0.63 points in the treatment group. For grammar and

spelling, the score improvement for the treatment group was 0.35 points and 0.75 points higher than the comparison group. For vocabulary, even though the score for the treatment group was still higher than the comparison group, the difference was only around 0.20 points. The standard deviations of score improvement for the treatment group were higher than the comparison group in all criteria. The results showed that the absolute score improvements for the treatment group were less concentrated compared with the comparison group.

Table 14

Means and Standard Deviations for Absolute Score Change between the Comparison Group and the Treatment Group

Group			Comparison M (SD)	Treatment M (SD)
Criteria		F/C/S	0.04 (0.59)	0.63 (0.96)
		Grammar	0.65 (0.38)	1.00 (0.64)
		Spelling	0.77 (0.48)	1.50 (0.71)
		Vocabulary	0.42 (0.84)	0.71 (1.01)
		Total	1.88 (2.29)	0.63 (3.32

Notes. *F/C/S stands for format/structure/content

Regarding the total score change, the treatment group ($M = 3.83, SD = 1.88$) has a higher mean value and standard deviation than the comparison group ($M = 2.61, SD = 1.46$). To better present the data and to present the data more straightforwardly, the descriptive statistics are in Figures 4 and Figure 5.

The results of ANOVA for the total score changes and sub-score changes are presented in Table 15. A one-way between subjects ANOVA was conducted to compare the absolute score changes from the baseline writing test to the post-writing test in the treatment and comparison groups. A one-way ANOVA revealed that there was a statistically significant difference in the absolute total score changes between the treatment and the comparison group at the $p < .05$ level ($F(1, 23) = 5.51, p = .03$). Statistical results indicated that the absolute total score change in the treatment group ($M = 3.83, SD = 1.88$) were significantly different than the comparison group ($M = 2.61, SD = 1.46$). Taken together, this result suggests that the absolute total score changes in the treatment group are significantly better than the absolute total score changes in the comparison group. Similarly, there was a statistically significant difference between the comparison group and the treatment group at the $p < .05$ level in grammar score changes ($F(1, 23) = 4.33, p = .04$) and spelling score changes ($F(1, 23) = 10.03, p < .01$). However, there was no statistically significant difference between the comparison group and the treatment group at the $p < .05$ level in F/C/S score changes ($F(1, 23) = 1.88, p = .18$) and vocabulary score changes ($F(1, 23) = 0.59, p = .45$). These results suggest that with the help of peer-review, students in the treatment group had better grammar, spelling, and total score changes than the students in the comparison group. However, F/C/S and grammar score changes are comparable between two groups.

Table 15

ANOVA Results for the Absolute Score Changes from Baseline Writing Scores to the Post

Writing Scores

	SS	df	MS	F	Sig.
F/C/S Score					
Between Groups	1.10	1	1.10	1.88	0.18
Within Groups	13.46	23	0.59		
Total	14.56	24			
Grammar Score					
Between Groups	1.15	1	1.15	4.33	0.04
Within Groups	6.11	23	0.27		
Total	7.26	24			
Spelling Score					
Between Groups	3.72	1	3.72	10.03	<0.01
Within Groups	8.54	23	0.37		
Total	12.26	24			
Vocabulary Score					
Between Groups	0.51	1	0.51	0.59	0.45
Within Groups	19.65	23	0.85		
Total	20.16	24			
Total Score					
Between Groups	22.69	1	22.69	5.51	0.03
Within Groups	94.81	23	4.12		
Total	117.50	24			

Note. Statistically significant at the .05 level.

Research question # 5

To what extent was there a difference between the comparison group and the treatment group

regarding the percentage of score change from the baseline writing to the post-writing?

a. To what extent was there a difference between the comparison group and the treatment

group regarding the percentage of score change from the baseline writing to the post-

writing in FCS (format/ content/ structure)?

b. To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing in grammar?

c. To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing in vocabulary?

d. To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing in spelling?

Research question # 4 studied the influence of peer-review on the absolute writing score improvement on different criteria. However, it was impossible to investigate the absolute writing score improvement since the baseline writing scores were not the same for all cases. For example, for 3 points to 4 points (case 1) and 4 to 5 points (case 2), the absolute point increases are the same; however, the increase is 1/3 for the first case and 1/4 for the second case. The purpose of research question # 5 was to study the percentage of writing score improvement from the baseline test to the post-writing over different criteria. Analysis of research question # 5 helped have a full picture of the writing score change in two groups. The percentage of the writing score change can be calculated using the below formula:

Score change %= (Post-writing score- Baseline writing scores) ×100%

The descriptive statistics for the comparison between the two groups are in Table 16. Table 16 shows that the mean value of score improvement percentage for the treatment group is better than the comparison group in all criteria. Regarding the percentage of the score improvement, there is almost 20% difference in the average value, which is very significant. The

standard deviation of score improvement for the treatment group is slightly higher than the comparison group in all criteria. To better present the data, the descriptive statistics are also presented in Figure 13 and Figure 14.

Table 16

Means and Standard Deviations for the Percentage of the Score Improvement on all criteria between the Comparison Group and the Treatment Group

Group	Criteria	Mean Percentage Change (%)	SD
Comparison	F/C/S	9%	0.34
	Grammar	27%	0.17
	Spelling	34%	0.25
	Vocabulary	23%	0.34
	Total	93%	0.10
Treatment	F/C/S	31%	0.39
	Grammar	43%	0.33
	Spelling	63%	0.40
	Vocabulary	35%	0.44
	Total	215%	1.56

Notes. *F/C/S stands for format/structure/content

Regarding the percentages of total score change, the treatment group ($M = 39\%$, $SD = 0.26$) have a higher mean value and standard deviation than the comparison group ($M = 21\%$, $SD = 0.18$). The mean value for the treatment group is almost 18% higher than the comparison group; standard deviation value for the treatment group is 0.08 higher than the comparison group.

The results of ANOVA for the percentage of score changes are presented in Table 17. A one-way between subjects ANOVA was conducted to compare the percentage of score change from the baseline writing to the post-writing test in both the treatment and comparison groups. A one-way ANOVA revealed that there was a statistically significant difference in the percentage of total score changes between the treatment and the comparison group at the $p < .05$ level ($F(1, 23) = 4.39$, $p = .04$). Statistical results indicated that the percentage of total score change of the treatment group ($M = 39\%$, $SD = 0.26$) was significantly different than the comparison group ($M = 21\%$, $SD = 0.18$). Taken together, this result suggests that the percentage of total score changes in the treatment group is significantly better than in the comparison group. Similarly, there was a statistically significant difference between the treatment and the comparison group at the $p < .05$ level in the percentage of grammar score changes ($F(1, 23) = 4.49$, $p = .04$) and spelling score changes ($F(1, 23) = 5.43$, $p = .03$). However, there was no statistically significant difference between the comparison group and the treatment group at the $p < .05$ level in the percentage of F/C/S score changes ($F(1, 23) = 1.18$, $p = .29$) and vocabulary score changes ($F(1, 23) = 0.63$, $p = .43$). These results suggest that with the help of peer-review, students in the treatment group had better grammar, spelling, and total score percentage changes than the students in the comparison group. However, F/C/S and grammar score percentage changes are comparable between two groups.

Table 17

ANOVA Results for the Score-Change Percentages from Baseline Writing Scores to the Post

Writing Scores

	SS	df	MS	F	Sig.
F/C/S Score					
Between Groups	0.15	1	0.15	1.18	0.29
Within Groups	2.98	23	0.13		
Total	3.13	24			
Grammar Score					
Between Groups	0.28	1	0.28	4.49	0.04
Within Groups	1.42	23	0.06		
Total	1.69	24			
Spelling Score					
Between Groups	0.63	1	0.63	5.43	0.03
Within Groups	2.67	23	0.12		
Total	3.29	24			
Vocabulary Score					
Between Groups	0.10	1	0.10	0.63	0.43
Within Groups	3.47	23	0.15		
Total	3.56	24			
Total Score					
Between Groups	0.20	1	0.20	4.39	0.04
Within Groups	1.06	23	0.05		
Total	1.26	24			

Note. Statistically significant at the .05 level.

Research question # 6

What did the survey results indicate the student feedback regarding peer-review for the English writing?

Besides the writing scores, ESL students in the treatment group completed a survey on their self-review and peer-review opinions. The survey results helped the researcher understand students' opinions about using peer-review during English writing. There were sixteen questions in the survey, and students had options to choose their choices for the first fourteen Likert-scale questions based on their experience. The last two questions were open questions, included in

research question # 6. There are five levels for students to choose from for each of those fourteen questions: *5-Strongly Agree*, *4-Agree*, *3-Neutral*, *2-Disagree*, and *1-Strongly Disagree*. The first fourteen survey questions are listed below:

1. *The self-checklist helped to increase my writing scores.*

2. *The self-checklist motivated me to improve my writing scores.*

3. *The self-checklists helped to improve my writing fluency.*

4. *The self-checklists helped to improve my writing grammar.*

5. *The self-checklists helped to improve my writing vocabulary.*

6. *The self-checklists helped to improve my writing spelling.*

7. *I would recommend the self-checklist to my other ESL friends to improve their writing scores.*

8. *The peer-review worksheets helped to increase my writing scores.*

9. *The peer-review worksheet motivated me to improve my writing scores.*

10. *The peer-review worksheets helped to improve my writing fluency.*

11. *The peer-review worksheets helped to improve my writing grammar.*

12. *The peer-review worksheets helped to improve my writing vocabulary.*

13. *The peer-review worksheets helped to improve my writing spelling.*

14. *I would recommend the peer-review worksheets to my other ESL friends to improve their writing scores.*

Among the above fourteen questions, the first seven questions were for self-review, and the last seven questions were for peer-review. Since the survey was optional for the treatment group students, out of 12 students in the treatment group, only eight students completed the survey and submitted their feedback. The rating score distribution for fourteen questions is in

Figure 2. As shown in Figure 2, more students provided a "*5-Strongly Agree*" rating score for the peer-review survey questions (last seven questions). However, more students choose to provide a "*3-Neutral*" rating score for self-review survey questions. The number of students to select "*4-Agree*" rating scores were comparable for the self-review and the peer-review survey questions.

Figure 2

Rating score distribution for all fourteen survey questions
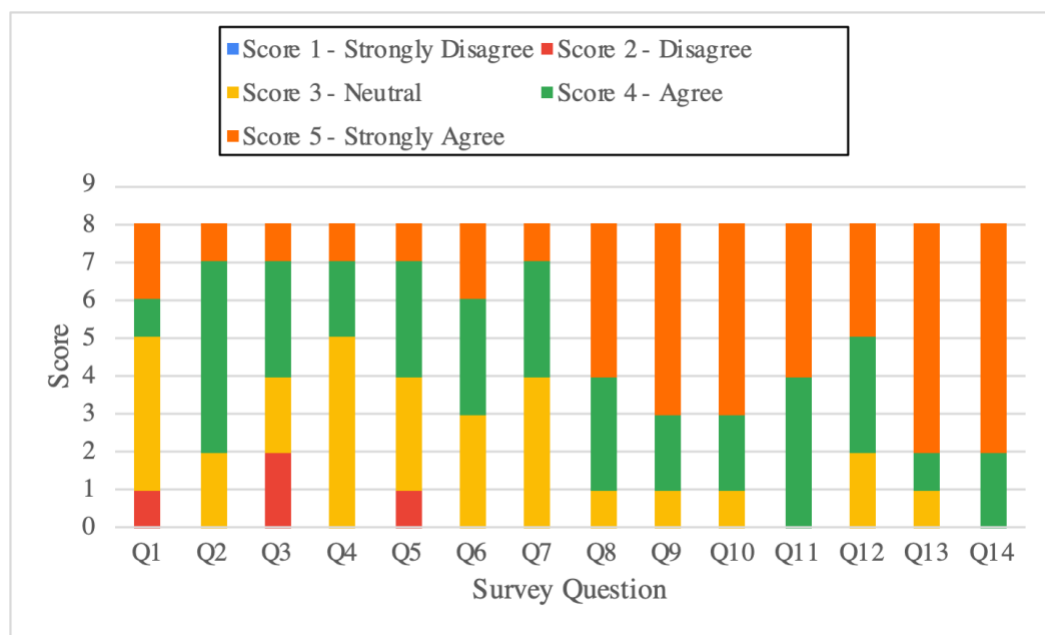
The mean values of rating scores for each question are in Figure 2. Figure 2 indicates that the rating scores for the last seven questions (peer-review questions) are higher than the first seven questions (self-review questions). This result indicates that more ESL students believe that peer-review can better help them improve their writing scores. The highest rating scores for the first seven questions are Q2 (*the self-checklist motivated me to improve my writing scores*) and Q6 (*the self-checklists helped to improve my writing spelling*). The lowest rating score for the first seven questions is the Q3 (*the self-checklists helped to improve my writing fluency*). The highest rating score for the last seven questions is Q14 (*I would recommend the peer-review*

worksheets to my other ESL friends to improve their writing scores). The lowest rating score for

the last seven questions is Q12 (*the peer-review worksheets helped to improve my writing*

vocabulary).

Figure 3

Mean Values of Students' Rating Scores on All Survey Questions
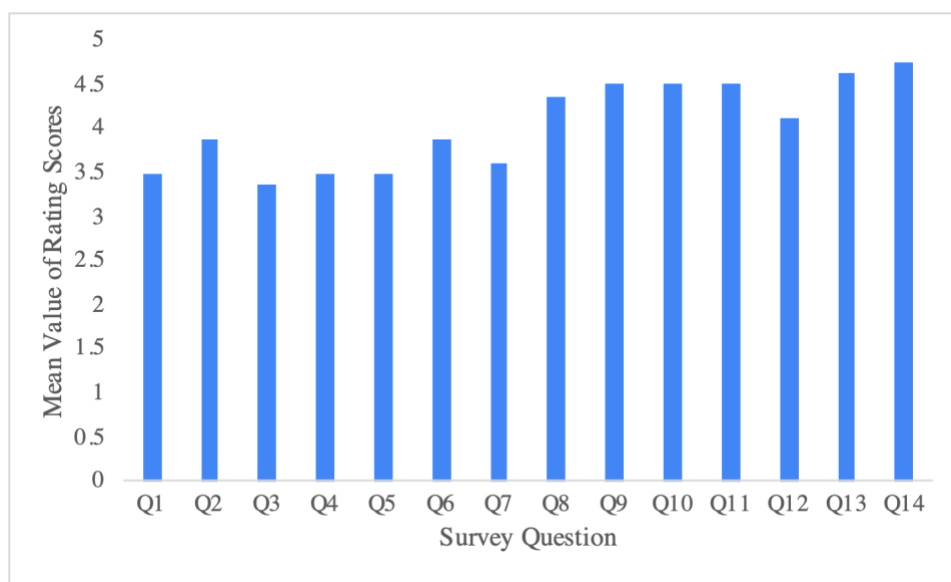
To better investigate the influence of students and survey questions on the rating scores,

The researcher also analyzed the results from each student over self-review and peer-review survey

questions. The descriptive statistics for the comparison are in Figure 3. From the data in Figure 3,

the mean values of rating scores for peer-review questions are better than most students' self-

review questions.

Table 18

Means and Standard Deviations for Rating Scores for Peer-Review and Self-Review Survey

Questions from All Students

Student	Question	Mean	SD
1	Peer	4.71	0.49
	Self	3.14	0.69
	Total	3.93	0.99
2	Peer	4.43	0.53
	Self	2.86	0.69
	Total	3.64	1.01
3	Peer	4.57	0.53
	Self	2.86	0.38
	Total	3.71	0.99
4	Peer	3.29	0.49
	Self	4.00	0.00
	Total	3.64	0.50
5	Peer	5.00	0.00
	Self	5.00	0.00
	Total	5.00	0.00
6	Peer	4.29	0.76
	Self	3.29	0.49
	Total	3.79	0.80
7	Peer	4.57	0.53
	Self	3.86	0.69
	Total	4.21	0.70
8	Peer	5.00	0.00
	Self	3.86	0.69
	Total	4.43	0.76
Total	Peer	4.48	0.69
	Self	3.61	0.85
	Total	4.04	0.88

To better present the data, the descriptive statistics are in Figure 4. Most students' rating scores for peer-review questions are equal to or higher than the self-review questions. The only exception is student 4, who scored higher for self-review questions over peer-review questions.

Figure 4

Comparison between Mean Values of the Rating Scores from Participating Students
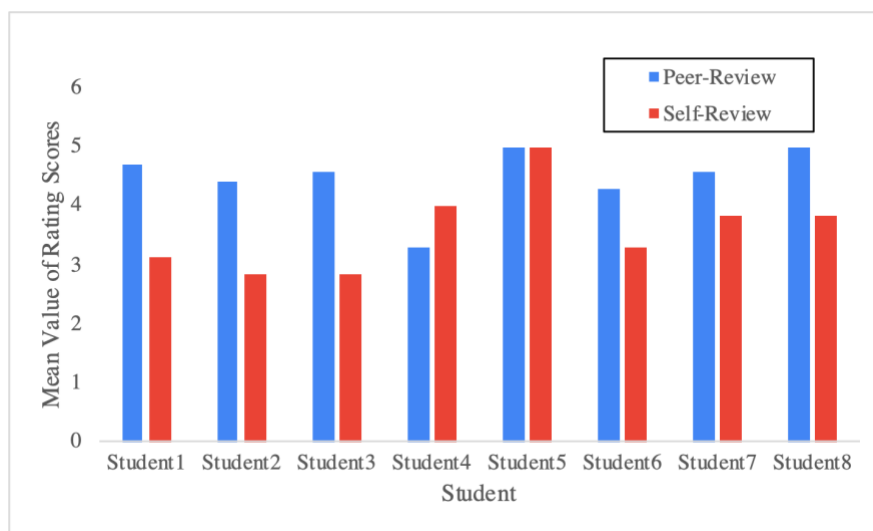
A one-way ANOVA analysis was used to determine if there was a statistically significant difference between the rating scores for peer-review survey questions and self-review survey questions. The one-way ANOVA revealed that there was a statistically significant difference between the rating scores for the peer-review and self-review survey questions at the *p* <.05 level ($F(1, 14) = 7.47$, *p* = .02). From these results, we can conclude that students also found peer-review was more helpful than self-review to improve their English writing.

Table 19

ANOVA Results for the Percentage of Score Improvement

	SS	*df*	*MS*	*F*	*Sig.*
Between Groups	3.06	1	3.06	7.47	.02
Within Groups	5.74	14	0.41		
Total	8.81	15			

Note. Statistically significant at the .05 level.

Qualitative Analysis

Research question # 7

What parts were most helpful or challenging regarding peer-review for English writing?

The qualitative portion of this study was to provide more in-depth information on the ESL students' attitude toward using peer-review in their writing class. Other than the first fourteen survey questions for research question # 5, there are also two qualitative questions in the survey. Eight students in the treatment group provided their feedback for below two questions:

1. *What parts of the peer-review activity did you find the most helpful?*

2. *What parts of the peer-review activity were challenging to you?*

Analysis of Qualitative Question 1

This analysis was intended to find how peer-review can help improve English writing scores for ESL students. Some students mentioned that implementing the feedback from classmates can help them fix more grammar and spelling errors. Students thought peer-review helped them share ideas with peers and encourage each other to participate in the classroom activities more actively. Some students also mentioned that peer-review helped them become more confident in English writing. Peer-review allowed students to behave as reviewers for other students, which is a great opportunity to practice their English speaking and listening skills.

Below are some responses from the students about their thoughts and attitude over the peer-review beneficiary:

- *"I like to talk with Tom at peer-review. His feedback is helpful."*

- *"I learn a lot from my peer. He has good suggestions for me."*

- *"I am happy I can help my peer improve his writing. I like peer-review."*

- *"My peer gives me feedback, and I use it to fix my grammar and spelling. Thank you!"*

- *"I like peer-review because it helps me think about how to improve my writing."*

Analysis of Qualitative Question 2

Besides the beneficiary of peer-review, it is also essential to study and analyze the students' perspectives on the difficulties and challenging parts of the peer-review activity. Based on students' feedback, the primary concern was about the quality of the peer feedback. With low-quality peer feedback, students cannot fully trust the input from others. Some students found that providing high-quality peer-review is very time-consuming and not efficient. The review quality was not good if a student needed to provide multiple studies to other students. Some students felt they didn't have enough confidence to accommodate additional students' feedback, especially when their ESL teacher did not guide peer-review. Some students tend to trust their teachers' feedback more than their peers' feedback. Some students also pointed out that some peer-review content is too much for them to accommodate, and it was hard to review each suggestion or advice. One student also mentioned that peer-review helped with grammar/spelling correction, but it cannot help to improve English writing overall writing scores. Some students also said that some peer-review feedback is objective and with bias.

Here are some responses from the students about their thoughts and attitude over the peer-review beneficiary:

- *"I think my peer does not give me correct feedback. I don't know how to make changes in my writing. I am confused. I like my teacher's feedback more."*

- *"The experience is not good. I have lots of negative feedback from my peer."*

- *"My grammar and spelling improved with my peer's feedback, but not sure why my total score didn't improve."*

Summary

Quantitative and qualitative analyses were conducted and presented in this chapter regarding the six proposed research questions. The above six research questions were summarized below:

An ANOVA was used to compare English writing scores between the comparison and treatment groups. The analysis showed no statistically significant difference in the baseline writing scores between the treatment and comparison groups. The results suggested that the students' English writing skills are similar between the treatment and comparison groups on all criteria. There was a statistically significant difference in grammar scores, spelling scores, and total scores between the self-review results and peer-review results for the post writing scores within the treatment group. However, there was no statistically significant difference in F/C/S scores and vocabulary scores between self-review and peer-review results within the treatment group. When comparing the post-writing scores, there was a statistically significant difference in grammar scores, spelling scores, and total scores between the treatment group (with peer-review) and the comparison group (with self-review); however, there was no statistically significant difference in F/C/S scores and vocabulary scores between the two groups. There was also a statistically significant difference in absolute score changes between the treatment group and the comparison group for grammar scores, spelling scores, and total scores regarding the score improvement from the baseline writing scores to the post writing scores. Still, there was no statistically significant difference in F/C/S and vocabulary score changes. Similarly, there was also a statistically significant difference in the percentages of the score improvement between the

treatment group and the comparison group for grammar scores, spelling scores, and total scores. Still, there was no statistically significant difference between the two groups in F/C/S and vocabulary s.

Feedback from the treatment group student' survey also revealed that students had a positive attitude toward peer-review. More students found that peer-review can better help them improve their English writing scores. Survey results also indicated that more students would like to recommend using peer-review to other students. Qualitative analyses were also applied to study the two open questions in the survey. Students shared their opinions on peer-review's most helpful and challenging parts of their English writing. In their view, the most valuable aspect was to improve the classroom activities, and they found that peer-review can help correct spelling and grammar errors. The most challenging part for them was to have enough confidence in taking other students' review feedback because they trust teachers' feedback more. Some feedback from their peers was vague and unclear, so they looked confusing. Also, they felt peer-review could not significantly help improve some other writing skills, e.g., it was not helpful to use peer-review to enhance the writing strategy.

CHAPTER V

SUMMARY, LIMITATION, DISCUSSION, CONCLUSION, IMPLICATIONS, AND RECOMMENDATIONS

Overview

This study aimed to investigate the effectiveness of peer-review as part of the writing process in college English as a Second Language (ESL) writing classes to improve ESL students' writing scores. This study investigated a statistically significant difference in college ESL students' writing scores between those who use the self-checklist and peer-review worksheet and those who only use the self-checklist for writing correctness in a writing assignment. Additionally, this study investigated the college-level ESL students' attitudes and opinions toward using the peer-review worksheets and self-checklists in a writing assignment. This study used a mix-method approach. Quantitative data measured the effectiveness of peer-review in the ESL classrooms on students' writing scores. The qualitative data in this study evaluated college-level ESL students' attitudes and opinions of using the peer-review worksheets and self-checklists in their writing assignments. This chapter summarizes the study, findings, limitations, a discussion of the results, implications for the research, and recommendations for future research.

Summary of Study

This study aimed to investigate the effectiveness of peer-review in college English as Second Language writing classes to improve ESL students' writing scores. This study investigated a statistically significant difference in college ESL students' writing scores between those who use the self-checklist and peer-review worksheet and those who only use the self-checklist for writing correctness in a writing assignment. More specifically, this study aimed to investigate the influence of different criteria on English writing scores, i.e., format/content/structure, grammar, vocabulary, and spelling. This study also examined students'

attitudes and opinions on peer-review in writing class. The independent variables in this research design were the peer-review worksheets and the self-checklist interventions. The dependent variables in this study were students' writing scores on the baseline writing assignment, which used a self-review checklist, and the post writing assignment, which used a peer-review editing worksheet. The other part of this study was the online survey. The treatment peer-review group received the survey link from the researcher and submitted it through Qualtrics. The online survey contained fourteen Likert-scale questions rating from 1 to 5. The Likert-scale questions asked students' perceptions of how peer-review helped them improve their writing skills in the total writing scores, content and format, grammar, vocabulary, and spelling. The open-ended questions addressed their favorite parts of the writing activities and what challenges they faced during the writing activities.

The study began with completing a baseline writing assignment for the treatment and control group one week before the experiment. Students from both groups wrote a baseline assignment at home without self-review or peer-review. After completing the writing assignment, students submitted their writing assignments to Canvas for grading. Given the permission from the instructors, the researcher had access to the correlative course Canvas site. The researcher downloaded all students' baseline writing assignments from Canvas and renamed students writing in numerical order. After that, the researcher packed these two groups of students' writing assignments into two zip files and sent them to the essay graders. There were two graders in this study. Both essay graders had a Master's degree in Teaching English as a Second Language and had at least two years of experience teaching at a college or university-level ESL writing classes. These two graders received the zip files from the researcher and used the grading rubric to grade each student's writing assignments. Once they completed the essay

grading process, the graded essays were sent back to the research, and students' grades on the baseline writing were collected.

The following week, the researcher joined the treatment group's Zoom meeting class and conducted a post-writing session using the self-checklist and the peer-review worksheet. Self-review checklist was a part of both ESL classes, so students could comfortably do the self-review with the self-review checklist provided. Students made revisions and edits and uploaded their revised writing to Canvas for grade 2. In addition, in the same week, once they received grade 2, the researcher joined another Zoom class session with the treatment group to facilitate the peer-review activity. Students were randomly paired into six Zoom breakout rooms and reviewed each other's papers using peer-review worksheets. Students participated in these Zoom breakout sessions and collaborated to share feedback. Once the peer-review was completed, students worked on their writing assignments to make some changes based on the feedback they received from their peers. Lastly, students submitted their final writing assignments to Canvas for a new grade 3. Another part of this study was the survey part. The treatment group received an online survey link through their school email from the researcher. Similar to the treatment group, the comparison group students did the baseline writing and the post-writing with a self-review activity. However, they didn't do the peer-review activity.

There were seven research questions in this study.

1. To what extent was there a difference between the comparison and treatment groups on the baseline writing scores?

   a. To what extent was there a difference between the comparison group and the treatment group students' baseline writing scores on FCS (format, content, structure)?

b. To what extent was there a difference between the comparison group and the treatment group students' baseline writing scores on grammar?

c. To what extent was there a difference between the comparison group and the treatment group students' baseline writing scores on vocabulary?

d. To what extent was there a difference between the comparison group and the treatment group students' baseline writing scores on spelling?

2. To what extent was there a score difference between the self-review and peer-review results within the treatment group for the post-writing test?

a. To what extent was there an FCS (format, content, structure) score difference between the self-review and the peer-review results within the treatment group for the post-writing test?

b. To what extent was there a grammar score difference between the self-review and peer-review results within the treatment group for the post-writing test?

c. To what extent was there a vocabulary score difference between the self-review and peer-review results within the treatment group for the post-writing test?

d. To what extent was there a spelling score difference between the self-review and peer-review results within the treatment group for the post-writing test?

3. To what extent was there a difference between the comparison group and the treatment group on the post-writing scores?

a. To what extent was there a difference between the comparison group and the treatment group students' post-writing scores on FCS (format, content, structure)?

    b. To what extent was there a difference between the comparison group and the treatment group students' post-writing scores on grammar?

    c. To what extent was there a difference between the comparison group and the treatment group students' post-writing scores on vocabulary?

    d. To what extent was there a difference between the comparison group and the treatment group students' post-writing scores on spelling?

4. To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing?

    a. To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing in FCS (format, content, structure)?

    b. To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing in grammar?

    c. To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing in vocabulary?

    d. To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing in spelling?

5. To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing?

a. To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing in FCS (format, content, structure)?

b. To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing in grammar?

c. To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing in vocabulary?

d. To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing in spelling?

6. What did the survey results indicate the student feedback regarding peer-review for the English writing?

7. What parts were most useful or challenging regarding the use of peer-review for English writing?

Summary of Findings

The findings of this study include both qualitative and quantitative results. Research questions 1 through 5 were addressed by quantitative analysis to study the influence of the peer-review process on different writing scores. Research questions 6 and 7 were addressed by quantitative and qualitative analysis. Qualitative findings addressed the last question to study the most valuable and challenging parts of using peer-review from students' points of view.

Research question 1 included four sub-questions: (a) To what extent was there a difference between the comparison group and the treatment group students' baseline writing scores on FCS (format, content, structure)? (b) To what extent was there a difference between the comparison group and the treatment group students' baseline writing scores on grammar? (c) To what extent was there a difference between the comparison group and the treatment group students' baseline writing scores on vocabulary? (d) To what extent was there a difference between the comparison group and the treatment group students' baseline writing scores on spelling? The analysis showed no statistically significant difference between the comparison and treatment groups in the mean values and standard deviations for the baseline writing scores for all criteria. A one-way ANOVA revealed that there was no statistically significant difference in total scores at the $p < .05$ level between the treatment and comparison group $F(1, 23) = 0.03$, $p = .86$. Similarly, there was no statistically significant difference at the $p < .05$ level between the treatment and comparison group in F/C/S scores $F(1, 23) < 0.01$, $p = .95$, grammar scores $F(1, 23) < 0.01$, $p = .96$, spelling scores $F(1, 23) < 0.01$, $p = .96$), and vocabulary scores $F(1, 23) = 0.04$, $p = .85$. These results suggest that the treatment and comparison group's baseline writing scores in all criteria did not significantly differ.

Research question 2 consisted of four sub-questions: (a) To what extent was there an FCS (format, content, structure) score difference between the self-review and the peer-review results within the treatment group for the post-writing test? (b) To what extent was there a grammar score difference between the self-review and peer-review results within the treatment group for the post-writing test? (c) To what extent was there a vocabulary score difference between the self-review and peer-review results within the treatment group for the post-writing test? (d) To what extent was there a spelling score difference between the self-review and peer-review results

within the treatment group for the post-writing test? The results revealed that there was a statistically significant difference in the treatment group's total scores between self-review results and peer-review results at the $p <.05$ level $F(1, 22) = 18.12$, $p < .001$. Statistical results indicated that the peer-review process led to higher total scores on the writing rubric ($M = 15.04$, $SD = 1.16$) and was significantly different from the students' writing scores after self-review ($M = 12.67$, $SD = 1.64$). This result suggests that the peer-review process can help students in the treatment group have better total writing scores. Similarly, there was a statistically significant difference between self-review results and peer-review results at the $p <.05$ level in grammar scores $F(1, 22) = 6.87$, $p = .02$ and spelling scores $F(1, 22) = 16.18$, $p < .01$. However, there was no statistically significant difference between self-review results and peer-review results at the $p <.05$ level in F/C/S scores $F(1, 22) = 3.09$, $p = .09$ and vocabulary scores $F(1, 22) = 3.61$, $p = .07$. These results suggest that with the help of peer-review, students from the treatment group had significant score improvement in grammar scores, spelling scores, and total scores, but not in F/C/S and grammar scores.

Research question 3 included four sub-questions: (a) To what extent was there a difference between the comparison group and the treatment group students' post-writing scores on FCS (format, content, structure)? (b) To what extent was there a difference between the comparison group and the treatment group students' post-writing scores on grammar? (c) To what extent was there a difference between the comparison group and the treatment group students' post-writing scores on vocabulary? (d) To what extent was there a difference between the comparison group and the treatment group students' post-writing scores on spelling? Similar to the findings for research question 2, the scores for the treatment group were higher than the scores for the comparison group for all criteria. Moreover, the score distribution for the treatment

group was more concentrated than the comparison group. The results revealed that there was a statistically significant difference in the post-writing total scores between the treatment and the comparison group at the $p < .05$ level $F(1, 23) = 11.97$, $p < .01$. Statistical results indicated that the total post-writing scores in the treatment group ($M = 15.04$, $SD = 1.16$) were significantly higher than the scores from the comparison group ($M = 12.88$, $SD = 1.85$). Similarly, there was a statistically significant difference between the comparison group and the treatment group at the $p < .05$ level in grammar scores $F(1, 23) = 5.42$, $p = .03$ and spelling scores $F(1, 23) = 12.39$, $p < .01$. However, there was no statistically significant difference between the comparison group and the treatment group at the $p < .05$ level in F/C/S scores $F(1, 23) = 3.73$, $p = .07$ and vocabulary scores $F(1, 23) = 3.42$, $p = .08$. These results suggest that with the help of peer-review, students in the treatment group only had better grammar scores, spelling scores, and total scores than the students in the comparison group with self-review for the post-writing test. However, F/C/S scores and grammar scores are comparable between the two groups.

　　Research question 4 included four sub-questions: (a) To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing in FCS (format, content, structure)? (b) To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing in grammar? (c) To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing in vocabulary? (d) To what extent was there a difference between the comparison group and the treatment group regarding the score change from the baseline writing to the post-writing in spelling? The results revealed that there was a statistically significant difference in the absolute total score changes between the treatment

and the comparison group at the $p < .05$ level $F(1, 23) = 5.51$, $p = .03$. Statistical results indicated that the absolute total score change in the treatment group ($M = 3.83$, $SD = 1.88$) were significantly different than the comparison group ($M = 2.61$, $SD = 1.46$). This result suggests that the absolute total score changes in the treatment group are significantly better than the absolute total score changes in the comparison group. Similarly, there was a statistically significant difference between the comparison group and the treatment group at the $p < .05$ level in grammar score changes $F(1, 23) = 4.33$, $p = .04$ and spelling score changes $F(1, 23) = 10.03$, $p < .01$. However, there was no statistically significant difference between the comparison group and the treatment group at the $p < .05$ level in F/C/S score changes $F(1, 23) = 1.88$, $p = .18$ and vocabulary score changes $F(1, 23) = 0.59$, $p = .45$. These results suggest that with the help of peer-review, students in the treatment group had better grammar, spelling, and total score changes than the students in the comparison group. However, F/C/S and grammar score changes are comparable between the two groups.

Research question 5 included four sub-questions: (a) To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing in FCS (format, content, structure)? (b) To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing in grammar? (c) To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing in vocabulary? (d) To what extent was there a difference between the comparison group and the treatment group regarding the percentage of score change from the baseline writing to the post-writing in spelling? The results revealed that there was a statistically significant

difference in the percentage of total score changes between the treatment and the comparison group at the p <.05 level $F(1, 23) = 4.39$, $p = .04$. Statistical results indicated that the percentage of total score change of the treatment group ($M = 39\%$, $SD = 0.26$) was significantly different than the comparison group ($M = 21\%$, $SD = 0.18$). This result suggests that the percentage of total score changes in the treatment group is significantly better than in the comparison group. Similarly, there was a statistically significant difference between the treatment and the comparison group at the p <.05 level in the percentage of grammar score changes $F(1, 23) = 4.49$, $p = .04$ and spelling score changes $F(1, 23) = 5.43$, $p = .03$. However, there was no statistically significant difference between the comparison group and the treatment group at the p <.05 level in the percentage of F/C/S score changes $F(1, 23) = 1.18$, $p = .29$ and vocabulary score changes $F(1, 23) = 0.63$, $p = .43$. These results suggest that with the help of peer-review, students in the treatment group had better grammar, spelling, and total score percentage changes than the students in the comparison group. However, F/C/S and grammar score percentage changes are comparable between the two groups.

Research question 6 was "what did the survey results indicate the student feedback regarding the use of peer-review for the English writing?". It aimed to understand ESL college students' perceptions of using peer-review in writing class. Students' feedback about fourteen questions was collected: the first seven questions were about self-review, while the last seven questions were about peer-review. There were five levels for students to choose from each of those fourteen questions: *5-Strongly Agree, 4-Agree, 3-Neutral, 2-Disagree*, and *1-Strongly Disagree*. More students decided to give higher scores for peer-review questions based on the analysis.

Research question 7 was "What parts that students find to be most useful or challenging regarding the use of peer-review for English writing?". The replies to the open questions listed from students in the survey indicated that students found the most valuable part of peer-review was improving the classroom activities and correcting spelling and grammar errors. The results also showed that students found the most challenging part of using peer-review was having enough confidence in taking other students' vague and unclear review feedback. Students also found that peer-review cannot significantly help to improve the process of English writing.

Limitations

There were several limitations in this study. The first limitation of this study was the external validity (Cohen, Manion, & Morrison, 2000). External validity describes whether the results of a research study can be generalized within a large group population. This study used a small sample size because of some unexpected reasons. Due to COVID-19, both ESL writing classes had insufficient student enrollment in the Fall of 2021 due to some uncontrolled issues. First, both colleges decided to hold online courses due to pandemics, so most ESL students prefer to drop out of the ESL classes and wait until there's an in-person option. Second, the college of the treatment group used to offer two intermediate Reading & Writing classes before the pandemic, and each class at least had 25 students previously. However, in the Fall semester of 2021, there was only one ESOL Reading & Writing class due to low enrollment.

Last but not least, there was a massive drop in the ESOL program application rate due to the visa application constraints, international travel policies, and limited flights. Most international students decided not to take the risk application for a student visa and chose to stay in their country in the Fall semester. All the above reasons caused the small sample size of this study. The small sample size limited the generalizability of the results.

The second limitation of this study was the students' lack of experience with technology, especially the software used in the virtual classrooms. Most ESL students from these two groups had minimal experience using Canvas, Microsoft Word, and Zoom. Some students only had a few months of study experience in the United States, and they had never used this software in their countries. Also, some students learned how to use Canvas, Zoom, and Microsoft Word very fast, whereas some took a long time getting used to these tools. Some students struggled with identifying the features of the tools and understanding the meaning of the features labeled in English. In this study, some students had no experience using any technology and had no idea about using Microsoft Word. This made the self-review and the peer-review process very challenging and time-consuming. The researcher had to spend plenty of time educating students on how to successfully download the self-checklist and peer-review documents from the Canvas site and answer their questions after the demonstration session. Some students had broken voices, poor video quality, and connection issues during the Zoom classes. These unexpected problems affect students' learning experience.

The fourth limitation of this study was students' passive attitudes toward the online learning experience. Due to the change in this teaching environment, teaching style, and some health issues during the pandemic, most students had some unexpected emotional problems which directly affected their learning attitude. Students were easy to feel anxious about learning new things from a Zoom class, and they were not feeling comfortable turning on their cameras during the Zoom meeting session. Some students were not engaged in the class, and they were easy to get tired and lost the course. According to Souheyla (2021), using technology in online learning settings increases students' classroom motivation and learning outcomes. Souheyla (2021) also indicated that using Zoom in the classroom caused ambiguity and misunderstanding

in some contexts and messaging. During the virtual settings, it's challenging for students to interact and collaborate with their classmates.

The last limitation of this study was students' various English speaking and listening proficiency levels. Some students had challenges understanding the researchers' speaking. Among these students, only very few students asked the researcher for clarification. Still, a few students didn't fully understand the instructions until the researcher joined their breakout rooms and asked if they needed any help. There was a situation where the paired peer-review students had different speaking and listening skills levels. The result was that these students might not have very efficient communication during the peer-review activity.

Discussion of Findings

This study was conducted to examine the effectiveness of peer-review in college English as Second Language writing classes to improve ESL students' writing scores. It also investigated a statistically significant difference in college ESL students' writing scores between those who use the self-checklist and peer-review worksheet and those who only use the self-checklist for writing correctness in a writing assignment. More specifically, this study was conducted to determine the influence of different areas on students' English writing scores, i.e., format/content/structure, grammar, vocabulary, and spelling. In addition, this study explored students' attitudes and opinions on peer-review in writing class.

This research was a mixed-methods study with a quasi-experimental design that included qualitative and quantitative components. The quantitative component included participants' essay writing scores on the baseline writing and post-writing assignments. The quantitative component was an online survey for the treatment group. These components examined the

effectiveness of peer-review to improve college ESL students' writing scores. Some findings of this study supported the following previous research studies in the following ways.

To answer the first research question, "To what extent was there a difference between the comparison and treatment group on the baseline writing scores?, which included four sub-questions: (a) To what extent, was there a difference between two groups regarding FCS (format, content, structure) scores for the baseline writing test? (b) To what extent, was there a difference between the two groups regarding grammar scores for the baseline writing test? (c) To what extent, was there a difference between the two groups regarding vocabulary scores for the baseline writing test? (d) To what extent, was there a difference between the two groups regarding spelling scores for the baseline writing test? This study used descriptive statistics to analyze the treatment and comparison groups' score differences in FCS, grammar, spelling, and vocabulary. The result indicated no statically significant influence between the groups' English writing skills among the four criteria, suggesting that the baseline writing scores between the two groups were similar and negligible. It was easy to understand why there was no statistical difference. The reason was that both groups of students were from the same community college district, and they used the same textbooks, syllabus, and similar teaching techniques in their writing classes. Since the first research question was designed to determine whether there is a statistical difference between the treatment group and the comparison groups' level of English, the researcher believed there was no need to compare the findings with other research.

The second, third, and the fourth research question were designed to examine whether peer-review had a statistically significant influence on college ESL students' post-writing scores between the treatment group (that used peer-review) and the comparison group (that did not use peer-review)? In addition, these research questions also studied to what extent there was a

difference in students writing scores among FCS, grammar, spelling, and vocabulary. These research questions reveal that peer-review had a statistically significant effect on students' post-writing scores. In particular, peer-review improved students writing scores significantly in spelling and grammar. There was not much improvement in F/C/S and vocabulary compared with spelling and grammar. Similar studies also find that peer-review helped ESL students improve their writing scores in the writing class. Sethares and Morries (2015) investigated the benefits of peer-review in a writing assignment for university students. Their study showed that 82% of students found the peer-review activity beneficial because it helped improve their writing skills, and 77% of students improved their appreciation of the role of peer-review. In addition, the study found that some students found it difficult to give constructive feedback even though they thought the peer-review process was beneficial.

This study also supports research that suggests that ESL students should have an opportunity to ask questions about the writing criteria (content, structure, vocabulary, and language use) and peer-review instructions during the peer-review process. Hence, they better understand how to provide learners constructive feedback (Meletiadou, 2021). Meletiado's (2021) study adopted a quasi-experimental approach to explore the impact of peer-review on English as Foreign Language students writing performance. The results indicated that peer-review positively impacted college students writing performance in the above criteria.

The finding of this study was also in agreement with what has been found by other previous researchers. The results from Kusumaningrum, Cahyono and Prayogos (2019) recent study found that with peer-review in the writing class, students who used peer-review in the writing process gained 5.72 points in mean. In contrast, those who did not peer-review in the writing process only gained 3.98 points in the mean number. Cahyono and Prayogos' (2019)

study also revealed that students' writing performance improved with peer feedback because, according to *Vygotsky's theory of Zone of Proximal Development* (Saville-Troike, 2006), students socialize with peers, they can learn from their peers. Students had opportunities to collaborate and share learning experiences during the peer-review process.

This appears a piece of evidence that is supported by Ho (2015), Jordan (2020), and Sun (2020) that peer-review in college English writing classes is beneficial to students writing performance. Sun's (2020) study confirmed that peer-review could benefit students' composition level compared with traditional writing assessments. Additionally, his study verified that the peer-review process could be more effective with writing evaluation criteria. Peer-review should be considered an ongoing teaching technique for college ESL writing teachers. The result of the above studies depicted that students had better writing performance after using peer-review in their writing classes. The current research shows that peer-review can be a promising writing technique in college ESL classes to improve students writing scores. In addition, it can help raise the awareness of using new education technology to support the first generation ESL students improve their in-class interactivity and motivation.

There is a contradictory finding in the current study with previous research. Zhao's (2018) study found that ESL students from China had a very narrow perspective of peer-review and were hesitant to incorporate peers' feedback into their writings. The researcher concluded that the reasons were because of several reasons. First, there was a lack of instruction for helping students get to know how to use peer-review. Second, due to the examination-oriented education system in China, students had limited English proficiency and less learning motivation. Also, students in China preferred to take teachers' feedback because of the teacher-driven culture. Overall, peer-review was not helpful to students from China in their writing classes.

The fifth and sixth research questions were designed to understand ESL college students' attitudes and overall learning experience using peer-review in the writing class. The qualitative data of this study demonstrated that there was statistically significant use of peer-review, which means that most students believed that peer-review helped them improve their writing scores. However, a small portion of students didn't find peer-review helpful for several reasons. First, they didn't trust their peers' feedback. Second, they received too much negative feedback and had no idea how to make changes. Third, they didn't find peer-review helpful in improving their total writing scores.

The current study also found similar results (Yuehchiu, 2007; Ahmed, 2020; Mirick, 2020). Yuehchiu's (2007) study revealed that some students believed revising their writings with peers' feedback helped improve their English writing skills. Interestingly, some students prefer to reevaluate their peers' feedback before making changes; in other words. they won't take all feedback from their peers. Findings from Ahmed's (2020) study demonstrated that students believed that their peers' feedback was more effective than teachers' feedback because students had more freedom to focus on what they thought was important when reviewing peers' writing. His study also suggested that both the writing instructors and students emphasized providing constructive feedback during the peer-review process. Overall, students had a very positive attitude in terms of peer-review.

Some contradictory findings in the literature regarding students' opinions on peer-review in the college ESL writing class (Satake, 2021; Mirick, 2020; Cho, Schunn & Wilson, 2006). Results from Satake's (2021) study suggest that when students were doing the peer-review activity, they felt peer pressure when they found their peers had higher English proficiency levels. This peer pressure can lead to a negative learning experience for students. Findings from

Cho, Scunn, & Wilson (2006) indicated that students felt criticized or defended they received negative feedback from their peers.

Conclusion

This study aimed to investigate the effectiveness of peer-review in college English as Second Language writing classes to improve ESL students' writing scores. This study investigated a statistically significant difference in college ESL students' writing scores between those who use the self-checklist and peer-review worksheet and those who only use the self-checklist for writing correctness in a writing assignment. More specifically, this study aimed to investigate the influence of different criteria on English writing scores, i.e., format/content/structure, grammar, vocabulary, and spelling. This study also examined students' attitudes and opinions on peer-review in writing class.

As a result of this study, the following paragraphs can be drawn regarding the effectiveness of peer-review in the college ESL writing class to improve students' writing scores.

This study included quantitative and qualitative data that provide insights to evaluate the effectiveness of peer-review worksheets in college ESL writing classes. This study found that the treatment peer-review group had better writing scores than the comparison self-review group. Peer-review worksheets in the college ESL writing class played a significant role in improving students' post-writing scores compared with students who only used the self-review checklist but not the peer-review worksheets. In addition, students' survey results showed that most students chose "5 - Strongly Agree" rating scores for the use of peer-review questions which indicated that they believed that peer-review helped improve their writing scores in fluency, grammar, vocabulary, spelling, and the overall scores. Moreover, the qualitative data from the survey showed that students were delighted with the use of peer-review in their ESL writing classes.

Most feedback for peer-review activities was very positive except for a few. For example, one student expressed that the peer-review feedback was ineffective because their peer preferred providing negative feedback instead of neutral or positive feedback, which was discouraging. Another student reported that they could easily find spelling and grammar mistakes in peers' writing but had no idea how to improve the writing structure.

In addition, the study indicated that there was a statistically significant in students' post-writing scores between these two groups across four criteria (format, content & structure, grammar, vocabulary, and spelling). In particular, the improvement in the peer-review treatment group students' writing scores in spelling and grammar have statistical significance.

Implications for Educational Practice

Peer-review is a process of evaluating work performance by peers. In recent years, many studies (Rollinson, 2015; Guardado & Shi, 2007) indicated that peer-review for ESL students writing classes is beneficial in different aspects, including social, cognitive, affective, and methodological benefits (Crossman & Kite, 2012). Accordingly, peer-review in English as a Second Language (ESL) writing classrooms has been generally supported. In Zhang's (1995) and Tang's (1999) studies, researchers stated that using peer-review can help to increase awareness of audience needs by creating a collaborative environment.

This thesis studied the influence of using peer-review on the writing scores in different criteria, i.e., format/content/structure, grammar, vocabulary, and spelling. It is found that by using peer-review, ESL students can improve their writing under different criteria. There are several ways of providing peer-review in the ESL classroom: (a) face-to-face peer-review (Ahmed & Abdu, 2021), (b) text-only peer-review (Li & Li, 2018) using a checklist or a standard form, (c) digital peer-review (Li & Li, 2018) using email or bulletin-board posting. Face-to-face

can provide better communication between students, and immediate feedback can be given. Test-only peer-review offers opportunities for anonymity, and it can be more complete since feedback is usually given based on the checklist. Digital review is simple to use, and the digital platform can make the review process easier and faster. ESL instructors are suggested to choose the proper peer-review method based on their needs.

There are many reasons educators use the peer-review process in ESL English writing classrooms. First, students can provide valuable and valid feedback. Second, peer readers can give feedback from a student's perspective, which can be different from the feedback from ESL teachers. Moreover, all students can provide more immediate feedback. Especially for ESL students, writing is more for communication purposes. Peer-review from other students can make them aware of their writing effectiveness. Besides, peer-review can also help improve collaboration and communication in the ESL writing classroom, which is also very important for educators. Different interactions during the peer-review, e.g., involving arguing, explaining, clarifying, and justifying, can better help ESL students in their writings.

This study also found that peers can spend much more time providing feedback on individual English writing than the ESL instructor. From the survey results, some students even complained that the feedback from their peers was too much for them. With the help of peer-review, students may be motivated or encouraged to revise their writings further. This also matches the finding that students in this study are more likely to recommend using peer-review in writing class. Since peers can provide helpful feedback at various levels, teachers can encourage ESL students to have multiple drafts with intervention responses from numerous students.

Moreover, it is suggested to use peer feedback to complement the teacher's feedback. By giving the ESL students practice becoming reviewers or critical readers, teachers are also helping them become more self-reliant writers. Students can be more self-critical of their writings, and they can have the ability to perform self-edit and revise their writing assignments.

Other than the positive findings, problematic aspects of peer-review should also be considered for ESL instructors. Peer-review can be a very time-consuming process. Peers need to read drafts from others, make notes, and finally write comments. This process can consume a significant amount of time. ESL instructors need to carefully consider those times when they plan and set the class schedule. Also, it was found in this research that some students complained about the quality of the review comments from their peers. It would be profitable if students could get some pre-training level to learn various basic procedures. For example, students can learn the basic procedures to evaluate logic, express criticism, and make more concise suggestions. In this research, it was also found that some students had concerns over the qualification of their peers to provide reviews. Therefore, it is also suggested that teachers review the peer feedback first and correct the inappropriate comments. This research also found that some students thought the peer-review process could help correct grammar and spelling errors; however, it is less helpful to improve the writing process. At ESL students' level, it would be hard for them to provide insightful comments and feedback regarding the writing flow or the writing logic to improve the writing quality. For this case, teachers need to be engaged to guide students to think more about the writing strategy during their peer-review. This can help students have a better sense of critical thinking, which can better help students themselves to better self-edit and improve their writings in the future.

Apart from studying the overall influence of peer-review on ESL students' writing scores, this study carefully examined the impact of peer-review on each writing criteria and the influence of peer-review on score improvement. This study can help educators be more aware of the benefits and limitations of peer-review in writing classes for ESL students. Educators need to recognize that practice makes progress when learning to write well. This is especially true for ESL students. Peer-review has the potential to improve writing while developing other essential skills, e.g., communication, socialization, and critical thinking. To implement the peer-review, students also need to respond and defend their positions, which will benefit both them and instructors in the English learning classroom.

Recommendations for Future Research

To examine the effectiveness of peer-review in the college ESL writing class, recommendations for future research are shown in the following paragraphs.

There are three main implications for future research in this study. First, future research should consider ESL students' familiarity with educational technologies, such as Zoom, canvas, and google docs in a virtual learning setting. Students' lack of understanding of software tools would affect their learning experience and their learning motivation. When students find it challenging to learn new technologies, their patience and encouragement would largely diminish. It might also be helpful if there is a technical supporter in the virtual class. This way would be much more effective in resolving students' technical difficulties. It may also be helpful to provide students with some learning resources to practice the software before doing the experiment instead of teaching them how to use the software on the experiment day.

In addition to the need for support in technology in a virtual class, further research should consider a way to encourage students to feel more confident when speaking in front of

computers. The researcher noticed that some students felt very intimidated when communicating with their peers in Zoom when observing students' performance during the peer-review activity. The results of feeling intimidated may contribute to ineffective peer interaction, and eventually, students may not benefit from the peer-review activity. The researcher also found that some students felt very anxious when asked to answer questions in a virtual classroom. Students' anxiety may cause a lack of interaction and communication. During the COVID -19 period, most schools only offered online classes, making it hard for students to adapt to this new learning environment. In particular, those who just arrived in the United States can quickly become emotional or feel anxious when turning on their camera or speaking in front of their computer. Further research should explore ways to help ESL students feel more comfortable and confident when speaking in front of their computers when conducting a virtual activity.

Thirdly, this research study was conducted online via Zoom, so students did not have the opportunity to do an in-person peer-review or survey. Some students reported that they disliked the online activities because they didn't feel they belonged or were comfortable, especially when doing the peer-review activities. In-person peer-review activity might give students more confidence and flexibility when sharing feedback. According to Areşan and Țîru (2022), online learning cannot offer personal engagement between teacher and students, and it cannot build relationships between students either. Online learning does not provide an effective learning platform for students to share their ideas or communicate with each other (Areşan & Țîru, 2022).

Last but not least, future researchers may examine how gender differences make a difference in students' peer-review feedback. This study found that female students intended to

give less feedback than male students, and female students gave higher writing scores to their peers than male students.

CLOSING REMARKS

This research was conducted to investigate the effectiveness of peer review as part of the writing process in college English as a Second Language writing classes to improve ESL students' writing scores. The purpose of this study was to determine if there was a statistically significant difference in college ESL students' writing scores between those who used the self-checklist and peer review worksheet and those who only used the self-checklist for writing correctness in a writing assignment. Additionally, this study was used to investigate the college-level ESL students' attitudes and opinions toward using the peer-review worksheets and self-checklists in a writing assignment. The findings of this study showed that peer review activity in the college English as A Second Language (ESL) writing class played an important role in improving students' writing scores. In addition, most ESL students had positive feelings about using peer review in their ESL writing classes because it helped improve their English grammar and spelling skills. Even though there were a few negative feedback from ESL students about the use of peer review, e.g., some students found the most challenging part of using peer-review was having not enough confidence in taking other students' vague and unclear review feedback.

Future studies can explore using peer review to improve college ESL students' speaking, reading, and confidence skills. Peer review, a new teaching writing technique, has been widely applied to many ESL classroom settings to improve students' essay writing performance (Ho, 2015). Educational technology can change the way students learned. Thus, future educators are strongly recommended to explore more about peer review and apply it to multiple subjects in their teaching methods.

REFERENCES

Afshar, H. S., & Asakereh, A. (2016). Speaking skills problems encountered by Iranian EFL freshmen and seniors from their own and their English instructors' perspectives. *Electronic Journal of Foreign Language Teaching*, *13*(1), 112–130.

Ali, S., Tariq, & Khan, W. (2020). The impact of poetry on developing grammatical competence of English as Second Language learners. *Hamdard Islamicus*, *43*(1), 668–679.

Artigliere, M. (2019). The Proficiency, Instructional and affective domains of long term English language learners: A Review of the Research. *TESL-EJ*, *23*(1), 1–19.

Amoah, S., & Yeboah, J. (2021). The speaking difficulties of Chinese EFL learners and their motivation towards speaking the English language. *Journal of Language & Linguistics Studies*, *17*(1), 56–69.

Annadani, R. R., & Undi, M. (2021). A study to assess the effectiveness and perception of students regarding case based Learning over traditional teaching methods in Community Medicine. *Indian Journal of Community Health*, *33*(1), 41–46.

Alt, D., Alt, N., & Hadar-Frumer, M. (2020). Measuring Halliwick foundation course students' perceptions of case-based learning, assessment, and transfer of learning. *Learning Environments Research*, *23*(1), 59–85.

Ahmed, R., & Al-Kadi, A. (2021). Online and face-to-face peer review in academic writing: Frequency and preferences. *Eurasian Journal of Applied Linguistics*, *7*(1), 169–201.

Ahmed, R. (2021). Peer review in academic writing: Different perspectives from instructors and students. *TESOL Journal*, *12*(1).

Ahmed, R., & Abdu, A. K. (2021). Online and face-to-face peer review in academic writing: Frequency and preferences. *Eurasian Journal of Applied Linguistics*, *7*(1), 169-201.

Areşan, D., & Ţîru, L. G. (2022). Students' satisfaction with the online teaching process. Academicus, 25, 184–193.

Babayiğit, S., & Shapiro, L. (2020). Component skills that underpin listening comprehension and reading comprehension in learners with English as a first and additional language. *Journal of Research in Reading*, *43*(1), 78–97.

Beccaria, L, Kek, M. & Huijser, H.(2019). Using "just in time" online feedback to improve first-year undergraduate nursing students' essay writing performance. *Journal of University Teaching & Learning Practice*, *16*(4), 1–18.

Bensalah, H., & Gueroudj, N. (2020). The effect of cultural schemata on EFL learners'

reading comprehension Ability. *Arab World English Journal*, *11*(2), 383–394.

Blin, F., & Appel, C. (2011). Computer-supported collaborative writing in practice: an activity theoretical study. *CALICO Journal*, 2, 473.

Boghossian, P. (2006). Behaviorism, constructivism, and socratic pedagogy. *Educational Philosophy & Theory*, *38*(6), 713–722.

Bos, A. H., & Tan, E. (2019). Effects of anonymity on online peer review in second-language writing. *Computers & Education, 142*, 103638.

Breen, H. (2015). Assessing online collaborative discourse. *Nursing Forum*, *50*, 218–227. Cahyana, U., Supatmi, S., Erdawati, & Rahmawati, Y. (2019). The Influence of web-Based learning and learning independence toward student's scientific literacy in chemistry course. *International Journal of Instruction*, *12*, 655–668.

Brown, H. (2007). *Principles of language learning and teaching*. White Plains, NY: Pearson Education.

Brown, J. D., & Bailey, K. M. (1984). A categorical instrument for scoring second language writing skills. Language Learning, 34, 21–42.

Callinan, J. C., Zee, E., & Wilson, G. (2018) Developing essay writing skills: an evaluation of the modeling behavior method and the influence of student self-efficacy, *Journal of Further and Higher Education*, 42(5), 608-622.

Castillo-Cuesta, L. (2020). Using digital games for enhancing EFL grammar and vocabulary in higher education. *International Journal of Emerging Technologies in Learning*, *15*(20), 116–129.

CÔTÉ, R. A. (2018). Teaching writing students how to become competent peer reviewers. *English Teaching Forum*, *56*(4), 16–23.

Cynthia, Lee, Kelvin, C.K., Wong , K., Cheung & Fion S.L. Lee (2009) Web-based essay critiquing system and EFL students' writing: A quantitative and qualitative investigation, *Computer Assisted Language Learning, 22*(1), 57-72.

Cohen, A. J., & Williams, A. L. (2019). Scalable, scaffolded writing assignments with online peer review in a large introductory economics course. *Journal of Economic Education*, *50*(4), 371–387.

Cohen, L., Manion, L. and Morrison, K. (2000) Research methods in education. 5th Edition,Routledge Falmer, London.

Cho, K., Schunn, C. D., & Wilson, R. (2006). Validity and reliability of scaffolded peer assessment of writing from instructor and student perspectives. Journal of Educational

Psychology, 98(4), 891–901.

Crossman, J. M., & Kite, S. L. (2012). Facilitating improved writing among students through directed peer review. *Active Learning in Higher Education*, *13*(3), 219-229.

Daweli, T. W. (2018). Engaging Saudi EFL students in online peer review in a Saudi university context. *Arab World English Journal*, *9*(4), 270–280.

Dimililer, Ç. Celen., & Kurt, M. (2019). The impact of collaborative writing and the stream of consciousness technique on writing. *Khazar Journal of Humanities & Social Sciences*, *22*(3), 71–99.

Elboshi, A. (2021). Web-enhanced peer feedback in ESL writing classrooms a literature review. *English Language Teaching*, *14*(4), 66-76.

Esmaeeli, H., Abasi, M., & Soori, A. (2014). Is peer review Training effective in Iranian EFL students' revision? (2014). Advances in Language and Literary Studies, 5(4).

Farahani, A. A. K., Nemati, M., & Nazari Montazer, M. (2019). Assessing peer review pattern and the effect of face-to-face and mobile-mediated modes on students' academic writing development. *Language Testing in Asia*, *9*(1).

Fathi, J., & Afzali, M. (2020). The Effect of Second Language Reading Strategy Instruction on Young Iranian EFL Learners' Reading Comprehension. *International Journal of Instruction*, *13*(1), 475–488.

Farangi, M. R., & Kheradmand Saadi, Z. (2017). Dynamic Assessment or Schema Theory: The Case of Listening Comprehension. *Cogent Education*, *4*(1).

Fowler, F. J. (2002). Survey Research Methods. Organizational Research Methods, 6(1), 135–138.

Garrison, D. R., T. Anderson, and W. Archer. 2010. "The first decade of the community of inquiry framework: A retrospective." The Internet and Higher Education 13 (1–2): 5–9.

Gao, J., Yang, L., Zhao, J., Wang, L., Zou, J., Wang, C., & Fan, X. (2020). Comparison of problem-based learning and traditional teaching methods in medical psychology Education in China: A systematic review and meta-analysis. *PLoS ONE*, *15*(12), 1–11.

Gonzalez R., Rodriguez O., Maria L., & Mosquera Q. (2020). The impact of feedback and explicit rhetorical instruction on EFL students' writing proficiency in higher education. *Atlantis (0210-6124)* 42 (1): 120–42.

Guardado, M., & Shi, L. (2007). ESL students' experiences of online peer feedback. *Computers and Composition*, *24*(4), 443-461.

Harmer, J. (2007). How to teach English. Harlow, England: Pearson Education Limited.

Huseynova, S. S. (2019). Assessing English Grammar Assessment and Feedback: a Case Study of King Khalid University (KKU) Students. *Arab World English Journal*, 44–55.

Hoogeveen Mariëtte, & van Gelderen Amos. (2013). What works in writing with peer response? A review of intervention studies with children and adolescents. *Educational Psychology Review*, *25*(4), 473–502.

Hoose, N. A. (n.d.). Educational Psychology. Retrieved from https://courses.lumenlearning.com/edpsy/chapter/social-cognitive-learning-theory/

Hou, Y.J. (2019). Thinking and educational technology in EFL classrooms: Effects on students' reading comprehension and engagement. *International Journal of Literacies*, *26*(2), 19–34.

Hsu, J. L., Chou, H.W., Hwang, W.Y., & Chou, S.B. (2008). A two-dimension process in explaining learners' collaborative behaviors in CSCL. *Educational Technology and Society*, *11*(4), 66-80.

Huang X. Improving communicative competence through synchronous communication in computer-supported collaborative learning environments: A systematic review. *Education Sciences*. 2018;8(1).

Isaacs, A. N., Walton, A. M., & Nisly, S. A. (2015). Interactive web-based learning modules prior to general medicine advanced pharmacy practice experiences. *American Journal of Pharmaceutical Education*, *79*(3), 1–6.

Jeong, H., Hmelo-Silver, C. E., & Jo, K. (2019). Ten years of computer supported collaborative learning: A meta-analysis of CSCL in STEM education during 2005–2014. *Educational Research Review*, 28, 100284.

Jurečková, J., & Picek, J. (2007). Shapiro–Wilk-type test of normality under nuisance regression and scale. Computational Statistics and Data Analysis, 51(10), 5184–5191.

Kelly, L. (2015). Effectiveness of guided peer review of student essays in a large undergraduate biology course. *International Journal of Teaching & Learning in Higher Education*, *27*(1), 56–68.

Kurihara, N. (2017). Do peer reviews help improve student writing abilities in an EFL high school classroom? *TESOL Journal*, 8(2), 450–470.

Kusumaningrum, S. R., Cahyono, B. Y., & Prayogo, J. A. (2019). The Effect of Different Types of Peer Feedback Provision on EFL Students' Writing Performance. International Journal of Instruction, 12(1), 213–224.

Li, Q. (2014). Schema theory and the teaching of college English news listening. *Theory and Practice in Language Studies*, *4*(7), 1469.

Li, J., & Li, M. (2018). Turnitin and peer review in ESL academic writing classrooms. *Language Learning & Technology*, *22*(1), 27-41.

Lingling Cai, & Chunrong Wu. (2020). A study on the cultivation of primary school students' cross-cultural awareness--based on the Schema theory. *Theory & Practice in Language Studies*, *10*(5), 604–611.

Lai, Y. (2010). Which do students prefer to evaluate their essays: Peers or computer program. *British Journal of Educational Technology*, *41*(3), 432–454.

Listyani. (2019). Gender-based responses to peer reviews in academic writing. *Theory & Practice in Language Studies*, 9(1), 89–97.

Loretto, A., DeMartino, S., & Godley, A. (2016). Secondary students' perceptions of peer review of writing. *Research in the Teaching of English*, *51*(2), 134–161.

Manglesdorf, K. (1992). Peer reviews in the ESL composition classroom: What do the students think? ELT Journal, 46(3), 274-84.

Mendonca, C. O. and Johnson, K. E. (1994). Peerreview negotiations: Revision activities in ESL writing instruction. TESOL Quarterly, 28(4), 745-69.

Michael T. Buchanan & Julian Stern (2012) Pre-service teachers' perceptions of the benefits of peer review, Journal of Education for Teaching, 38:1, 37-49.

Mucedola, M. S. (2016). Canvas learning management system for online health education university courses to improve performance and enhance the learning experience. Virginia Journal, 37(2), 2–6.

Mahmoudi, F. & Bugra, C. (2020). The effects of using rubrics and face to face feedback in teaching writing skills in higher education. (2020). International Online Journal of Education and Teaching, 7(1), 150–158.

Mukundan J & Nimehchisalem V. (2011) Effect of Peer Review and Tutor Conferencing on English as a Second Language Learners' Writing Performance. (2011). Pertanika Journal of Social Sciences & Humanities, 19(1), 25–38.

Prati, G. (2012). A Social cognitive learning theory of homophobic aggression among adolescents. *School Psychology Review*, *41*(4), 413–428.

Rouah, I., Bourekkadi, S., Khoulji, S., Slimani, K., & Kerkeb, M. L. (2021). Mobile Learning Driving the Development of Higher Education Through a New Vision of Teaching Methods Thanks to Educational Technology. *Ilkogretim Online*, *20*(5), 976–987.

Rollinson, P. (2005). Using peer feedback in the ESL writing class. *ELT journal*, *59*(1), 23-30.

Saville-Troike, M. (2006). Introducing second language acquisition. Cambridge: Cambridge University Press.

Souheyla, B. (2021). Zoom Sessions in Distant Learning: Algerian EFL Students' Perceptions and Attitudes. Arab World English Journal, 264–280.

Sethares, K. A., & Morris, N. S. (2016). Learning about and benefiting from peer review: A course assignment for doctoral students at two different universities. Journal of Nursing Education, 55(6), 342–344.

Schafer, E. C., Aoyama, K., Ho, T., Castillo, P., Conlin, J., Jones, J., & Thompson, S. (2018). Speech Recognition in Noise in Adults and Children Who Speak English or Chinese as Their First Language. *Journal of the American Academy of Audiology*, *29*(10), 885–897.

Shah, K., & Ahmad, N. (2020). A Comparison of the Efficacy of Concept Formation Teaching Methods and Traditional Teaching Methods in Science Subject at Secondary Level. *Language in India*, *20*(9), 101–117.

Shimaya, J., Yoshikawa, Y., Ogawa, K., Ishiguro, H. (2020). Robotic question support system to reduce hesitation for face-to-face questions in lectures, *Journal of Computer Assisted Learning*, 37(3), 621-631.

Singla, N., Saini, P., & Kaur, J. (2016). Evaluating the flipped Vs traditional teaching method on student nurse's performance. *International Journal of Community Health & Medical Research*, *2*(4), 30–37.

Singh, S., Hamilton, C. E., & Soble, J. R. (2021). Integrating culturally informed qualitative data in neuropsychological evaluations of non-native English speakers. *Professional Psychology: Research and Practice*, *52*(3), 234–249.

Sun, F. (2014). The application of schema theory in teaching college Essay writing. *Theory and Practice in Language Studies*, *4*(7), 1476.

Sengupta, S. (1998). Peer-evaluation: I am not the teacher. ELT Journal, 52(1), 19-26.

Schunn, C., Godley, A., & DeMartino, S. (2016). The reliability and validity of peer review of writing in high school AP English classes. *Journal of Adolescent & Adult Literacy*, *60*(1), 13–23.

Shih-hsien Yang. (2011). Exploring the effectiveness of using peer evaluation and teacher feedback in college students' writing. *Asia-Pacific Education Researcher (De La Salle University Manila)*, *20*(1), 144–150.

Tai, H., Lin, W., Yang, S (2015). Exploring the effects of peer review and teachers' corrective feedback on EFL students' online writing performance. *Journal of Educational Computing*, *53*(2), 284-309.

Tang, G. M. (1999). Peer response in ESL writing. *TESL Canada Journal*, 20-38.

Tariq, Ali, S., & Khan, Q. (2020). Developing Learners Writing Skills Through Process Writing Approach. *Hamdard Islamicus*, *43*(1), 661–667.

Karabatak, S., & Turhan, M.(2017). Effect of web-based problem based learning on school administrators' self-efficacy beliefs and attitudes towards the principalship profession. *Education & Science/Egitim Ve Bilim*, *42*(191), 1–29.

Kayacan, A., & Razı, S. (2017). Digital self-review and anonymous peer feedback in Turkish high school EFL writing. *Journal of Language & Linguistics Studies*, *13*(2), 561–577.

Kim, S. H. (2015). Preparing English learners for effective peer review in the writers' workshop. *Reading Teacher*, *68*(8), 599–603.

Kim, S. (2019). Japanese student writers' perspectives on anonymous peer review. *ELT Journal*, *73*(3), 296–305.

Kurihara, N. (2017). Do peer reviews help improve student writing abilities in an EFL high school classroom? *TESOL Journal*, *8*(2), 450–470.

Jiang, L., & Lu, J. (2019). Blended learning using video blogs in teaching English as a Second Language-- A case study of international trade practice course. *Journal of Language Teaching & Research*, *10*(5), 1117–1124.

Li, M., & Jones, B. D. (2019). Transforming traditional teaching: A professional development program for the college EFL teachers. *Theory and Practice in Language Studies*, *12*, 1494.

Lin, S. M. (2015). A study of ELL students' writing difficulties: a call for culturally, linguistically, and psychologically responsive teaching. *College Student Journal*, *49*(2), 237.

Salehi, M & Sayyar, M. Z (2017) An investigation of the reliability and validity of peer, self-, and teacher assessment, *Southern African Linguistics and Applied Language Studies*, 35:1, 1-15.

Malone, Y. (2002). Social cognitive theory and choice Theory: A Compatibility Analysis.

International Journal of Reality Therapy, *22*(1), 10.

Meletiadou, E. (2021). Exploring the Impact of Peer Assessment on EFL Students' Writing Performance. IAFOR Journal of Education, 9(3), 77–95.

Manurung, K., & Mashuri. (2017). Implementing interest based instructional materials to minimize EFL learners' speaking skills de-motivating factors. *Theory & Practice in Language Studies*, *7*(5), 356–365.

Miranda, M. V. (2009). Creating the successful community college student: Using behaviorism to foster constructivism. (Undetermined). *Community College Enterprise*, *15*(1), 21–38.

Mishra, S. (2002). A Design framework for online learning environments. *British Journal of Educational Technology*, *33*, 493–496.

Money, W. H. (1995). Applying group support systems to classroom settings: A social cognitive learning theory explanation. *Journal of Management Information Systems*, *12*(3), 65–80.

Nawas, A. (2020). Grading anxiety with self and peer-assessment: A mixed-method study in an Indonesian EFL context. *Issues in Educational Research*, *30*(1), 224–244.

Neumann, K. L., & Kopcha, T. J. (2018). The use of schema theory in learning, design, and technology. *TechTrends: Linking Research & Practice to Improve Learning*, *62*(5), 429–431.

O'Neill, M. E., & Mathews, K. L. (2002). Levene Tests of Homogeneity of Variance for General
    Block and Treatment Designs. Biometrics, 58(1), 216–224.

Pae, H. K. (2014). Forced choice or free choice: The role of question formats in predicting speaking and writing skills of nonnative speakers of English. *Educational Assessment*, *19*(2), 97-115.

Picciano, A. G. (2017). Theories and frameworks for online education: Seeking an integrated model. *Online Learning*, *21*, 166–190.

Robinson, H. A., Kilgore, W., & Warren, S. J. (2017). Care, communication, learner support: Designing meaningful online collaborative learning. *Online Learning*, *21*(4), 29–51.

Roblyer, M. D., Porter, M., Bielefeldt, T., & Donaldson, M. B. (2009). "Teaching online made me a better teacher": Studying the impact of virtual course experiences on teachers' face-to-face practice. *Journal of Computing in Teacher Education*, *25*(4), 121–126.

Rodas, E. L., & Colombo, L. (2021). Self-managed peer writing groups for the development of EFL literacy practices. *TESL-EJ*, *24*(4), 1–22.

Rosé, C. P., & Ferschke, O. (2016). Technology support for discussion based learning: From computer supported collaborative learning to the future of massive open online courses. *International Journal of Artificial Intelligence in Education*, 26(2), 660–678.

Setyowati, L., & Sukmawan, S. (2016). EFL Indonesian students' attitude toward writing in English. *Arab World English Journal*, *7*, 365-378.

Stahl, G., Koschmann, T., & Suthers, D. (2006). Computer-supported collaborative learning: An historical perspective. *Cambridge Handbook of the Learning Sciences*, 409-426.

Sidman, R, Karathano, K. (2015). Academic writing for graduate level English as a Second Language student. CATESOL Journal, 27(1), 27-52.

Simpson, Lisa A. (2013). Effect of a classwide peer-mediated intervention on the social interactions of students with low-functioning autism and the perceptions of typical peers. *Doctoral Dissertations*. *63*.

Singh, M. K. M. (2019). Academic reading and writing challenges among international EFL master's students in a Malaysian University: The voice of lecturers. *Journal of International Students*, *4*(9), 972.

Vorobel, O., & Vásquez, C. (2014). A teacher's perspectives on peer review in ESL classes. *Writing & Pedagogy*, *6*(2), 307–335.

Wei W., (2016). Peer feedback in Chinese college English writing class: Using action research to promote students' English writing. *Journal of Language Teaching & Research*, 7(5), 958–966.

Wei, Mengjie. (2017). Strategies for First-Year University ESL Students to Improve Essay Writing Skills. *Master's Projects and Capstones*. 536.

Winfrey, N. (2017). Community currencies: An ideology of abundance. *New Directions for Adult & Continuing Education*, *2017*(153), 77–89.

Wuryaningsih, D. H., Darwin, D., & AdI, C. P. (2019). Effects of web-based learning and F2F learning on teachers achievement in teacher training program in Indonesia. *International Journal of Emerging Technologies in Learning (IJET)*, *14*, 123.

Wilcox, R. (2022). One-Way and Two-Way ANOVA: Inferences About a Robust, Heteroscedastic Measure of Effect Size. Methodology, 18(1), 58–73.

Xie, K., Hensley, L. C., Law, V., & Sun, Z. (2019). Self-regulation as a function of perceived

leadership and cohesion in small group online collaborative learning. *British Journal of Educational Technology*, *50*(1), 456–468.

Yukinobu Satake. (2021). The Impact of Japanese university students' EFL writing class community on their peer review activities and learning of EFL writing. English Usage and Style, 38, 19.

Zafar, H., & Akhtar, S. H. (2021). Analyzing the effectiveness of activity-based teaching and traditional teaching method through students' achievement in sub domain knowledge at secondary level. *Language in India*, *21*(4), 149–162.

Zhao, H. (2018). Exploring tertiary English as a foreign language writing tutors' perceptions of the appropriateness of peer assessment for writing. *Assessment & Evaluation in Higher Education*, *43*(7), 1133–1145.

Zhang, S. (1995). Reexamining the affective advantage of peer feedback in the ESL writing class. *Journal of second language writing*, *4*(3), 209-222.

APPENDIXES

APPENDIX A
Self-checklist

ESL WRITING SELF-CHECKLIST

Part A: Paragraph Checklist

1. Do you have a topic sentence?

    o YES

    o NO

1. Do you have supporting sentences?

    o YES

    o NO

1. Do you have a clincher/concluding sentence?

    o YES

    o NO

1. Does your paragraph have unity?

    o YES

    o NO

1. Does your paragraph have coherence?

    o YES

    o NO

1. Did you indent the first line?

    o YES

    o NO

1. Does your paragraph have a title?

    o YES

    o NO

1. Did you write on every other line?

   o YES

   o NO

1. Did you proofread your paragraph?

   o YES

   o NO

1. Did you write neatly?

   o YES

   o NO

Part B: Essay Checklist

1. Does your essay have an introduction?

   o YES

   o NO

1. Does your introduction have a capture statement/Statements?

   o YES

   o NO

1. Does your introduction have a thesis?

   o YES

   o NO

1. Does your thesis include three subdivisions?

   o YES

   o NO

1. Are there three paragraphs in the body of your essay?

   o YES

   o NO

1. Does each paragraph start with a topic sentence related to one of the subdivisions of your thesis?

   o YES

   o NO

1. Does your essay have a conclusion?

   o YES

   o NO

1. Does your conclusion include the paraphrase of the thesis?

   o YES

   o NO

1. Does your conclusion end with a general clincher?

   o YES

   o NO

Appendix B

Peer Review Editing Worksheet

Peer review Editing Worksheet

Author's name: _____   **DATE:** _____

Title of the Essay: _____

Response Group Members' names: _____

Directions: **Answer the following questions about your friend's paper. Use complete**

        Sentences.

1. What part or parts do you like the most? What part or parts do you think can be improved?

2. What part would you like to know more about?

3. Is the essay organized, having an introduction, body, and conclusion paragraphs?

4. Does the essay use words correctly?

5. Are the paragraphs that seem coherent? If so, choose one and explain why.

6. Note problems with sentence vocabulary, grammar, spelling, and structure.

7. Underline the best phrases, paragraphs, or sentences in the paper. Explain why.

Symbols	Meaning	Examples
sp	Spelling error	Incorrect: Go <u>too</u> the post office. **SP**

		Correct: Go to the post office.
cap	Capitalization error	Incorrect: I live on <u>m</u>ain <u>s</u>treet. **Cap** **Correct: I live on Main Street.**
p	Punctuation error	Incorrect: I ate an egg<u>,</u> and toast. P **Correct: I ate an egg and toast.**
wd	Wrong word	Incorrect: I <u>have</u> 21 years old. **Wd** **Correct: I am 21 years old.**
wf	Word form error	Incorrect: He runs <u>slow</u>. **WF** **Correct: He runs slowly.**
⌣	Connect the letters	Incorrect: Some students do n't like taking tests. **Correct: Some students do not like taking tests.**

Appendix C

Grading Rubrics

Grading Rubrics

	4	3	2	1
Format, Content & Structure				
Grammar				
Vocabulary				
Spelling				

Total Score:

ESL Writing Grading Rubric				
	Poor - 1	Fair -2	Good - 3	Excellent - 4
Format, Content & Structure	1. None of the writing is about the topic. 2. The essay does not explicitly answer the question. 3. The writing is disorganized, having only a body paragraph. 4. No logical progression of ideas, no use of	1. Some of the writing is about the topic. 2. The essay answers nearly all parts of the question. 3. The writing is somewhat organized, having an introduction and body paragraphs, but missing a conclusion paragraph. 4. Some logical progression of ideas in some parts of the essay, but not	1. Most of the writing is about the topic. 2. The essay answers all parts of the question with interesting information. 3. The writing is organized, having an introduction, body and conclusion paragraphs.	N/A

	transitions between paragraphs. 5. Writing needs to be more interesting and mature.	others; a few transitions, but not throughout the whole essay. 5. Writing is somewhat interesting and mature.	4. Clear, logical progression of ideas; uses appropriate transitions. 5. Writing captures audiences' attention	
Grammar	More than 10 errors in sentence structure, verbs, parts of speech, pronouns, prepositions…	8 to 10 errors in sentence structure, verbs, parts of speech, pronouns, prepositions...	4 to 7 errors in sentence structure, verbs, parts of speech, pronouns, prepositions...	1 to 3 errors in sentence structure, verbs, parts of speech, pronouns,
Vocabulary	1. Poor word choice; most words are used incorrectly; sentences are simple and do not send a basic message. 2. No detailed expressions. 3. Use of the L1.	1.Simple word choice; some words are used incorrectly; sentences are simple and send a basic message. 2. Almost no detailed expressions.	1. Good word choice; some effort is made to use complex sentences and new vocabulary; 2. There are some mistakes but the argument of the essay is clear.	1.Many new words used correctly; strong efforts to expand the vocabulary; words and expressions are eloquently presented.
Spelling	More than 7 spelling errors.	5 to 7 spelling errors.	3 to 4 spelling errors.	0 to 2 spelling errors.

Table 1. ESL Essay Grading Rubric from Mahmoudi & Bugra,2020.

Appendix D

Letter of Consent Form (Instructors)

Letter of Consent from the community college ESL instructor

Dear Professor Brian Ng,

I am currently a doctoral candidate in the School of Education at the University of San Francisco. As part of my degree requirements, I will need to conduct a study to investigate the effectiveness of using peer review editing worksheets in college English as a Second Language Writing class to improve ESL students' writing scores. I am formally requesting to conduct research at your intermediate ESOL Reading and Writing class at College of Alameda in the Fall of 2021. This study will take four weeks in total. Students will need to do a baseline writing assignment and a post writing assignment with the self-checklist and the peer review editing worksheet. All the outlines and instructions are parts of the normal coursework. Students writing assignments, writing scores, and survey results will be only used for this research study and stored securely. Once the study has been completed, all these data will be destroyed. Students' information will be anonymous and will not be shared with other people. I will obtain Institutional Research Board Consent from University of San Francisco for this project. I hope you will provide your consent for me to conduct this research project at your classes.

Sincerely,
Dream Wei
Doctoral Candidate School of Education University of San Francisco
mwei6@dons.usfca.edu
10/25/2021

Consent for Research

My signature below indicates that I acknowledge and authorize Mengjie Wei to conduct a research study in my intermediate Reading and Writing ESOL class in the 2021 Fall semester. I am aware that the research involves administering a baseline writing, post writing, and an online survey to students. I understand these assignments are part of regular course work that students will have the option to opt for having their data included in the study via a consent letter.

Name: Brian Ng

Signature: *Brian Ng*

Date: 10/27/2021

Letter of Consent from the community college ESL instructor

Dear Professor Anne Agard,

I am currently a doctoral candidate in the School of Education at the University of San Francisco. As part of my degree requirements, I will need to conduct a study to investigate the effectiveness of using peer review editing worksheets in college English as a Second Language Writing class to improve ESL students' writing scores.

I am formally requesting to conduct research at your intermediate ESOL Reading and Writing Class at Laney College in the Fall of 2021. This study will take four weeks in total. Students will need to do a baseline writing assignment and a post writing assignment with the self-checklist. All the outlines and instructions are parts of the normal coursework. Students writing assignments, writing scores, and survey results will be only used for this research study and stored securely. Once the study has been completed, all these data will be destroyed. Students' information will be anonymous and will not be shared with other people. I will obtain Institutional Research Board Consent from University of San Francisco for this project. I hope you will provide your consent for me to conduct this research project at your classes.

Sincerely,
Dream Wei
Doctoral Candidate School of Education University of San Francisco
mwei6@dons.usfca.edu
10/25/2021

Consent for Research

My signature below indicates that I acknowledge and authorize Mengjie Wei to conduct a research study in my intermediate Reading and Writing ESOL class in the 2021 Fall semester. I am aware that the research involves administering a baseline writing, post writing, and an online survey to students. I understand these assignments are part of regular course work that students will have the option to opt for having their data included in the study via a consent letter.

Name: Anne Agard

Signature: *Anne Agard*

Date: 11/09/2021

Appendix E

Consent for Research

Co-Chair's Letter of Consent

Dear Professor Didem Ekici,

I am formally requesting, as a doctoral candidate at the University of San Francisco, the consent to conduct research in two intermediate ESOL writing classes at College of Alameda in the 2021 Fall semester. I have obtained permission from Professor Christa Ferreco Castaneda and Professor Brian Ng to conduct my research in their intermediate Reading and Writing classes. I will obtain Institutional Research Board Consent from University of San Francisco for this research. I hope you will give your consent to conduct this research. Thank you very much for your time and consideration.

Sincerely,
Dream Wei
Doctoral Candidate School of Education University of San Francisco
mwei6@dons.usfca.edu
10/25/2021

Consent for Research

My signature below indicates that I acknowledge and authorize Mengjie Wei to conduct a research study in two intermediate Reading and Writing ESOL classes in the 2021 Fall semester. I am aware that the research involves administering a baseline writing, post writing, and an online survey to students. I understand these assignments are part of regular course work that students will have the option to opt for having their data included in the study via a consent letter.

Name: Didem Ekici

Signature:

Date: 10/25/2021

Appendix F

Consent Form (Students)

CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Below is a description of the research procedures and an explanation of your rights as a research participant. You should read this information carefully. If you agree to participate, you will sign in the space provided to indicate that you have read and understand the information on this consent form. You are entitled to and will receive a copy of this form.

You have been asked to participate in a research study conducted by Mengjie Wei, a graduate student in the Department of Learning and Instruction at University of San Francisco. This faculty supervisor for this study is Sedique Popal a professor in the Department of Learning and Instruction at University of San Francisco.

WHAT THE STUDY IS ABOUT:

The purpose of this study is to investigate the effectiveness of using peer-review in college English as Second Language writing classes to improve ESL students' writing scores. This study investigates whether there was a statistically significant difference in college ESL students' writing scores between those who use both the self-checklist and peer review worksheet and those who only use the self-checklist for writing correctness in a writing assignment. More specifically, this study aims to investigate the level of influence of peer-review on different criteria of English writing scores, i.e., format/content/structure, grammar, vocabulary, and spelling. This study also investigates students' attitudes and opinions on using peer-review in the writing class.

WHAT WE WILL ASK YOU TO DO:

During this study, the following will happen. Two groups of participants (*n*=50) from the College of Alameda ESOL program will be used for this study. These students are the intermediate ESOL students from the Reading and Writing classes at College at Alameda. Students will be randomly assigned to the treatment and the comparison group. There are 25 students in the comparison group and 25 students in the treatment group. Students must complete base-level courses or a placement test through multiple assessment processes to register for the intermediate class. Students can improve their critical-thinking skills and academic research

skills in this course. Students will learn to analyze and write academic papers critically for college-level texts.

Each group of students will have different ESL instructors (Instructor A and Instructor B) from this college located in northern California. These two instructors will administer the experiments during all experiment days. Instructor A will be assisting the treatment group, and instructor B will be helping the comparison group. Due to COVID-19, all in-classroom lessons at this community college are online via Zoom. All instructors use Canvas as their Learning Management System. The independent variables in this research design are the peer review worksheets and the self-checklists. The dependent variables in this study are students' writing scores in the baseline writing assignment and the post writing assignment.

Table 1 is the Research Design:

Table 1

Week	Treatment Group	Comparison Group
Week 1	Students completed the baseline writing – writing assignment 1.	Students completed the baseline writing – writing assignment 1.
Week 2	Students completed the post writing – writing assignment 2 and used the self-checklist to do a self-review. Students did a peer-review on the post-writing. Grade 3 for the peer-review writing assignment was collected.	Students completed the post writing – writing assignment 2 and used the self-checklist to do a self-review. Grade 2 for the self-review writing assignment was collected.
Week 3	Students signed the consent form and completed an online survey.	
Week 4	Data collection and analysis	Data collection and analysis

Note. The self-review checklist was included at the end of every chapter of the students' textbook.

DURATION AND LOCATION OF THE STUDY:

Your participation in this study will involve four weeks. This study will take place at the College of Alameda and Laney College. In the first week, each group of students will need to complete a

baseline writing based on the instruction provided by the instructors. All students will receive the same writing assignment. In Week 2, students' grades (grade 1) on the baseline writing will be posted on Canvas. The treatment will be asked to do a post writing in the classroom and then use the self-check list to do a self-review. After that, students will receive a new grade (grade 2) based on their self-review results. Students will need to do another round of review with the peer-review worksheets in the treatment group. After the peer-review activity, students will receive another new grade (grade 3). Unlike the treatment group, the comparison group will only do a self-review on the post-writing assessment. Students from the comparison group will only review a new grade (grade 2). In week 3, all participants will receive the online consent form and an online survey from the research. In week 4, the research will collect all data and do the data analysis.

POTENTIAL RISKS AND DISCOMFORTS:
We do not anticipate any risks or discomforts to you from participating in this research. If you wish, you may choose to withdraw your consent and discontinue your participation at any time during the study without penalty.

BENEFITS:

Your participation in the study does not have any immediate benefits to you but may benefit future students should the experimental instruction show positive results.

PRIVACY/CONFIDENTIALITY:

All data collected in this study will be kept confidential. The researcher will not be providing any information that can uniquely identify students' name. Each student will be given an ID number throughout the experiment. Students' writing assignments, writing scores, and the survey results will only be stored at a private iCloud account. Only the researcher will have access to this account. All data will only be used for this research purpose. All data will be automatically destroyed after two years.

COMPENSATION/PAYMENT FOR PARTICIPATION:

There is no payment or other form of compensation for your participation in this study.

VOLUNTARY NATURE OF THE STUDY:

Your participation is voluntary, and you may refuse to participate without penalty or loss of benefits. Furthermore, you may skip any questions or tasks that make you uncomfortable and may discontinue your participation at any time without penalty or loss of benefits. In addition, the researcher has the right to withdraw you from participation in the study at any time.

OFFER TO ANSWER QUESTIONS:

Please ask any questions you have now. If you have questions later, you should contact the principal investigator: Mengjie Wei at 5109458853 or mwei6@dons.usfca.edu. If you have questions or concerns about your rights as a participant in this study, you may contact the University of San Francisco Institutional Review Board at IRBPHS@usfca.edu.

I HAVE READ THE ABOVE INFORMATION. ANY QUESTIONS I HAVE ASKED HAVE BEEN ANSWERED. I AGREE TO PARTICIPATE IN THIS RESEARCH PROJECT AND I WILL RECEIVE A COPY OF THIS CONSENT FORM.

_____

PARTICIPANT'S SIGNATURE   *DATE*

Appendix G

Writing Prompt

Subject:

ESOL Intermediate Reading & Writing Baseline Writing
Topic:

Choose one of your favorite cities and explain why you like it. You may give 1-2 examples.

150 - 250 words.
Format:
Microsoft Word

You have one week to complete this writing assignment. Please save your document as a PDF document and upload it to the Canvas course site.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Subject:

ESOL Intermediate Reading & Writing Post Writing
Topic:

Explain one thing you are good at. What do you know about it and how to do it? Your writing should include a topic sentence, 2-3 body paragraphs, and a concluding sentence.

150 - 250 words.
Format:
Microsoft Word

You have one week to complete this writing assignment. Please save your document as a PDF document and upload it to the Canvas course site.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____