Going Digital With Peer Review: Using Action Research to Explore the Effect of Digital Peer Review on Student Writing Composition and Student Attitude in a Rural Primary School

Kemberly Jean Owens

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GOING DIGITAL WITH PEER REVIEW: USING ACTION RESEARCH TO EXPLORE THE
EFFECT OF DIGITAL PEER REVIEW ON STUDENT WRITING COMPOSITION AND
STUDENT ATTITUDE IN A RURAL PRIMARY SCHOOL

by

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For the Degree of Doctor of Education in
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DEDICATION

This body of work is dedicated to all my friends and family who encouraged me each day to continue this journey. A lot of days you were the reason I did not throw in the towel and you kept me propped up on days that were not my best. To my students along the way and to those in this study - thank you for being a part of the journey. You are the reason why this was so important to me and I did this for you. You make me a better teacher.

Most of all, this is dedicated to my husband James and son Jay who have been on this voyage with me from day one. Both great encouragers, they gave me peace and quiet when I needed it, did the chores when I could not, and gave me encouragement when I could not find it. I would not have made it without you, and I love you both so much. We did it!
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I want to thank my colleagues Paula Taylor and Roxanne Spray for reading my chapters and offering your critiques. Paula, I will never be able to repay you for all you have done for me.

Last, but certainly not least, thank you to my dissertation chair Dr. Ismahan Arslan-Ari who was always patient, always kind, and always helpful. I would never have made it without you. You are amazing and a wonderful role model for young women.
ABSTRACT

The purpose of this action research was to explore the use of peer review on student writing composition and student attitudes toward writing for third grade students at Little Rural Primary School. This study focused on two research questions. The first research question explored how and to what extent the use of digital peer review effects student writing composition. The second research question explored how and to what extent digital peer review effects student attitudes toward writing. The study took place in the third and fourth grade gifted and talented classroom at Little Rural Primary School in South Carolina and had 17 participants. To address the two research questions, a convergent parallel mixed methods design was used. Quantitative data was collected in the form of a preassessment and two postassessments, one before and one after the intervention, to measure impact on writing composition, as well as a participant survey to measure student attitude toward writing. Descriptive statistics was used to describe quantitative findings. Findings showed that digital peer review had no impact on student writing compositions. An increase in postassessment survey scores, in comparison with presurvey scores, showed improvement in student attitude toward writing. Participant interview findings showed that factors before and after the intervention influenced their attitudes along with using the digital peer review resources and online features of Microsoft Word contributed to a positive experience in this study. Qualitative data was collected in the form of participant interviews and student Microsoft Word comments. Inductive analysis was conducted to find themes from the interviews and Microsoft Word comments.
comments. Participant interviews showed that their personal experiences with digital peer review, such as building trust with their partner and using digital peer review, contributed to their increased writing skills. Microsoft Word comments showed that most participants gave feedback in grammar and spelling, as well as focused on the organization of their peers' composition, but showed little feedback in the analysis of text. The study discussed implications as well as limitations of the study and offered recommendations for future researchers and instructors.
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CHAPTER 1

INTRODUCTION

National Context

In 2017, the National Assessment of Educational Progress (NAEP) released their most recent writing assessment scores of fourth, eighth, and twelfth grade United States students in writing. The results showed that 2% of fourth grade scores were considered advanced according to NAEP standards, 27% of fourth grader scored proficient, and a staggering 85% of fourth graders in public schools scored basic (National Center for Education Statistics [NCES], 2017). The NAEP was also conducted in 2011 and 2007 but did not include fourth grade students but did test eighth and twelfth grade students across the United States (U.S.). Table 1.1 compares the data for years 2007, 2011, and 2017 for eighth and twelfth grade students scoring at or above according to NAEP standards (NCES, 2012; NCES, 2017).

Table 1.1 Comparison of NAEP "At or Above" Percentage Scores in Writing

<table>
<thead>
<tr>
<th></th>
<th>8th grade</th>
<th>12th grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>33%</td>
<td>24%</td>
</tr>
<tr>
<td>2011</td>
<td>27%</td>
<td>27%</td>
</tr>
<tr>
<td>2017</td>
<td>26%</td>
<td>25%</td>
</tr>
</tbody>
</table>

What do these scores tell us about the state of writing in the U.S? The data indicates that from 2007 to 2017, there was little improvement in writing performance.
Furthermore, the data indicates that since the percentages for performance at or above are very low, a higher percentage of students are scoring in the basic and below basic categories for writing. In 2011, the NAEP completed a pilot program with fourth grade students to test computer-based writing assessment. The findings showed that over two-thirds of participants scored in the lower half of the scoring scale (White, 2015). These test scores are an indication that when it comes to writing in the classroom, there is a gap that needs to be discussed and examined.

A survey was dispersed to random fourth through sixth grade teachers in the United States to find out the writing practices of teachers. Out of 300 teachers, 185 completed the survey. The researchers found that teachers had their students spend an average of two hours a week on writing (Gilbert, 2010). Over the course of a week, this amounts to 24 minutes a day spent on writing, not nearly enough time to spend developing quality writing. The study also asked teachers how they adjust their lessons to help weaker writers. Survey results indicated that teachers mostly provided encouragement daily to these writers. Teachers indicated that they give additional time and implemented strategies to help weaker writers (Gilbert, 2010). Although these are good strategies, there continues to be a need to find new, innovative ways to reach young writers.

Another survey research study, completed by district literacy coordinators/directors, was conducted in 13 school districts in the United States. The survey had administrators describe the state of writing in their district, with a focus on middle school writing implementation. Of the district administrators, 72.7% reported that middle school students “are not writing more proficiently than prior generations” (Lacina,
Survey responses indicate reasons for this lapse in proficiency could be lack of time spent on writing in the classroom and suggest teachers focus more on form rather than content (Lacina, 2012). The writers’ voice can be lost in writing when form triumphs over creativity (Lacina, 2012). Flower and Hayes (1981) as well as Deane, Odendahl, Quinlan, Fowles, Welsh, and Bivens-Tatum (2014) reflect this position, stating that older, traditional ways only stress the finished product, and do not emphasize, or examine, the process the writer takes when writing.

This survey research also placed an emphasis on how writing was being conducted using 21st century skills. As for technology, 50% of the responding administrators indicated that the single most important action being taken by their school district is the introduction of technology. In hopes to increase technology in writing, the researchers suggested schools consider implementing peer response groups such as wikis or blogs and promote collaborative writing through real-time text tools (Lacina, 2012).

Writing is one of the fundamental skills that every student needs to be a successful adult. As students transition from grade to grade, then school to college, and finally college to the workplace, one of the skills they will bring with them is their writing skills. As we see an ever-changing world of not only technology, but job skills, it is our jobs as teachers to evolve our classrooms. We can start by introducing more opportunities for digital writing in our classrooms, as well as innovative ways, such as digital peer review, to work together in an environment that will mimic their future workplace.
Local Context

Little River Rural Primary School serves students in grades K3 through fourth grade. The school where this study took place was a small rural school located in the southeastern United States. The school served a little more than 400 students in grades 3-year old Kindergarten to fourth grade, including several special needs classrooms. The students in this school come from many different backgrounds and cultures. Ethnicities for our school range from 73% White, 21% Black, 5% Hispanic, 1% Asian or Pacific Islander, and less than 1% American Indian/Alaska Native. 83% of students at this site come from low-income families. This school is considered a Title I school for the number of students that come from low-income homes. The faculty was made up of 20 classroom teachers, about a third having at least ten years’ experience in the district. Teachers are open and friendly with each other. The school leadership has had a few changes over the last 5 years, with three different principals having served as leaders for the school. The gifted and talented students, the students that participated in this study, are the youngest students in the district to complete state standardized assessment and be critiqued on their performance. Their state assessments will follow them from grade to grade, hopefully marking periods of improvement in their academic career. Our students come from mostly low-income families who work exceptionally hard.

Since the state requires students to conduct text dependent analysis every year on the state assessment, most of the aim for instructors in the school is to get students ready for this type of writing. Although students have been instructed in writing composition for many years before they reach third and fourth grade, most still lack fundamentals in writing. A lot of students do not have proper capitalization, punctuation, grammar, or
organization to their work. A lot of students have handwriting issues as well. Writing can be a frustrating time for them.

Writing has long been an issue in this school district. Part of the reason for the writing issues is the fact that the district has never implemented a formal writing program into the school district in my twenty years of teaching there. In the past, each grade level created their own writing curriculum. For the last two years, the school has used Lucy Calkins writing curriculum; however, not every grade level implements with fidelity. Most grade levels use the program as a resource instead of a primary curriculum for writing. Furthermore, middle school teachers in our district do not use this program, so once students leave this school, they will be taught writing in a different manner. For third and fourth grade, the focus is more on text dependent analysis because that is what the state requires of our students. Until recently, textbooks and curriculum had only been adopted by the district for the subjects of math, reading, science, and social studies, and not for writing. The school did purchase resources for teachers to implement the Lucy Calkins writing program in 2018, but many of the teachers do not see the value in using this program.

In 2019, the district had only two grade levels that had less than 40% of students to score in the category of low on the writing SC Ready assessment, the South Carolina state assessment (SCDE, 2019). This means that four other tested grades had 40% or higher (no one grade over 47%) of their students score in the low category on the assessment (SCDE 2016; SCDE, 2017, SCDE 2018; SCDE, 2019). When tracking the eighth-grade students, their scores have oscillated over the years. Table 1.2 shows the percentage of students that have scored in the low category on the SC Ready which has
fluctuated from 40.7% in 2016 to 50% in 2018 (SCDE, 2016; SCDE, 2018). Thankfully, the percentage of students who scored within the low category on the SC Ready was at a record low of 38.2% in 2019, which is promising for the future of these students (SCDE, 2019). Tracking the eighth-grade students gives a better representation of how students are performing in this area over the course of their testing career. The very fact that the data shows that writing is not improving indicates a need for discussion on what can be done to help students and teachers.

Table 1.2 Percentage of Low Performance by Year and Grade.

<table>
<thead>
<tr>
<th>Grade</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd grade</td>
<td>31.6</td>
<td>45.7</td>
<td>45.2</td>
<td>42</td>
</tr>
<tr>
<td>4th grade</td>
<td>51.7</td>
<td>50</td>
<td>62.5</td>
<td>46.7</td>
</tr>
<tr>
<td>5th grade</td>
<td>47.7</td>
<td>60.3</td>
<td>47.6</td>
<td>39.2</td>
</tr>
<tr>
<td>6th grade</td>
<td>50.7</td>
<td>58.8</td>
<td>58.2</td>
<td>45.1</td>
</tr>
<tr>
<td>7th grade</td>
<td>50</td>
<td>60</td>
<td>48.6</td>
<td>46.4</td>
</tr>
<tr>
<td>8th grade</td>
<td>40.7</td>
<td>45.6</td>
<td>50</td>
<td>38.2</td>
</tr>
</tbody>
</table>

Writing is often a personal experience and teachers sometimes become very protective of the way they teach. This may be why some teachers are using the Lucy Calkins writing curriculum and some are not. Due to the pressure of state standardized testing, writing has become more of a robotic process where teachers are teaching students a specific way to write, or follow a template, rather than having them write with more freedom. As stated by Lacina (2012) writing becomes a matter of form and the creativity goes out the window. Teachers need help in how to implement proficient writing in an effective manner. Our school district recognizes that our teachers need help but are burdened with larger issues across schools and content areas. Help for our teachers more than likely needs to come from the school level.
By the 2020 school year, Little Rural Primary School is almost completely one-to-one technology in all classrooms. For kindergarten and first grade, students use iPads and for second through fourth grade, classrooms have a laptop for each student. For most classrooms, teachers use student laptops for instruction in creating PowerPoints, going to educational websites, creating videos for projects, and for student research. All classrooms have a Promethean Board which is used to display websites or other things for educational purposes. Most classrooms have a document camera as well. For writing, students use laptops to research topics and create Microsoft Word documents.

The school involved in the study has a history of scoring poorly on state assessments. More recently, has resulted in our school performing unsatisfactory on the state district report card and thus has been deemed a Comprehensive Support and Improvement School (CSI) (SCDE, n.d.). This means that after evaluation, our school received a comprehensive score that fell within the critical needs area. A comprehensive score of less than 33, out of a possible 100, will place a school in this category. Our school had a score of 26 on the 2018 SC School Report Card (SC School Report Card, 2018). This was due to a lack of growth between grades 3 and 4 in the 2017-2018 school year. When a school is deemed a CSI school, the department of education steps in and sets up an improvement plan while providing the school a transformation coach to help improve instruction and achievement. The state also supports the school financially so that the school may afford resources for students and educators. Falling into this critical needs area is further proof that new, innovative instruction is needed in our school.

My hope for this study was for the children of Little Rural Primary School to receive the caliber of instruction they deserve. I want to share my findings with other
teachers and school district personnel to create a writing curriculum that will help and challenge students. My desire for these students, as they graduate high school, is for them to enter the college classroom a confident student with exceptional writing skills to help them achieve their dreams.

**Statement of the Problem**

Third and fourth grade gifted and talented students at Little Rural Primary School do not have the writing skills they need to begin a rigorous year of writing assignments and assessments. Students have repeatedly performed poorly on the state’s annual writing assessment (SCDE, 2016; SCDE, 2017; SCDE, 2018; SCDE, 2019). The school does not have a mandatory district-level writing curriculum in place, although our school has recently implemented the Lucy Calkins writing curriculum. Also, students at this school have poor attitudes toward writing. Poor attitudes toward writing often result from poor performance in writing (Bulut, 2017).

**Purpose Statement**

The purpose of this action research was to explore the use of digital peer review on student writing composition and student attitudes toward writing for third and fourth grade gifted and talented students at Little Rural Primary School.

**Research Questions**

The research questions for this action research study are:

1. How and to what extent does digital peer review impact writing composition for third and fourth grade gifted and talented students?

2. How and to what extent does digital peer review impact the third and fourth grade gifted and talented students’ attitudes toward writing?
Researcher Subjectivities & Positionality

I am a Caucasian female who has always lived in the South and was raised in a Christian atmosphere. I learned early that education is important and is the gateway to a successful future. In fact, I cannot remember a time when I did not want to be a teacher. After high school, I attended a small private college where I earned my degree in elementary education and was awarded my first teaching position before I graduated. A few years later, I earned a master's degree in administration from a local university. Although I admire those in an administrative position, I decided that I wanted to stay closer to the classroom. All these life changing moments listed above have shifted and shaped my beliefs and principles, shaping my paradigm with each life event.

My experiences with educational technology are still developing. My own life experiences have led me to the belief that having an educational technology specialist in the district or school is important, and with recent changes in our country and world, this need is even more prevalent. Our children need to not only know how to read, write, and complete math problems, but also need to know how to use technology in their courses. When they attend college, and then venture into the workplace, they will use computers or tablets or other complicated technological tools to assist them with their job. Teachers need direction in leading them to implement digital tools in their classroom, as well as how to successfully implement distance or virtual learning. Students need help with manipulating these digital tools in the most productive way. It is my belief that an educational technology specialist or coach will be the one to lead our teachers and students as blended classrooms become more frequent and distance learning becomes part of our new normal.
My research paradigm for my study is interpretivism. Interpretivists believe that there is no one truth or way to interpret the world around them, but many ways (Bucci, 2002). Interpretivists also believe that there are a variety of reasons why humans act or react (O'Donoghue, 2006). Interpretivism states that "social actors construct a world of lived reality by attaching specific meaning to local situations" (O'Donoghue, p.132, 2006) and believe that meaning and structure come from everyday life (O'Donoghue, 2006). Interpretivists often find meaning in the world around them. They place value on specific things in their lives (Bucci, 2002). This paradigm impacted my research because I wished to see how implementing digital peer review would affect writing composition as well as student attitude. I also wanted to explore the ways in which participants interacted with their environment and how this shaped their attitude toward writing. In this research study, it was important to me for participants to share their thoughts and feelings to help me understand what strategies were effective.

My positionality within my research was the position of insider working with other insiders (Herr, 2005). When a researcher takes the position of insider working with other insiders, they wish to work with others within the same setting. These researchers are looking to have a greater impact on the setting, not just within themselves (Herr, 2005). This positionality suits my research study because I focused on how my implementation of digital peer review would affect my students’ writing outcomes, as well as their attitudes toward writing. Furthermore, I have taught some of these students for the past two years, so they see me as an insider working with them to be successful. Because this study took place in my own classroom, and I did not work with other researchers, I was the primary researcher in this study.
Within my research context, I was aware that my positionality would need to be negotiated. As the research was conducted, there was the possibility that my positionality could change, or shift due to possible problems or bumps that may arise. Also, since I was personally invested in the outcome of this study, I was aware that certain biases could arise. Although at the beginning of this study I was excited about the possibility of digital peer review making a substantial difference in the writing of my students, as well as contribute to a more positive attitude toward writing, I was conscious of these biases and to be open to negotiating my positionality. My positionality also needed to be open to negotiation with my participants. Because of the time I have spent with some of my participants, I already had certain perceived notions about the academic performance of these participants. My positionality had to remain open to interpret the data from these students and not automatically assume they would perform in a certain manner. The stakeholders in this study had specific roles, but throughout the study, those roles could have changed, so it was important for me to be open to negotiating my position as their role may have changed. For this study, I was the one doing all the research and implementation, so I was open to the possibility that my position of certain aspects of the study would change at the completion of the study when analyzing the data.

My own values and biases in education influence my work as an educational technology researcher. Having spent twenty years in the classroom, I have experiences both inside and outside of the classroom. These experiences all add to my beliefs about education. It is my opinion that educational technology is the future and that schools need a technology plan. Because of these beliefs, I have biased beliefs that technology in the classroom is important. This viewpoint could have clouded my judgement and not let
me see the advantages of having a little less technology in the classroom, as well as having an instructor guide students or have students still meet without the aid of technology. It was important to be careful to not let my biases about technology interfere when I analyzed student data, especially writing attitude surveys. Biases can influence a study, so I was careful to monitor my positionality, my position as both researcher and instructor, as the study progressed.

Definition of Terms

21st Century skills

Skills needed by every graduate to be productive citizens in the 21st century. The skills are mastery in core subjects, learning and innovation skills; information, media, and technology skills; and life and career skills (SCDE, n.d.).

Digital collaboration

Digital collaboration is defined as two or more students working together through an online platform (Wichadee, 2013).

Digital Peer Review

Students working together, on a digital platform, to give peer feedback (Kayacan & Razi, 2017).

Digital tools

At this stage of the research, digital tools is defined as any instrument used to access technology and that broadens the audience for the user, (Hunt-Barron, Tracy, Howell, & Kaminski, 2015). The use of technology to support writing in the planning, editing, and revising portions of the writing process include types of digital tools such as computers and writing software (Peterson-Karlan, 2011).
Non-user

At this stage of the research, non-user is defined as the absence of a variable (in this case Microsoft Word Online) when completing writing assignments. Baumer, Burrell, Ames, Brubaker, and Dourish (2015) suggests that what constitutes non-use can be a matter of discussion, but that possibly we should look closer at what is being used in place of what is being taken away.

Peer review

For this study, peer review is defined as "partners who meet, and writers become readers who comment on their partners' work" (Philippakos, p. 14, 2017).

Student attitudes

Student attitudes is defined as how a student judges an object or experience which includes affective, cognitive, and physical components (Ekholm, Zumbrunn & DeBusk-Lane, 2017).

Text analysis

For this research, text analysis is defined as forming an idea or argument in support of a particular position or theory and supporting that idea or argument with evidence, typically through some sort of text (Lam, Hew, & Chiu, 2018; Lee, 2018)

User

At this stage of the research, user is defined as the participant that uses a variable (in this case Microsoft Word Online) when completing writing assignments. Satchell (2009) gives a definition for user as people in the world to whom technology is introduced.
CHAPTER 2
LITERATURE REVIEW

The purpose of this action research was to explore the use of peer review on student writing composition and attitudes toward writing for third and fourth grade gifted and talented students at Little Rural Primary School. The review of literature set out to answer two research questions: (1) How and to what extent does digital peer review impact writing composition for third and fourth grade gifted and talented students? (2) How and to what extent does digital peer review impact the third and fourth grade gifted and talented students' attitudes toward writing?

When researching this topic, four main variables were used to guide my literature search. These variables were: (1) digital tools, (2) writing, (3) peer review, and (4) student attitudes in writing composition and peer review. To collect research for this literature review, I used ERIC, Education Source, and JSTOR. To narrow my results, I limited my search to peer reviewed articles, book chapters, dissertations, and research reports within the last twenty years. In addition, when searching I used many different keywords such as digital tools, digital storytelling, e-learning, collaboration, digital collaboration, writing, primary students, elementary students, digital writing, online learning, blended learning, student attitudes, Constructivism, and combinations of these terms. Further, I used Google Scholar to help me find additional articles related to my variables. I would then search for specific articles in the ERIC database. Finally, I
often used the reference section of articles to find more resources on specific topics, especially if it was particularly difficult to locate information about them.

The review of literature is organized into six sections. The first section discusses writing theory and how understanding theory helps instructors to better understand students. The next section looks at traditional writing instruction and some of the advantages and disadvantages of past instructional practices. The third section is a small section on the advantages and disadvantages of text analysis. This section was added since participants completed text analysis during this study. The fourth section discusses the definition of digital tools and ways in which teachers are utilizing digital tools in their writing instruction. The fifth section discusses the role of peer review in a digital form. This section also looks at some examples of how instructors have applied digital peer review to their writing instruction. The concluding section discusses how digital tools and peer review in writing affect the attitudes of students toward writing.

**Theoretical Foundations Supporting This Research**

Writing theory has long been an area of study by scholars all over the world. There are several writing theories that help educators understand student writing processes when writing, as well as some of the aspects that influence student writing. The following sections will explore these theories.

**Writing Theories**

Theories such as Piaget's theory of cognitive development (Andrews & Smith, 2011) as well as Vygotsky's cognitive development theory (Berk, 1995) and Cognitive Process Theory (Flower & Hayes, 1981) state that writing is shaped by language, social interaction, motivation, goal setting, attention, memory resources, task environment, and the activities in which writers participate (Coker & Kim, 2018). When discussing the
difference between learning and development, as it pertains to writing, Andrews and Smith (2011) theorize that learning happens quickly while development takes much longer periods of time. Developmental theories can help instructors better understand how a writer develops over time according to the experiences they have had both inside and outside the classroom.

**Developmental Theories**

Developmental theories of writing have been founded in the effort to define writing (Coker & Kim, 2017). To understand how knowledge transfers, or how to measure the development of writing ability, many developmental theories have been established (Slomp, 2012).

**Theories of learning and development.** Psychologists Jean Piaget and Lev Semyonovich Vygotsky both contributed their own theories of development but had contrasting ideas of learning and development. They both stated that learning is directly linked to community, while development is not achieved directly through community (Andrews & Smith, 2011). This means that learning happens quickly for students due to the interactions they are having with classmates, teachers, or family. This theory that students learn from their community can be directly linked to writing. When allowed to work within the community of their classroom, students grow as writers. In contrast to learning, development is not necessarily dependent on community as it takes much longer to be established and the community may change for the student (Andrews & Smith, 2011). Along with Piaget and Vygotsky’s views on learning and development, there is also much discussion on transfer of information or knowledge. Transfer is the process of taking what you have learned in one context and applying it to another context (Slomp,
In developmental theory, understanding how information is transferred by the student can help instructors understand why there may be an issue with learning additional content and developing students' schema (Slomp, 2012, Lobato, 2014). Understanding how community impacts peer review was something that would need to be explored in this study.

**Simple view of writing model.** Another developmental model of writing is the simple view of writing (SVW) model. This is based in the belief that writing is the product of "lower order skill spelling and higher order skill ideation" (Poch & Lembke, 2017 p. 27). The SVW model presents a process of learning to write as a triangle, where working memory is the center (Wollscheid, Sjaastad, & Tømte, 2015). The three parts that make up the triangle are (1) lower-level transcription skills, (2) executive functions such as planning, reviewing, revising, and self-regulation, and (3) high-level text generation skills. Figure 2.1 is a visual of the SVW model (Berninger & Winn, 2006). SVW identifies transcription skills as skills that are developed first for the writer to communicate ideas (Wollscheid et al., 2015; Berninger, Vaughan, Abbott, Begay, Coleman, Curtin, & Hawkins, 2002). For young students, transcription skills such as handwriting, typing and spelling skills are developed early for writers to communicate their ideas (Wollscheid et al., 2015). The SVW model contends that development in these transcription areas leads to development of writing narrative essays, explanatory texts, and arguments (Poch & Lembke, 2017; Feng, Lindner, Ji, & Joshi, 2017; Wollscheid et al., 2015). The SVW model has been revised to better understand beginning and developmental writing, and more recent research has led to the creation of an updated version of the model entitled the not-so-simple view of writing (Poch &
Lembke, 2017). The participants in this study were young students and it was important to see what types of peer feedback, higher or lower order skills, were given to their partners.

![Simple View of Writing Model](image)

**Figure 2.1. Simple View of Writing Model.** Reprinted from *Handbook of Writing Research* (p. 97) by C. MacArthur, S. Graham, & J. Fitzgerald (Eds.), 2006, The Guilford Press. Copyright 2006 by The Guilford Press. Reprinted with permission.

**Not-So-Simple cognitive model (NSSC).** The last developmental model is a continuation of the simple view of writing model. The NSSC model identifies areas where writers struggle before the struggle becomes rooted in the writer (Coker & Kim, 2018). For this study, finding areas where students are struggling in writing was important to the peer review process to give productive feedback. The NSSC model builds upon the concepts of the SVW model but adds more discussion about the working memory and self-regulatory executive function aspects of the model as well as how long-term memory affects the writing process (Childress, 2011; Poch & Lembke, 2017). Both
the SVW and the NSSC model explain the cognitive development and complexity of
writing development. The NSSC model states that both long-term memory and short-term
memory is activated by working memory, but the difference is that long-term memory is
stimulated during planning, composing, reviewing and revising, while short-term
memory is stimulated only during reviewing and revising (Childress, 2011). NSSC
discusses more of the role of supervisory attention which explains how writers can focus
and stay on a specific task and switch between mental states as they are writing
(Childress, 2011). These developmental theories explain how a writer grows over time as
they gain knowledge and experiences. Developmental theories also show what ways
educators can use these foundations of these theories to understand what tools can help a
writer grow. For this study, understanding the foundation of this theory could give insight
into why students improve or do not improve in writing after peer review.

**Cognitive process theory.** Another theory in writing is the cognitive process
theory. Cognitive process theory explains how the brain functions, or processes
information, as well as the process in which people go through when writing (Flower &
Hayes, 1981; Deane, Odendahl, Quinlan, Fowles, Welsh & Bivens-Tatum, 2008;
Galbraith, 2009). A visual representation of the cognitive process writing model is
shown in Figure 2.2 (Flower & Hayes, 1981). Traditional practices in writing were more
linear because the model was more of a stage approach to writing (Flower & Hayes,
1981). The old way of writing only gave a product, not the inner processing of the writer
(Flower & Hayes, 1981). Writers were often asked to use exemplar models of writing to
improve their own writing, without reflecting on the process of writing (Deane et al.,
To prepare an intervention that steers away from traditional instructional practices, an understanding of the cognitive process in writing was essential.

Process Theory Approach. Process theory approach attempts to go beyond the product into the actual process a writer goes through. This approach stresses that writing is "recursive in nature" (Deane et al., 2008, p. 32), meaning the writer continually goes through the stages of prewriting, composing, and rewriting. Learners learn to work through the process, getting to know themselves as a writer (Onozawa, 2010). Writing is not merely taking preconceived ideas and writing them down on paper, but also involves creating original content and prescribing the way it will be presented (Galbraith, 2009). When learners begin to write, they learn the basics of handwriting, or transcribing, and spelling. Research states that whether students learn this through using traditional paper-pencil or through digital means, what's important is that the student becomes proficient to free up their working memory for the planning, revising, and publishing of composition.
(Wollscheid et al., 2016). For this research study, using digital peer review would help participants work through this process.

**Three elements of Cognitive Process Model of Composing.** There are three major elements to the cognitive process model as referenced in Figure 2.2. The first is task environment, which is everything in the writer's environment including the problem and the text. In this stage, the writer begins with a problem or assignment. Here keyboarding, handwriting, and spelling are critical aspects of writing (Wollscheid et al., 2016). The second is the writer's long-term memory. This is where the writer has stored the information or knowledge for the task. Students use their stored long-term memory to bring in their own knowledge of the topic they are writing about (Childress, 2011). The last stage is the writing process. This is the actual planning, composing, and reviewing of the writing (Flower & Hayes, 1981; Gailbraith, 2009). During this last stage students go into deep planning of their writing including organizing, generating ideas, and goal setting. Students enter a stage of translation where the student's ideas and planning become actual sentences (Childress, 2011). Students then enter the editing and revision phase of the writing process (Childress, 2011).

This theory outlines that writing can happen anywhere and at any time. Planning, translating, and revising are cognitive processes, not stages, therefore they can take place anywhere (Gailbraith, 2009). The cognitive process model represents the internal process of the writer's mind and looks at composing as a complex problem-solving activity (Pek & Mee Mee, 2015). Using cognitive processing theories leads to a better understanding of how the writer creates a plan and executes it when writing. For educators,
understanding the cognitive process will help to create better environments for students to become more successful writers.

**Constructivism**

According to constructivism, students build schema as they are working or constructing their own knowledge through their own experiences. Within the classroom, teachers rely on the idea that students build this knowledge not only individually, but within their classroom community (Powell & Kalina, 2009). This was an important factor to consider when preparing for this study. As the community within the classroom evolves, students rely on their interaction with others to continue to build socio-cultural awareness which helps them build their writing composition skills (McKinley, 2015). Giving students opportunities to interact with classmates through partner work or group interaction will in turn create better writers (McKinley, 2015).

There are two areas of constructivism that teachers must consider when applying this theory to their classroom. The first is cognitive or individual constructivism, made famous by Piaget's work on how the individual constructs knowledge (Powell & Kalina, 2009). The second is social constructivism dependent on Vygotsky's work on how social interaction is important in the learning process (Powell & Kalina, 2009; Kizilcik & Daloglu, 2018). Vygotsky believed students who scaffold with more experienced or knowledgeable peers learn to develop skills on their own (McKinley, 2015). In writing, students who work with others benefit from their knowledge and experience and become better writers themselves.

**Piaget's approach to constructivism.** Piaget's theories on constructivism and cognitive development differed from those of his peers. Piaget's theory on cognitive
development states that development precedes learning (Andrews & Smith, 2011). In other words, the development of the child came first through experiences. Then, the child was able to learn through those experiences. Piaget also claimed that children's schemas are built through combining knowledge when they go through the four stages of development: sensorimotor, preoperational, concrete operation, and formal operational (Powell & Kalina, 2009). Piaget's theory emphasizes that humans must construct their own knowledge, not just be handed information (Powell & Kalina, 2009). The learner must create their own experiences to learn, not just be handed down information to digest. For this study, student experiences would be important when implementing digital peer review since these experiences would impact both their writing composition and their attitudes toward writing.

**Vygotsky's constructivist theory.** As mentioned previously, Vygotsky was instrumental in developmental theories when it came to child development over time, both within education and outside of education. Vygotsky's theory of social constructivist states that knowledge is constructed through communities (Andrews & Smith, 2011). The constructivist theory places a larger role of importance on the learner rather than the instructor (Wang, 2014). Constructivist theory also suggests that students learn best when they work together in communities (Andrews & Smith, 2011). Interaction between people is important because it gives a chance for students to vocalize what they are thinking. Learning cannot be separated from social and cultural contexts (Annamalai, Eng, Abdullah, & Sivagurunathan, 2015). Learners increase their intellectual growth through interaction with others because they can scaffold their ideas with others (Annamalai et al., 2015). Within communities of learning, students acquire new
knowledge through their classmates' experiences and cultural differences. In turn, students build upon their own knowledge and expand their schema. Since working with partners was an important part of this study, understanding Vygotsky's research on constructivism was a key factor to successful implementation of digital peer review.

**Traditional Forms of Writing Instruction**

To understand current writing pedagogy, and why implementing technology into writing should be considered for this study, there must first be an examination of how writing was previously taught. This includes investigating traditional methods of writing instructional practices. Traditional writing instruction is defined as methods used by the teacher which made him or her the center of instruction (Rietdijk, van Weiijen, Janssen, van den Bergh, & Rijlaarsdam, 2018). To take a closer look at traditional methods, and compare those to methods used currently, this section will focus on a) the definition of traditional teaching methods of writing and b) advantages and disadvantages to those methods. An examination of these factors will lead to an understanding of how best to serve students in writing instruction.

**Definition of Traditional Writing Instruction**

For this study, traditional writing instruction will be defined as instructional methods used by teachers where the teacher is the center of instruction, therefore, instruction is teacher centered (Rietdijk et al., 2018). Traditional instruction of writing consisted of a teacher being the only person that helped students create and improve their writing. In traditional methods, there was no external critiquing of student work and the teacher conducted all instruction, critiquing, and revising with the student (Hairston, 1982).
Researchers state that traditional teaching methods include "strongly teacher-oriented" (Rietdijk, et al, 2018, p. 641) instruction with little collaboration or feedback. Other researchers define traditional methods of teaching as guiding students through analysis of "paper-based text, pictures or video media" (Lan, Hung, & Hsu, 2011, p. 149). Traditional approaches to writing instruction are characterized as placing an importance on mechanics by educators, which leads to students perceiving that text appearance is what is most important (Troia, 2014). In all, the most important aspect of traditional writing instruction is that the educator, not the learner, is the one that is doing most of the work. Since digital peer review is a student-centered activity, understanding traditional methods will be necessary for successful implementation and to not fall back on outdated practices.

**Advantages of Traditional Writing Instruction**

Despite some traditional writing pedagogy being outdated, there are some advantages. For starters, the traditional method emphasizes revision and editing, both essential parts of writing (Troia, 2014). In this study, it was important to consider this when analyzing participant Microsoft Word feedback. Traditional methods place a lot of importance on the structure of composition which can help guide some students that need more structure. Another advantage of the traditional method is that some students prefer the face-to-face interaction because it helps stimulate comprehension (Liu & Long, 2014). This is especially true of novice writers. Their dependence on an instructor outweighs the independence of working in a more digital, online environment. Additionally, some research suggests that using paper and pencil to compose helps stimulate the development of a child's brain (Wollscheid et al., 2015). Researchers argue...
that the practice of handwriting alphabetic letters leads to a foundation for academic success in the future (Wollscheid et al., 2015).

Disadvantages of Traditional Writing Instruction

Many of the disadvantages of traditional writing instruction are due to this method's lack of change or variety. Traditional methods often do not allow learners to connect with the outside world (Andrews & Smith, 2011). The fact that all writing instruction takes place within the four walls of the classroom and there is no inspiration brought in from the outside world is detrimental to the development of the writer. Another disadvantage is that teachers who provide traditional forms of media such as text and pictures or video related to writing are often not very flexible or reusable to students (Lan, Yu-Feng, Hung, Chun-Ling, & Hsu, Hung-Ju 2011). In other words, the teacher gives the student the media in which they will draw inspiration from and rarely is it able to be of great use to the student more than once. Teachers also traditionally focus on the mechanics of writing which leads writers to believe that the appearance of the text is what is most important (Troia, 2014). Things like spelling, sentence structure, and punctuation are high on the list of importance in traditional writing instruction. Hairston (1982) states that when teachers choose to use the traditional paradigm, they are choosing "product over process" (p. 78). Finally, and probably most importantly, in traditional writing instruction, student learning is passive. Students do not take an active role in their own learning. Traditional methods allow little space for student thinking because it places more emphasis on the product rather than the process (Liu & Long, 2014). For this study, it was important to demonstrate the ways in which a non-traditional approach can shift experiences from teacher-centered to student-centered.
Analysis of Text in Writing

Definition of Text Analysis

Text analysis, also known as evidenced based writing or argumentative writing, is an important component of writing instruction in elementary schools, especially given the development and implementation of Common Core standards in English Language Arts classrooms across the United States (Lee, 2018). Text analysis can be defined as forming an idea or argument in support of a particular position or theory and supporting that idea or argument with evidence, typically through some sort of text (Lam, Hew, & Chiu, 2018; Lee, 2018).

Advantages of Text Analysis

Text analysis has a positive effect when working in group settings (Rashtchi, 2019). When evaluating fiction, text analysis draws the reader closer to the themes, character, and setting of the story and provides a deeper understanding of the text (Rashtchi, 2019). Rashtchi (2019) found in her research study that the students often put themselves in the place of the character, having focused on the "inner feelings, judgments, preferences, and thoughts about the themes of the stories." (p.10). For this study, students will also have to put themselves in the place of this character to relate to the story and answer the text dependent analysis question.

Rashtchi (2019) also found that text analysis enhanced reasoning skills and ability to look for evidence to support their argument. Doing a think-aloud also helps to develop an argument, especially before trying to put it on paper (Rashtchi, 2019). The same was found in the research conducted by Cowles (2011) in a study of high school history students. Cowles (2011) found that the implementation of reading comprehension and
analysis into the course curriculum resulted in an improvement in student ability to talk about reading and writing, an important skill in text analysis. This allows the writer to think through questions about the topic before writing a first draft. This idea of having a conversation first is also echoed in Friedrich, Bear, and Fox's (2018) article on teaching evidence-based writing. Friedrich, et al. (2018) state that students must understand the difference between dialogue and debate as well as understand that there is a plethora of information that they will need to sort through first. This helps students to understand the topic first before moving on to their position. Evidence-based writing also helps students to distinguish between a reliable and unreliable source (Friedrich et al., 2018). This is important when writing on a position because students must learn not to trust everything they read online and to distinguish between a resource that is valuable and invaluable as well as those that are based in facts and opinions. For this study, participants would be conducting digital peer review and receiving feedback from their partners. An understanding of how participants will be able to provide feedback on text analysis, was considered when creating the plan for implementation.

**Disadvantages of Text Analysis**

Lee (2018) states in her study on evidenced-based writing in an English language learner (ELL) classroom that one disadvantage of text analysis for students is the language barrier (Lee, 2018). Because culture is paired with language, each culture has its own language patterns that require textual structures that are different from other cultures (Lee, 2018). It is part of the English tradition to clearly state one's ideas and support with evidence (Lee, 2018). This could pose a difficulty for children of other cultures that place importance on harmony and social cohesion (Lee, 2018). Classrooms
across the United States are a mixture of cultures. Confusion could arise if standards of English textual structures are not explained and addressed early.

Another disadvantage is that teaching analysis skills in isolation is not an effective strategy (Cowles, 2011). In her study with eleventh grade history students, Cowles (2011) found that using analysis was more productive when using it across instructional areas. The researcher also found that this means more training for content-area teachers and lobbying other content area teachers, such as math or science, to share in the responsibility of teaching reading and writing strategies (Cowles, 2011). For this study, the focus was only in writing, but the findings do place importance for text analysis, especially when pairing with digital peer review, to be explored across content areas.

**Text Analysis and Peer Review**

Students conducting text analysis will need explicit instructions on how to provide feedback to their partners before they are able to conduct effective peer review (Lee, 2018; Noroozi & Hatami, 2019; Chaktsiris & Southworth, 2019). This was an important consideration when planning for the implementation of digital peer review in this study. Although this is not a cumbersome disadvantage, it negates from the idea that students will already be prepared for peer review and will be able to start conducting peer review at the very beginning of the school year or semester. Modeling should be an educator's first step when introducing peer review into the classroom (Cowles, 2011). For students to be successful at giving peer feedback on text analysis, modeling is a must. Once modeling has taken place, students can then begin to give feedback on text analysis.

In their study on using peer feedback on students' argumentative essay writing in an online biology course, Haro, Noroozi, Biemans, and Mulder (2019) found that after
modeling, students were able to give feedback that was related to the understanding of the topic, as well as in the writing of argumentative essays. The modeling allowed students to "confirm, complement, overwrite, or restructure their knowledge conceptions" (Haro et al., p. 394, 2019). Furthermore, modeling helped students to identify and correct mistakes or misconceptions and get feedback on how to make better progress (Haro et al., 2019). The modeling also helped with reflection, broadened reasoning and understanding, and developed student argumentative writing skills, which fostered student's argumentation competence (Haro et al., 2019). Yalch et al. (2019) also discussed the need for instruction when students begin peer review. In their study on the benefits of peer review on student writing, the researchers found that although students used a rubric to give peer feedback, instruction on how to use the rubric effectively was needed to give substantial feedback to their partners. The findings in Haro, et al.'s (2019) and Yalch, et al.'s (2019) studies are reflected in Noroozi and Hatami's (2019) study on university students providing online peer feedback to their peers' argumentative essays. Noroozi and Hatami (2019) found that after implementation of modeling, feedback from peers was supported with "arguments, justifications, and suggestions for improvement" (p. 553). The researchers also found improvement in self-reflection and an increase in deep thinking when revising essays (Noroozi & Hatami, 2019). Furthermore, Noroozi & Hatami (2019) found other benefits to peer feedback such as enhancing students' own content learning, better reflection on the content presented to them, better ability to consider alternative scenarios and positions, and improving the ability to use their peers' expertise to enhance their own learning. For this study, modeling would not only be
implemented by the instructor, but also by peer review partners, so placing importance on modeling was imperative.

**Digital Tools in Writing Instruction**

**Definition of Digital Tools in Writing Instruction**

Digital tools are defined as any instrument used to access technology and broaden the audience for the user (Hunt-Brown, Tracy, Howell, & Kaminski, 2015). Teachers currently define digital tools as the use of the internet, including social sites, cell phones, and texting. Teachers also state that digital tools help provide for a larger audience when writing (Purcell, Buchanan, & Firedrich, 2013).

Digital tools have been used in the classroom for over 50 years. They began as film strips and moved to video clips and now digital tools fit in the palms of students' hands. Digital tools have evolved to more sophisticated devices that can help students improve their skills in writing. This section will discuss ways in which digital tools are used in classrooms. More closely, this section will focus on a) definition of digital tools, b) advantages of digital tools in writing instruction, c) disadvantages of digital tools in writing instruction, and d) approaches to using digital tools in writing. Each of these areas is an important asset to explaining how digital tools can be a great resource to students when they are writing.

**Advantages of Digital Tools in Writing Instruction**

Advantages for including digital tools in the writing process range from increasing the ways students may share their work to giving students opportunities to write for audiences outside the four walls of the classroom, digital tools also provide platforms where students can write about topics beyond a simple classroom essay. The use of digital tools in writing instruction offers an opportunity for struggling writers to
view writing outside the traditional paradigms (Dunn, 2015). For example, when
students are assigned a writing assignment, they may seek more information on the
internet. This wide range of information will help shift their paradigm and influence their
writing. Digital tools also offer alternatives to traditional pencil and paper when writing
(Pytash, Ferdig, Gandolfi, & Matthews, 2016). Offering other platforms to write such as
blogging, Tweeting, or discussion panels may influence students who are reluctant to
begin writing assignments and may give them an opportunity to be successful in writing.
Finally, digital tools offer new, innovative solutions to writing such as taking pictures and
then writing descriptive essays or using social media to write summaries (Silva, 2012).
Using writing in this way helps students to see that writing is a personal experience, not
just a means to a grade. For this study, the consideration of which digital tools to use for
implementation of digital peer review was important as the researcher wished to find
which tools would be most effective.

Disadvantages of Digital Tools in Writing Instruction

One disadvantage of using digital tools in writing instruction is the lack of equal
access. This can cause a problem within schools that do not have enough technology for
each classroom or student (Cottrill, 2010). This is especially true for poor rural areas and
overcrowded urban areas. Students in these types of communities either do not have any
technology or there is not enough technology to go around. This can create issues when
teachers wish to find other ways for their students to express themselves through writing
other than traditional methods. Another disadvantage is that focus can sometimes shift
more on the multimedia and less on the effectiveness of instruction (Liu & Long, 2014;
Purcell, Buchanan, & Frederich, 2013)). What this means is that instructors rely too
heavily on the technology instead of intertwining the pedagogy with the technology. The issue of the tool becoming more important than the intervention was a concern for this study, so careful planning was put into making sure this did not happen. In a national study, Purcell, et al. (2013) found that teachers were concerned that students using digital tools take shortcuts and do not put forth their best effort in writing composition. Teachers expressed that students were more likely to "write too fast and be careless" (Purcell et al., 2013, p. 32). Students in the same study expressed the same sentiment (Purcell et al., 2013). To not allow the use of digital tools to be detrimental to the evolution of our students' writing, the instructor must find the balance between the use of traditional methods and non-traditional methods. For this study, much consideration was given as to which tools would generate positive attitudes, as well as better writing composition.

**Approaches to Using Digital Tools in Writing Instruction**

Over the last few decades, the use of digital tools has increased in the classroom. The area of writing has been no exception. The very fact that we live in a digital world where texting, blogging, and social media are daily communication methods, shows the progression to a digital writing era is here (Kilpatrick, Dostal, Sausbury, Wolbers, & Graham, 2014). As the world shifts to this high-speed communication, the classroom also continues to advance. In writing, a growing number of instructors are using digital tools to facilitate their needs in keeping up with technological advances. Taking advantage of their students' growing knowledge of digital tools, instructors are taking the digital tools that students use outside the classroom and are finding new uses for them.
inside the classroom (Kilpatrick et al., 2014). This study wished to use digital tools in writing in a way that would foster a more positive use of technology in the classroom.

There are several ways in which digital tools are implemented into writing instruction. Some examples of ways in which digital tools are used in writing are using apps for planning, co-construction projects, and in publishing (Kervin & Mantei, 2016; Sessions, Kang, & Womack, 2016). Another example is the use of visual tools such as film (Kilpatrick et al., 2014). The use of film helps students to discuss and understand the role that characters, plot, and mood play in a story and therefore help students to form their own narrative writing (Kilpatrick et al., 2014). In previous studies, researchers have used film to discuss the elements of the story, which in turn helped students plan and write their own story (Husbye & Zanden, 2015). Tools are also described as iPads, Google products, and computers (Hunt-Brown et al., 2015). These types of tools are especially helpful in the writing experience as they help students plan, write, and further develop their writing at a pace they need.

Digital tools have been used in a wide range of ways. The use of iPads, social media, and visual art has been used to help students with writing (Dunn, 2015). Even the use of Twitter can help with writing. In one study, researchers used tweets as a pre-writing activity to help students summarize their thoughts. The researchers found over time, students were successful in condensing their writing to the most important parts (Hong, Mongillo, & Wilder, 2011). Students have also used iPads to plan, produce, and share writing. In one study, a student used his iPad to plan and create a narrative piece, and then was able to share his work with his family (Kervin & Mantei, 2016). Digital
tools offer students the opportunity to plan, create, and share in ways that are creative and intriguing.

**Peer Review in Writing Instruction**

Peer review is an important part of student learning. Peer review teaches students skills that are beyond academic such as "practicing social interaction skills like turn taking, collaboration, and taking and relinquishing authority" (Tuzi, 2004, p. 218). Peer review in the classroom takes one of two forms: 1) traditional, face-to-face peer review and 2) digital peer review (Liu & Sadler, 2003; Guardado & Shi, 2007; Branham, 2012). Digital peer review is a recent addition to many classrooms. With the increase of access to technology in the classroom, educators can use technology to connect students in asynchronous conferencing which allows students to make explicit references to the text as well as make evaluative comments (Guardado & Shi, 2007). This section will take a close look at: a) definition, examples, advantages, and disadvantages of traditional peer review and b) definition, examples, advantages and disadvantages of digital peer review. Examining both forms of peer review will lead to a better understanding of how each can impact student growth (Liu & Sadler, 2003).

**Traditional Peer Review**

Traditional peer review is typically thought of as face-to-face interactions among students either in partners, small groups, or whole class settings (Gayle Morris Sweetland Center for Writing, n.d.). Instructors have used this type of peer review for many years, and across content areas, to help students use the expertise of their peers in forming better written composition. The following sections will explore (a) definition of traditional peer review, (b) examples of traditional peer review in the classroom, (c) advantages of traditional peer review, and (d) disadvantages of traditional peer review.
**Definition of traditional peer review.** For this study, peer review will be defined as "partners who meet, and writers become readers who comment on their partners' work" (Philippakos, 2017, p. 14).

**Examples of traditional peer review in the classroom.** There are several ways in which peer review can take place in the classroom (Gayle Morris Sweetland Center for Writing, n.d.). The first way is for students to work in pairs to review each other's work. Students may meet in pairs face-to-face or separately, exchanging papers and working alone, and provide feedback using checklists, a comment form, or a rubric, (Guardardo & Shi, 2007; Philippakos, 2017). The second way students can conduct peer review is through small groups. One way to conduct small group peer reviews is through a small group workshop model (Gayle Morris Sweetland Center for Writing, n.d.). In this workshop model, students are placed into groups of three to four and are given two to three writing samples to review. Instructors should consider the lengths of each essay and amount of time in class. In these small groups, each student is asked to review the essay and critique it. Once everyone has critiqued each essay, the entire group reflects on the reviews. The advantage of small group peer review is that greater, more diverse feedback is being given as well as students seeing more examples of their classmate's work (Gayle Morris Sweetland Center for Writing, n.d.). The final way that peer review can be conducted in the classroom is through a whole group setting. Models such as the collaborative model use the entire classroom to conduct peer review. In the collaborative model, students are offered opportunities to have their writing reviewed one-on-one, within a small group, and within online spaces. (Branham, 2012). Instructors may also use the full class workshop model (Gayle Morris Sweetland Center for Writing, n.d.). In
this model, the entire class is divided up into groups and the entire class reviews one essay. Instructors may choose to already have comments on the essay or allow students to write comments themselves. This model is used when the instructor wishes to have students practice peer review before taking on peer review tasks (Gayle Morris Sweetland Center for Writing, n.d.). As stated before, the Constructivist theory model mirrors the opportunities afforded to students when peer review is conducted and is a way for students to be able to share their experiences, or schemas, to complete their work to the best of their ability (Andrews & Smith, 2011). Understanding the foundations of peer review was important to carry out this study's method in a successful manner.

**Advantages of traditional peer review in the classroom.** When looking at peer review in the classroom, the biggest advantage is that it promotes active learning among students. Active learning is when students are given opportunities to foster their own learning by working together (Rietdijk et al., 2018). Peer review can be looked at as a type of collaboration between peers. Collaboration improves motivation in students and provides opportunities for students to help each other (Wichadee, 2013). When students collaborate, the responsibility of learning is removed from the teacher and placed onto the student. This helps to build trust among peers (Chaktsiris & Southworth, 2019). One of the findings for Chaktsiris & Southworth's (2019) study on implementing peer review in writing, was that students felt that peer review helped them build trust with their peers. They further found that trust had to be built first before collaboration or constructive criticism could take place (Chaktsiris & Southworth, 2019). In this study, trust was something that needed to be addressed before the peer review process could begin.
Peer review is also helpful in increasing student learning in specific content areas. During the peer review process, students bring their own knowledge, or schema, with them (Andrews & Smith, 2011; Powell & Kalina, 2009). This in turn allows the transfer of knowledge between students (Slomp, 2012). In this study, participants brought their expertise to help evaluate and provide feedback to their partners. When engaging in peer review, students enhance domain specific learning, meaning they become better experts in specific fields as they add to their cognitive processing for learning (Noroozi & Hatami, 2019; Haro et al., 2019). This is important in types of writing such as evidenced-based or argumentative writing because students will be required to complete this type of writing in specific fields of study like science. Being able to defend your argument is an important skill for young learners as it will be important as they develop into analytical writers.

There are other benefits for students who participate in peer review. The greatest benefit is that it fosters a sense of community in the classroom, building relationships among peers (Chaktsiris & Southworth, 2019), which is something this study wished to examine closely. Giving peer feedback can help students to develop a sense of audience, therefore allowing them to shape their writing according to who will be reading it (Philippakos, 2017). Students can look for areas that could potentially be confusing in their own work and make the needed corrections (Philippakos, 2017). Students who provide peer feedback develop better writing skills (Chaktsiris & Southworth, 2019). Reviewing the work of others lets students reflect on their own writing, seeing the areas that they need to improve (Noroozi & Hatami, 2019) and the more critical students are with their review, the better results the student receives (Yalch, Vitale, & Ford, 2019).
Students also saw the benefit in providing and receiving feedback (Chaktsiris & Southworth, 2019). Reading, critiquing, and offering feedback to other's writing helps in the creation of better work for students and better self-reflection (Lam, Hew, & Chiu, 2018; Noroozi & Hatami, 2019). These advantages were considered when thinking of how to design the intervention for this study.

**Disadvantages of traditional peer review in the classroom.** One disadvantage to peer review in writing is the issue of peer feedback. In this study, it was important for participants to feel comfortable in providing feedback as well as to give effective feedback. Sometimes students offer comments such as "good work" or "needs more detail" which is not precise feedback. Students also hesitate when giving feedback because they may not understand how to properly evaluate their partner's writing (Philippakos, 2017). Another disadvantage of peer-review is that sometimes students do not value their partner's comments like they would if they had come from the instructor (Philippakos, 2017). There are times when feedback may not be explicit or implicit (Bradley & Thouesny, 2017). For peer review in writing to work, feedback needs to be much more detailed for it to be effective.

**Digital Peer Review.** When students work together on a digital platform to give peer feedback, they are engaging in digital peer review (Kayacan & Razi, 2017). Digital peer review allows the participants to help their peers as well as be active participants in their own learning (Miller & Olthouse, 2013). The following sections will discuss the (a) definition of digital peer review, (b) give examples of digital peer review (digital peer editing and digital peer review), (c) discuss advantages of digital peer review, and (d) disadvantages of digital peer review.
**Definition of digital peer review.** Digital peer review is defined as two or more students working together through an online platform (Wichadee, 2013). In other words, for something to be considered digital peer review, there must be more than one person and there must be some form of technology involved. In digital peer review, two of the most widely used forms of digital peer review is online peer editing and online peer feedback (Philippakos, 2017).

**Examples of digital peer review.** There are many ways in which students can digitally review their peer's writing. Research has shown the benefit of using online platforms such as Schoology, Google Docs, or Microsoft Word in helping students with online peer-feedback (Guardado & Shi, 2007; Zainnuri & Cahyaningrum, 2017; Ebadi & Rahimi, 2017). An example of digital peer review is when students use digital tools like Microsoft Word or Google Docs to complete and give feedback on written work (Miller & Olthouse, 2013; Guardado & Shi, 2007; Ebadi & Rahimi, 2017). Digital peer review can be conducted either through (a) peer editing, which would simply be peers editing each other's writing or through (b) peer feedback, the act of giving suggestions to someone after reviewing their work (Ebadi & Rahimi, 2017).

**Digital peer editing.** Peer editing is defined as "a group of students who edit a document together" (Jelderks, 2012, p. 23). One example of peer editing is for students to use a platform such as Google Docs to share and edit peer work (Jelderks, 2012). In this manner, students can share their document with each other, and help the student by offering forms of editing such as corrections on spelling, syntax, and grammar. Students can also use apps to help in this same way (Hojeij & Hurley, 2017). For this study, participants engaged in peer editing with their partner. Educators who use digital peer
editing in their classroom can also use learning management systems to facilitate peer editing groups. In this way, students may share their work with partners as well as edit their peer's work using the online platform.

**Digital peer feedback.** Digital peer feedback is when students use different types of technology that allow for commenting on another students' work and communicating in a digital environment (Miller & Olthouse, 2013; Kayacan & Razi, 2017). Peer revision is beneficial to students and has shown to improve writing at different levels (Miller & Olthouse, 2013). Digital environments allow students to publish online as well as improve their communications skills (Kayacan & Razi, 2017) and increases writing performance "through modeling of enthusiasm, encouragement, motivation, and coping" (Miller & Olthouse, 2013, p. 68). This study wished to showcase participant writing skills and knowledge through this process. When using digital tools such as digital storybooks and blogs, students can submit peer feedback to each other (Miller & Olthouse, 2013). Microsoft Word is another tool that allows students to use features such as spell-check and cut and paste to help make revisions to writing (Miller & Olthouse, 2013; Jelderks, 2012) as well as using the comment feature to provide direct feedback to specific portions of text (Guardado & Shi, 2007). After considering many digital tools, Microsoft Word Online was chosen for the implementation of digital peer review in this study. The greatest reason for choosing this digital tool was the commenting and sharing features in Microsoft Word Online. Digital peer feedback also provides students with an opportunity to gage their audience and therefore allows them to make future considerations to their audience (Kayacan & Razi, 2017; Philippakos, 2017).
Subsequently, having students respond to their peers' work aids in developing writing skills (Kayacan & Razi, 2017), which was an important part of this study.

**Advantages of digital peer review in writing.** There are many positive aspects of digital peer review (Noroozi & Hatami, 2019). One of the advantages of digital peer-review is that it offers an opportunity for students to review work outside the classroom using tools such as Google Docs (Wang, 2017; Aydawati, Rukmini, Bharati, & Fitriati, 2019), Microsoft Word, and other online digital tools to help students review each other's work (Sevilla-Pavon, 2015). Another advantage is when students use digital tools to review their peers' work, students increase their critical thinking skills (Deveci, 2018). These skills are achieved when students review each other's work using different platforms and when providing peer feedback on writing assignments (Miller & Olthouse, 2013; Zainnuri & Cahyaningrum, 2017). Knowing how to use the digital tools to conduct digital peer review was an important task to accomplish before implementation of the intervention.

Using online platforms for students to collaborate or work together also helps to keep precious classroom time sacred. When using Schoology, a type of learning management system, students feel more responsible and self-confident in their work and rely less on their teachers (Zainnuri & Cahyaningrum, 2017). Technology allows for students to be able to submit their work in a digital format for peer response (Kayacan & Razi, 2017). One of the aims for this study was to create a more student-centered environment. The responsibility now falls on the students to become resources for their peers (Bradley & Thouësny, 2017). Digital peer review allows the instructor to have students work online while the instructor uses classroom instruction time for working on
other projects or for working with students individually (Wichadee, 2013). Using a
digital format can potentially set an environment where the peer reviewer works at their
own pace, reading and responding to their partner's work at their convenience (Aydawati,
2019). Other researchers stated that classroom techniques such as online think-pair-share
and flipped classroom techniques promoted active learning in the classroom placing the
classroom in a student-centered environment, (Demirci & Duzenli, 2017). Using
discussion boards, students can post writing samples and have their fellow students offer
feedback (Zainnuri & Cahyaningrum, 2017). Digital peer review is an effective tool for
revising work (Liu & Sadler, 2003), developing critical thinking skills (Deveci, 2018),
increasing self-monitoring of writing (Philippakos, 2017) and facilitating an environment
of collaborative work (Jelderks, 2012).

The biggest advantage of using digital peer review is the versatility in which it
can be conducted in the classroom. Classrooms can use social media (Hong, Mongillo, &
Wilder, 2011), learning management systems (Zainnuri & Cahyaningrum, 2017),
gamification (Lan et al., 2018), word processing programs (Liu & Sadler, 2003), and
other online programs to help foster student needs. When thinking of the best instrument
for this study, digital peer review was considered due to a number of these factors.
Digital peer review also helps to get feedback to students quickly (Lu & Bol, 2007) and
students typically look at digital peer review as a fun, innovative way to be involved in
writing (Ekholm et al., 2017). Digital peer review creates a student-led classroom where
students oversee not only their learning, but the learning of their peers (Bradley &
Thouësny, 2017). Instituted and implemented in the right way, through scaffolding and
modeling, digital peer review can bring about needed change in writing composition.
Disadvantages of digital peer review in writing. One disadvantage of digital peer review is that some students simply prefer face-to-face peer review over digital peer-review (Jelderks, 2012). Students sometimes miss the social aspect that comes with face-to-face peer-review, and digital peer review can exclude the personal aspect that a traditional peer review provides, (Jelderks, 2012). Garlid (2014) stated that students sometimes enjoy something called "shared writing" (p.49). In shared writing students work with the teacher where students can verbally share their thoughts on writing, and this collaboration allows for the student to work through ideas and struggles while providing a safety net of someone there to help them (Garlid, 2014). Again, Vygotsky's work on collaboration supports the idea that a community working together in the classroom is often preferred by students in reading and writing (Villamil & De Guerrero, 1998).

Digital peer review does not always provide significant improvement in peer feedback skills as opposed to traditional peer review (Liu & Sadler, 2003, Miller & Olthouse, 2013) and technology is not always the key factor in success (Wichadee, 2013). In a study on the effectiveness and affectiveness of peer review conducted in electronic versus traditional modes, researchers Jun Liu and Randall W. Sadler (2003) found that the feedback offered online was not as effective as the comments given traditionally. Furthermore, the feedback given by the traditional group was taken into consideration more often than the feedback given by the online group (Liu & Sadler, 2003). Liu and Sadler (2013) attribute this to the fact that students in the electronic group made initial comments in Microsoft Word, followed by discussion of the second draft in a multi-user object-oriented (MOO) platform, and the chatroom format gave very little focused
feedback to help students further revise their work (Liu & Sadler, 2003). Researchers Miller and Olthouse (2013) also found ineffective online feedback to be a challenge in their study. The study found "that only 34.4% of the online peer comments led to critical thinking" (Miller & Olthouse, 2013, p.77). Miller and Olthouse (2013) also found that students tended to focus on lower-order feedback such as correcting grammar rather than feedback that would lead to more analysis of their writing (Miller & Olthouse, 2013).

A final disadvantage in digital peer feedback is that it can take longer to enter comments and use the editing tools of Microsoft Word and Google Docs (Liu & Sadler, 2003). In Liu and Sadler's (2003) study, students stated that it took much longer for them to complete the feedback process due to having to find the file, insert comments, and use the editing tools, whereas with the traditional process students only needed to write the comments on the individual's paper. The practice of digital peer feedback is still developing, and there is no overwhelming agreement that peer review in a digital state is superior to traditional peer review (Razi, 2016). The researcher acknowledged that for this study digital peer review may not be a success for all students and may move students farther from obtaining a positive outlook on peer review. It was important to consider these disadvantages when implementing the intervention to minimize negative experiences.

**Influences of Digital Peer Review on Student Attitudes**

A student's attitude toward writing can be attributed to many different variables. These can be family, firsthand experiences, personal characteristics, and education (Bulut, 2017). Student attitudes are directly correlated to their writing achievement (Bulut, 2017). For this study, one of the aims was to look at how attitudes in writing can be affected by digital peer review. One way to better understand how to change or
influence a student's negative attitude toward writing is to look at what factors contribute to that disposition and what can educators do to help influence a more positive attitude toward writing (Bulut, 2017). This section aims to examine all that attributes to the attitude of a student toward writing, whether positive or negative, as well as how self-efficacy plays a role in a student's attitude. More importantly, examining previous studies that have looked to improve student attitudes toward writing will be important as educators put in place effective instruction in writing curriculum. Student attitudes play a key role in their success and looking at manners in which instructors have been successful is a goal for this study. This section includes: a) the definition of student attitudes, b) what factors affect student attitudes, and c) current studies to help improve student attitudes, specifically in writing.

**Definition of Student Attitudes**

For this study, student attitudes are defined as how a student judges an object or experience which includes affective, cognitive, and physical components (Ekholm, Zumbrunn & DeBusk-Lane, 2017). Defining student attitudes are important for this study in an effort to find what attributes to both positive and negative attitudes toward writing.

**Factors Affecting Student Attitudes**

A student's writing attitude cannot be directly observed, but there can be suggestions made from observing students during writing (Altunkaya & Topuzkanamis, 2018). In other words, attitude is not a behavior to observe, but is rather the way in which one reacts to a given situation (Altunkaya & Topuzkanamis, 2018). Attitude represents likes and dislikes (Ekholm et al., 2017). For this study, student attitudes will
be defined as how a student judges an object or experience which includes affective, cognitive, and physical components (Ekholm et al., 2017).

Many factors affect student attitudes in writing. The most common factors are cognitive, affective, and behavioral (Bulut, 2017; Ekholm et al., 2017). The attitude of a student stems from their assessment of object, people, or events. After evaluation, the student either has a positive or negative attitude toward the object, person, or event (Bulut, 2017). Understanding the cognitive, affective, and behavioral factors of student attitudes can help to better understand these attitudes as well as help us to help change student attitudes from negative to positive (Altunkaya & Topuzkanamis, 2018; Ekholm et al., 2017). The following section will explore (a) cognitive factors, (b) affective factors, and (c) behavioral factors in student attitude and how they affect student attitude toward writing.

**Cognitive factors.** When examining writing, obtaining the very best out of students depends heavily on their cognitive abilities as well as the support they get from teachers, parents, and classmates (Altunkaya & Topuzkanamis, 2018). When writing, there are many information processing factors that go into the planning, developing, and refining of writing, including spelling, handwriting, text generation, working memory, task schema, and problem solving (McCutchen, 2006). All of these, among others, work together when students plan, edit, and revise their work (Daiute, 1986).

Researchers note that scaffolding, as well as being organized with the content, is very important to cognitively changing student attitudes toward writing (Kim, Watson, & Watson, 2016; Lee, 2018; Chaktsiris & Southworth, 2019). In the planning stages, younger students do not tend to spend a lot of time planning for their writing assignment,
whereas older students tend to spend much larger amounts of time planning for their audience and deciding the tone they should use for their writing (McCutchen, 2006; Lee, 2018). This was important to note for this study since some students are a grade level above others. Also, some students possess writing skills that are more advanced than their peers. Researchers Bereiter & Scardamalia (1987) found in their study that when they gave 10-year-old students an assignment to make notes during the planning stage, they wrote more of a first draft, whereas older students wrote down ideas to use to cultivate their writing (McCutchen, 2006). Scaffolding older students with younger students, or students with more experience in writing composition, could help younger students to see the importance of creating a plan to gather their ideas and create better writing composition. The researcher took this into consideration when forming peer review partners in this study.

When revising, young writers typically do not make advanced revisions to their writing like older students, focusing on superficial changes such as spelling or punctuation (Daiute, 1986). Research has shown that young students need guidance and strategies when learning how to properly revise work (Daiute, 1986; Lee, 2018). As Piaget's cognitive-development theory states, children go through different stages of learning and use their environment, including the teacher and classmates, to help build upon their schema (Powell & Kalina, 2009). Researchers note that children often have difficulty reflecting on their writing, therefore having someone show them how to revise and reflect would be beneficial (Daiute, 1986). Even when students possess all the cognitive knowledge they can, this is not an indication of active and accurate writing.
skills (Altunkaya & Topazkanamis, 2018). Continuing to build upon those skills through practice is what will be most beneficial.

**Affective factors.** Affective factors that contribute to student attitudes include mood and emotion (Heddy, Danielson, Graham, & Sinatra, 2016). Attitudes align with moods and tend to be long-lasting (Ekholm et al., 2017). Rosenberg (1998) closely studied affect and introduced the three levels of affect (Graham, Berninger, & Fan, 2007). The first level is the traits that make up the personality of the person. The second level are moods that can be long-lasting, but fleeting, affective states. This means that moods fluctuate throughout our day, but last longer than emotion (Rosenberg, 1998). The third level is affective states that are short-lived emotions which pertain to a specific situation (Graham et al., 2007). These states can change as individuals plan a task, completes the task, or reflect upon a task and has an impact on the types of strategies students use during the writing process (Graham et al., 2007).

Gregoire (2003) proposed the idea of the cognitive-affective model (Heddy et al., 2016). This model supports the idea that emotions can impact conceptual change. When change happens, what happens after (Heddy et al., 2016)? When a student learns a new concept, their attitude can be heavily impacted by the experience itself. Influencing a student's level of interaction are when motivation and affect work together (Heddy et al., 2016). Individuals are more likely to show an emotional change when a conceptual change has occurred (Heddy et al., 2016). These emotional changes can be viewed as negative or positive (Graham et al., 2007). For this study, writing attitude surveys and participant interviews were collected to see if the intervention made an impact on student attitudes.
It is accepted by the research community that a person can have a positive attitude toward something, but negative emotions tied to it (Heddy et al., 2016). For example, a student can hold a positive attitude toward story writing but can despise writing a narrative. Discrete events, such as a writing assignment, can trigger emotional responses. These reactions become less emotional over time, but attitudes can be more deeply rooted to an experience or even something abstract. These responses can be brought up on demand as they are stored in long-term memory (Ekholm et al., 2017). Desirable educational outcomes have been associated with positive affective states. However, in searching for these desirable outcomes, not all students respond favorably to positive action techniques. Actions such as relaxation techniques could have students respond in a way that results in no action (Ekholm et al., 2017). Negative effects can lead to inflexible and less adaptive strategies for students whereas positive affects lead to more creativity and being receptive to other forms of cognitive engagement (Graham et al., 2007). Educators must know what positively affects their students and how these desirable outcomes can become reality for students. For this study, surveys and attitudes gave insight into the moods and attitudes attached to writing both before and after implementation of digital peer review.

**Behavioral factors.** Behavioral factors are ways a student conducts themselves when content is introduced (Altunkaya & Topazkanamis, 2018). Self-efficacy in writing can directly influence a student's behavior (Schunk & Zimmerman, 2007). This may in turn influence what they choose to write about, the effort they put into their writing, or persistence to have quality work (Schunk & Zimmerman, 2007). To learn a student's true behavior, the student should be placed in a situation where they are slightly
uncomfortable and then observe how the student reacts as they are moved towards the desired outcome (Kim et al., 2016). An example of this in writing would be to have a Kindergarten student who has learned to write letters move towards writing words with the letters. The student is probably comfortable with writing the letters, but less comfortable in using them to form words. This seems to be the most reliable strategy in assessing a student's attitude toward something. This study was situated in digital peer review, a new experience for all students. How they behave toward this new situation will reveal much about their attitude, as well as their self-efficacy. One of the ways to shift attitudes positively is to create an active learning environment. The idea in an active learning environment is to shift the learner away from their negative attitude toward the targeted attitude and to judge their behaviors after doing so (Kim et al., 2016). Active learning creates a more social environment in the classroom since students are interacting with classmates. Schunk & Zimmerman (2007) believed that social environment also contributed to behavior. Receiving encouraging feedback is another way to have students negotiate their negative feelings toward writing and possibly change their attitude (Schunk & Zimmerman, 2007). In receiving positive feedback, student behaviors could shift from passiveness to being more active and from indecisiveness to confidence. This in turn would bring about more positive behaviors when writing. As previously stated, to learn how attitudes changed in this study, surveys and interviews were implemented to give the researcher an idea of what was effective and ineffective.

**Self-efficacy**

Self-efficacy is how a person feels about themselves. A student determines their own self-worth and makes a judgement of what they can and cannot do. A student will
also make a judgement of how successful they will be (Bulut, 2017; Altunkaya & Topuzkanamus, 2018). Student surveys in this study helped to determine student self-efficacy before and after the intervention. Another important part of self-efficacy is how a student feels they can organize the activities needed to be completed to be successful (Altunkaya & Topuzkanamus, 2018). Some things that affect a student's self-efficacy in writing are their own writing experiences, how they view their own writing skills, and finally how their families, friends, and teachers influence them in writing.

Social Cognitive Theory emphasizes the role of self-efficacy in motivation and behavior (Ekholm et al., 2017). Theorized by Albert Bandura, Social Cognitive Theory says that humans are not only influenced solely by their environment, yet, they are also not sufferers of internal impulses. In other words, humans make choices on their own according to what they are feeling on the inside (internal stimuli) and the environment in which they inhabit (external stimuli) (Rendahl, 2010; Ekholm et al., 2017). Social Cognitive Theory assumes that achievements are based on interactions between behaviors, personal factors, and environmental conditions (Bulut, 2017). Motivation and behavior seem to be important factors in student attitude and would need to be explored in this study.

Self-efficacy also plays a key role in student attitudes (Bulut, 2017). Students attach emotion to their work which plays a key role in their attitude towards that piece of work or to that subject all together (Driscoll & Powell, 2016). Writing heavily influences self-efficacy as students are usually writing about a personal experience, relating a personal experience to a writing assignment, or may have a hard time connecting to the subject they are writing about. Participant interviews in this study gave vital information
in how students view themselves as writers and how attitude toward writing is attached to past success.

Like self-efficacy, student disposition is the way a student feels about their work. In one study, researchers studied middle school students and wanted to see how much disposition influenced writing anxiety (Berk & Unal, 2016). The researchers found that disposition does play a key role in writing anxiety. Students that have a disposition of not being a good writer tend to have higher writing anxiety (Berk & Unal, 2016). This was important to explore in this study. Some studies focus on how students view themselves as a writer, or their writer identity. Some students feel less confident when left on their own to work versus working with a partner or group (Zoch, Adams-Budde, Langston-Demott, 2016). Allowing students to have a voice in their writing is important and allows for self-expression (Zumbrunn, Ekholm, Stringer, McKnight, & DeBusk, 2017).

**Research on Student Attitudes After Peer Review in Writing**

The effect of peer review on student attitudes is a topic that is continuously researched. Peer review has been found to increase self-confidence in students due to students working with their peers to improve their writing (Zainnuri & Cahyaningrum, 2017). Students often find value in peer review because they rely on their partner's experiences to help them make corrections to their work (Lin & Yang, 2011). In some research studies, such as Aydawati, et al.'s (2019) study on the effects of digital peer review, researchers have found that peer review has helped increase student writing performance. While reviewing their partner's work, peer review allows students to compare their own work with that of their partner's and allows them to reflect on the
areas which need improvement (Haro et al., 2019). For this study, studying self-reflection as a means of improving their own work was vital.

Peer review can also be conducted in small groups of collaboration. Franco & Unrath's (2015) study revealed how the use of writing groups helped improve student attitudes toward writing. Although the participants were a bit reluctant at first, their attitudes toward writing began to improve as they met with their groups. The participants were able to feel more of an ownership in their work and felt more competent in their writing, (Franco & Unrath, 2015). Wichadee (2013) found that collaboration improved motivation in writing for students. Whether conducted in pairs or in groups, peer review has shown to be impactful.

**Chapter Summary**

The way teachers have instructed writing has evolved over the years. From teacher-centered classrooms (Hairston, 1982) to more student-centered focused classrooms, writing instruction has changed as more is learned about students. The key to this evolution is the understanding of theories such as cognitive processing theory (Flower & Hayes, 1981) and constructivism. These theories help instructors learn not only how a student takes in new knowledge, but how they process that knowledge and continue to build their schema in the environment in which they work and play (Andrews & Smith, 2011).

Writing has been an area of weakness for students (Carter & Harper, 2013). Over time, studies have shown a decline in student composition writing (Carter & Harper, 2013; Gold, 2005). Whether it be mechanics, spelling, or the structure of the writing itself, instructors need to understand what is causing this decline. For the participants in this study, they are beginning their long journey of being evaluated in writing. Looking
for new ways to introduce writing activities to students is one way to help our students to become better writers. Educators are looking for innovative ways to introduce technology in their classroom, and they do not have to look far. Districts are filled with highly skilled, technology savvy instructors willing to help their colleagues. District-level professional development on how to implement technology in the classroom is conducted across the U.S., especially in rural areas (Blanchard, 2016). Districts should take the opportunity to shine the spotlight on some of their best instructors to help those willing to employ new ideas of pedagogy.

Using digital tools in writing instruction can be an innovative way to get students composing better writing samples, as well as creating more positive attitudes towards writing. For this study, looking at what impacts student attitude gave insight into how best to approach writing strategies where peers work together. As Vygotsky states in his social constructivist theory, students need to work in communities to build knowledge (Andrews & Smith, 2011). By working in communities, many students see improvement in their writing and enjoy working with their peers (Wichadee, 2013). Digital peer review builds confidence in writers (Zainnuri & Cahyaningrum, 2017) as well as creates community in the classroom (Andrews & Smith, 2011).

Writing is an essential skill. Moving from a system of traditional, pencil-paper, teacher-centered type of instruction to a digital, more student-centered environment may not be easy, but with the help of digital peer review, the change can be a smoother transition than some instructors may think. Our students deserve the chance to be the best writers they can be, and it is up to the instructor to find the tools that facilitate the best type of instruction for students. Digital peer review brings more to the classroom
than just a new way to instruct. Using digital peer review nurtures a classroom that allows students to be the center of their learning and to take with them skills that far outreach a well-composed essay. Using the literature and research to guide the implementation of this intervention, the aim of this study is to expose the ways in which digital peer review impacts writing composition as well as student attitudes toward writing.
CHAPTER 3

METHOD

The purpose of this action research was to explore the use of digital peer review on student writing composition and student attitudes toward writing for third and fourth grade gifted and talented students at Little Rural Primary School. Through data collection and analysis, the researcher wished to answer the following research questions:

1) How and to what extent does digital peer review impact writing composition for third and fourth grade gifted and talented students?

2) How and to what extent does the use of digital peer review impact the third and fourth grade gifted and talented students' attitudes toward writing?

Research Design

Action research is defined by Mertler (2017) “as any systematic inquiry conducted by teachers, administrators, counselors, or others with a vested interest in the teaching and learning process or environment for the purpose of gathering information about how their particular schools operate, how they teach, and how their students learn” (p. 4). Action research differs from traditional research in that it allows the researcher to solve "immediate and pressing day-to-day problems" (McKernan, 1988, p. 173). Traditional styles of research use terms and frameworks that are foreign to teacher researchers (Kizilcik & Daloglu, 2018; Vaughan, Boerum, & Whitehead, 2018). In action research, the teacher is the researcher, or active participant in the study, therefore
the teacher can be in the middle of the study and reflect as the study moves along (Mertler, 2019). Action research has been chosen to both address the problem within the setting as well as find a solution (Vaughan et al., 2018). Being a part of the study is important since it will lead to real change within the setting.

The reason action research was chosen was that it provides a more reflective position. It allows educators to reflect on their own instructional practices, students, and assessments to think of ways to improve these practices (Mertler, 2019). Teachers feel that reflection in their planning and execution of information are important components of growth, and action research provides this type of reflection for educators (Chaudary & Imran, 2012). It was important in this study to reflect on the instructional practices that were being conducted because past practices were failing students. As a result, the researcher was able to see results within the environment in which the study was situated and was able to discern what was effective (Mertler, 2019). In other words, the researcher was able to see what methods were successful and unsuccessful in this study.

There were many benefits to using action research for this research study and for it to be established in my school district. First, our school wants to move forward in our endeavors with technology and have more blended classrooms. Innovative pedagogy using technology in an effective manner is one way to accomplish this. Using digital peer review helps students become stronger, more confident writers (Lin & Yang, 2011). One of the aims of this study was to find out the impact of digital peer review on writing composition. An additional benefit to conducting this research was that the study shed light on many of the issues students were having in writing. It also shed light on the way students learn best such as peer reviewing with partners face-to-face versus working from
a digital platform. A final way this action research was helpful was that it showed how improvement in writing attitudes can be the foundation for improved writing composition. Knowing that student attitudes can be shaped by innovative instruction is important for instructors because it motivates them to want to continue to improve their pedagogy.

The researcher’s role in this study was that of participant observer (Mertler, 2017). By conducting a study in my own classroom, I recognized that some biases may come into play during this study, potentially during the collecting, analyzing, and reporting of data. By recognizing this before beginning the study begins, a study can be designed that has fair practices for all involved (Creswell, 2014).

For this research, the convergent parallel mixed methods design was used (Creswell, 2014). This design implements both quantitative and qualitative methods during the same phase of the research. This gave equal importance to both methods and did not give one set of data more weight, or importance, than the other. To answer both research questions, qualitative and quantitative data was collected independently and given the same value during analysis. This was accomplished by collecting qualitative data through student interviews and Microsoft Word comments and collecting quantitative data through assessments and student surveys. Qualitative data gave information about how the participants felt about the use of digital peer review when writing as well as information on any positive or negative changes to their attitudes toward writing. The Microsoft Word comments yielded insight on what areas of writing composition participants feel comfortable giving feedback. Quantitative data provided evidence of any changes in student writing after the interventions took place. After all
data was collected and analyzed, both qualitative and quantitative data was used to better answer the research questions (Stentz, Clark, & Matkin, 2012).

A mixed methods approach allows a researcher to use and access all data collection tools (Prefume et al., 2015). With a mixed methods approach, I was able to see if digital peer review had a significant impact on writing composition skills as well as student attitudes toward writing. Using just one method would have limited the research to only examine if the intervention had an impact on composition skills or student attitudes and would not have answered both research questions. After collecting and analyzing qualitative and quantitative data in this study, I had a more well-rounded idea of how digital peer review impacted student composition and student attitudes toward writing.

In conclusion, our schools are becoming more and more involved in digital technology and blended learning. This action research is just one more way I can help provide information to my district on how best to incorporate digital technology into the writing curriculum. I believe that with this information, my district can make informed decisions about the classrooms at the elementary level as well as other levels of education.

**Setting**

The study took place at Little Rural Primary School, a rural elementary school in South Carolina. This site was selected because I am a teacher at the research site and have recognized that writing curriculum and instruction is a problem worth examining. I also see that student attitudes toward writing typically are negative. Each year, students come to my classroom underprepared for the rigors of writing in fourth grade. To begin
In my classroom, I have tried several writing strategies. No one strategy has seemed to work better than another. I believe that one of the issues with my students is a lack of interest in writing. If you ask students what their favorite subject is, their answers are usually one of four: reading, math, science, or social studies. The answer is rarely writing. The few times the answer is writing, it is usually because they like to write narratives. I believe that technology could possibly change this because of an experience in my own classroom. Several years ago, I gave students a reading assignment in social studies. Then, I asked them to use their laptops and go to my blog on our class webpage to answer a question about the text. They were so eager to use their laptops and write in a new way. They enjoyed the experience and enjoyed my feedback on their posts. Since this experience, I have been intrigued at how technology could help make writing a more positive experience for students. When students can find joy in writing, their attitudes are more positive.

In my classroom, students use their laptops daily to access websites and online tools such as Nearpod, IXL website, and Classworks. Our district also uses the learning management system Schoology to complete assigned work by the instructor. Students...
have access to Microsoft Office 365, a Microsoft Office product which includes online versions of PowerPoint, Word, Outlook, and Excel. Students also use their laptops to conduct research on various topics across subject areas and to create reports or other presentations about their research. Another piece of technology I use in my classroom is my Promethean Board. I use this tool to display websites and provide instruction to my students. Technology plays a key role in my classroom and I look for new, innovative ways for my classroom to reflect blended learning. In this action research study, it was important to see the effect of digital peer review on student writing composition and student attitudes toward writing.

**Participants**

My classroom is comprised of 14 fourth grade students and 3 third grade students. Out of seventeen students, seven are identified as gifted in accordance to the South Carolina gifted and talented student identification guidelines (Gifted and Talented Assessment Program for Grade 2, n.d.). These students were identified using their scores from the Cognitive Abilities Test (CogAt) and the Iowa Test of Basic Skills (ITBS). Both tests are nationally normed tests and have been approved by the South Carolina State Department of Education for gifted and talented testing. With the counsel of the principal, the other ten students in this class were picked by their previous year teachers according to their performance in the classroom. These students were also identified using past report card grades and the Measures of Academic Progress (MAP Suite, n.d.) test, a nationally identified formative assessment that measures growth throughout the year (MAP Suite, n.d.). In my gifted classroom, I use the state academic standards to guide the creation of my curriculum and instruction. During the year we conduct novel
studies, learn Greek and Latin stems using Caesar's English, analyze literature using Jacob's Ladder, and participate in William and Mary literature unit studies. For writing, we write letters to pen pals, complete research projects, write narratives, write poetry, and complete text dependent analysis assignments.

The participants of this study were seventeen students in grades three (n=3) and four (n=14) who were a part of my general education classroom. The class was made of male (n=9) and female (n=8) students. Of the participants in the study, 70% (n=12) identified as Caucasian, 12% (n=2) Black/White, 12% (n=2) Hispanic, and 6% (n=1) Asian. One student was identified as being on the autism spectrum. Two students had 504 plans. 504 plans, derived from section 504 of the Rehabilitation Act of 1973, states that individuals with disabilities cannot be discriminated against or denied benefits due to their disability (United States Department of Labor, n.d.). In education, this means schools must provide a free and appropriate education to all students, regardless of their disability (Center for Parent Information & Resources, 2010). A 504 plan can be requested by a teacher, physician, or parent and is usually created without extensive testing. Teachers, parents, and special education district personnel work together to contribute to the plan and decide which accommodations will best meet the needs of the student. All the students in this study get along despite the difference in age and are independent workers. Students did a lot of work individually while I worked with others in small group, or individually, as needed.

As for selecting participants for the intervention, purposive sampling was used since I used the students that are in my class and the problem of poor writing performance is situated within my classroom. Purposive sampling relies on the
judgement of the researcher. Since the problem has been identified in my own classroom, the participants are those that are within my school, where the problem exists. Purposive sampling also allows the researcher to focus on the interest of a group (Laerd Research, 2012). In purposive sampling, the researcher identifies criteria for selection (Mertler, 2019). Using my students as the sample, I was able to better understand the problem and implement my intervention in the most successful way.

Table 3.1 shows a table of pseudonyms and demographics used for the participants in this study. Prior to the study, a consent form was sent home with all possible participants (See Appendix A). The consent form was signed by all parents of the participants, as well as the participants in the study. Assent forms were also signed by participants, as shown in Appendix B.

**Intervention**

The intervention for this research study was to implement digital peer review during the construction of writing composition. Participants used the digital tools Microsoft Word Online and OneDrive to help them during the revising and publishing stages of composition writing. All participants had access to the software and a laptop during this study. The implementation of this intervention consisted of (1) instruction of how to use the digital tools, (2) instruction on peer review (3) the pairing of students for peer review, and (4) two writing assignments. The flow chart in Figure 3.1 shows the process of the intervention.
Flow Chart for Implementation of Digital Peer Review

![Flow Chart](image)

**Figure 3.1.** Flow chart of Implementation Process

**Table 3.1 Pseudonyms and Demographics of Participants**

<table>
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<th>Pseudonym</th>
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<th>Gender</th>
<th>Age</th>
<th>Grade</th>
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**Justification for the Intervention**

Using digital tools in the classroom is a way to not only provide another platform for instruction, but also a way to give students more opportunities to expand on their work. Digital tools provide a different way in which students can generate new ideas (Kilpatrick, Dostal, Saulsburry, Wolbers, & Graham, 2014). Digital tools also provide a way for students to publish their work in a non-traditional way (Kilpatrick et al., 2014). I used digital tools as an intervention to broaden student experience with writing.

With a class full of students, teachers often find that their biggest enemy is time. Teachers are unable to provide the type of feedback they desire to students, therefore providing peer feedback can provide the feedback to students that they may miss from the instructor (Branham, 2012). Another reason for using digital peer review is that it provides critical thinking to both the writer and reviewer (Philippakos, 2017). In peer review, the reviewer provides critiques to their partner's work, and transfers this knowledge to develop the skills to revise their own work (Slomp, 2012).

**Instruction of Digital Tools.**

Students were given instruction on the digital tools we used during the intervention. We spent five class periods working on how to use Microsoft Word Online and OneDrive. Microsoft Word is a word processing program that students used to create their first and final drafts. Participants used the online version of Microsoft Word to make the digital peer review process uncomplicated. OneDrive allows users to upload documents to a cloud space. To instruct students on how to use these tools, I spent the
beginning of class, approximately 10 to 15 minutes, modeling how to use a specific tool. For example, I demonstrated to students how to access Microsoft Word Online on their laptops, and then I showed them some of the basics such as how to change the font type and size, how to change the spacing, and how to save their document. I showed them what all they needed to create basic documents. Next, I gave them an assignment where they practiced those skills for about 20 minutes, as seen in Figure 3.2. Participants were able to practice changing their fonts for size, color, or type and practice typing sentences.

For the final 15 minutes, I showed students how to pull up OneDrive on their laptops. On the Promethean board, I walked students through how to access OneDrive. I directed students to the district website where they logged into their email. Once they logged in, I showed students how to access OneDrive through the app launcher. I also showed students where to locate their folder and upload their documents. Last, I showed students the folders in which they placed their saved documents.

Figure 3.2. Example of Student Practicing in Microsoft Word

The second day, we reviewed the work of the previous day, and practiced with Microsoft Word Online as well as sharing their document (See Figure 3.3). I gave
students a short assignment to create a Microsoft document and had them share the
document with another classmate. Students also practiced opening the documents that
were shared with them.

*Figure 3.3. Student Working in Microsoft Word Online.*

The third, fourth and fifth days were days for practicing and getting comfortable
with their digital tools. I gave participants an assignment for each day. Figure 3.4
demonstrates how participants practiced creating a compositional piece, and then shared
with a partner. Students practiced signing into their district email to access Microsoft
Word Online and OneDrive. The role of the teacher was to assist students as they
practice and provided feedback.
Figure 3.4. Practice Assignment for Participants.

**Implementation of the Intervention.**

Over 6 weeks there was a total of two assignments during the implementation phase of the study, which took place. The first assignment and assessment were completed in two weeks and the second assignment and assessment was completed over three weeks. All assignments were Text Dependent Analysis (TDA) assignments. The TDA assignments are like the South Carolina state assessment given to third and fourth grade students. TDA is a writing assignment where students use a reading passage to answer an essay question which centers around the analysis of the text. Students used evidence from the passage to reinforce their answer.

**Teaching Peer Review**

Students were instructed on the correct way in which to review their partner's writing. This instruction was implemented during the second writing assignment. I first showed students the peer review checklist (Appendix C). We went over this together and
we created an anchor chart to display in the classroom. Figure 3.5 shows an anchor chart we made to hang in the classroom to use as a resource. Participants were given a best practices checklist (Appendix D). This checklist listed the do's and don’ts of peer review. I also directed students to the writing rubric used in the study (Appendix E). Students were told that this is what will be used to grade their assignments and assessments, so they should use the rubric as a resource when reviewing their partner's work.

I also modeled for students how to review their partner's work by displaying a practice paragraph about elephants which had errors in the paragraph. I showed participants how to insert a comment into the document. Figure 3.6 shows the same document I created and the practice the participants did with that document.

Figure 3.5. Anchor Chart Made for the Classroom.

I also modeled for students how to review their partner's work by displaying a practice paragraph about elephants which had errors in the paragraph. I showed participants how to insert a comment into the document. Figure 3.6 shows the same document I created and the practice the participants did with that document.
Figure 3.6. Practice with Commenting.

The next day, we opened those documents and continued practicing the addition of comments as well as reciprocating commenting on our partner's comments (Figure 3.7). The goal of modeling was threefold: (1) show participants how to use the feature, (2) to show them what areas of writing they should be reviewing, and (3) the benefit and importance of giving feedback to their partner.

Figure 3.7. Participant Comments and Reciprocating Comments.
Pairing of Students

A preassessment was given at the beginning of the study to compare student scores before and after the intervention. After the preassessment, students were placed into heterogenous partnerships according to their scores. Students with low scores were paired with students with higher scores. The rationale for this is that students who score higher will already have some of the skills necessary for the writing process as well the ability to demonstrate good reviewing skills when critiquing their partner's work (Bonney, 2018). Vygotsky also believed in having a student scaffold with more experienced or knowledgeable students for improvement in their skill development (McKinley, 2015). The skills used by participants to give feedback to their partner will transfer with the completion of each assignment (Slomp, 2012). While critiquing work, the higher students learned innovative ways to review their partner's work as well as applied these reflections on their own work. As the researcher and instructor for this study, my aim was for both partners to be able to use innovative digital tools to review their partner's work, to improve their peer review skills, and to reflect on their own work while peer reviewing.

Several South Carolina Writing and Communication standards were addressed in this intervention. For each of the assignments, students worked on their narrative writing skills. Students also worked on communicating which areas of their partner's writing needed to be improved or revised. The standards that were addressed in this intervention are listed Appendix F.
Writing Assignment

Students were instructed on what their first TDA assignment would be. As stated before, the assignment addressed South Carolina state writing standards and is in Appendix F. At the beginning of each assignment, participants were given the passage they needed to read to answer the TDA question. Then, students were instructed to begin the pre-writing process. This was up to the individual participant to decide what they wanted to do to prepare for the assignment. For each assignment, participants had a one-hour class period each day to complete their writing assignment. Students had five days to complete writing assignment one and ten days to complete writing assignment two. Participants had three days for each of the assessments. During the intervention, my role was to be of help to participants by guiding them how to help their partners as well as how to use the feedback to improve their own writing. My role was to also keep participants on task and collect their work as it was completed. To achieve this goal, students were given specific instructions each day. A schedule for each assignment is shown in Appendix F.

Students used day one and two to read the assignment and complete any pre-writing activity they needed for the assignment. Prewriting gives students an opportunity to organize their ideas before they write their first draft. Later, they used their pre-writing to write their first draft. On these first two days, I went over the writing rubric with them to show students the expectation for their writing.

To begin the assignment, I gave instruction for the first 10-15 minutes. Instruction covered the expectations for the day. For the first day, the expectation was to read the passage and assignment and get started on any pre-writing. Then, I handed each
participant a copy of the rubric as well as opened the writing rubric on the Promethean board. We went over each area of the writing rubric and discussed what will be expected of their writing as well as how they would be scored. Students were told that they may use the rubric to guide them as they complete their writing assignment.

Next, students were given the reading passage for their first assignment. The first reading passage was *Act Your Age* which can be found in Appendix G (Archer, 2015).

Assignment one is shown in Figure 3.8.

![Assignment](image)

**Directions:** After reading *Act Your Age*, please answer the Text Dependent Question (TDA) below. Make sure that you give evidence from the passage to support your answer.

**Text Dependent Question:**

In the story *Act Your Age*, Frances was repeatedly told to act her age by different people. This made her feel sad and like she couldn't do some of the things she enjoyed doing. Was there a time when you had to stop doing something or playing with something you liked because someone made you feel that you were too old for that? Compare your situation with Frances. How are they similar and different? Use the text to provide evidence.

*Figure 3.8. Narrative Writing Assignment One*

All reading passages were collected from the website www.commonlit.com. According to their website, CommonLit "delivers high-quality, free instructional materials to support literacy development for students in grades 3-12" (CommonLit Staff, 2019). CommonLit allows educators to search for reading passages by reading level, themes, or genres and provides comprehension questions to go along with each passage. Permission was given to the researcher by the CommonLit Director of Strategic Partnerships, Agnes Malantinszky, to use the passages in this action research and can be
found in Appendix H. What made CommonLit an attractive choice for this study was the diverse, research-based collection of passages and resources.

For the first assignment in this study, students wrote a narrative essay. In narrative writing, the writer wishes to share real or imagined experiences to help the reader understand a lesson or gain awareness of an idea or event. In this assignment, participants were instructed to read *Act Your Age* and compare the problem of the main character in the passage to a similar experience of their own. Participants were also instructed to support their answer with details from the passage, an important part of the analysis process.

To begin the assignment, students used the passage to highlight or underline any information they felt would help them answer the question. Students read the passage and the TDA question and began planning their writing composition. With 5 minutes left in day one, I brought students back together and briefly reviewed with them what was expected of them for day two. On day two, we began with a quick 10-15-minute review of what we accomplished on the first day, as well as what the goal for day two was. Next, we looked at the TDA question together, and I went over the question with them to make sure participants did not have any questions or concerns about the question. It was important for participants to understand the question to find the information they needed to answer it. Next, students moved to conclude their work on their pre-writing for the day. The goal for day two was to have all pre-writing completed so that participants would be able to begin writing the first draft the following day. Students worked the entire class period, one hour, on their pre-writing. While students were working, I moved around the room to help students and made sure they were on task and understanding the
assignment. As students finished, I checked with them that they were ready to begin writing the next day (day three). With 5 minutes left in the class period, I reviewed with them the expectations for day three.

On the third and fourth day, students used their pre-writing to guide them in writing a first draft of their composition. To begin class, I did a 10-15-minute review with students on how to use Microsoft Word. I also reminded participants to use their pre-writing to assist them in writing their first draft. The students then used the remainder of the period, 40 minutes, to write their first draft.

Students began by taking out their pre-writing from the day before. Next, they began a new document in Microsoft Word Online. Students typed their first draft in Microsoft Word Online. In the last ten minutes of the lesson, I discussed with students some of the things I observed, as well as discussed, the expectations for the next day. I then reminded them that they would continue writing tomorrow. When day four began, I used the first five minutes to remind students of our goals for today which were to be finished with the first draft. Students used the next 45 minutes to finish their first draft. The last 10 minutes were used to save documents, review what we accomplished that day and review the agenda for the following day.

On the fifth day, which was the last day of the first assignment, students began the day with reviewing what we had completed thus far. Next, we reviewed revising and editing their work and the importance of implementing this into their current work. This took around 10 minutes to do since most students were familiar with the revision and editing process in writing. I reminded participants that the use of their rubric would be a good resource when they are revising and editing. Participants then opened their
documents and began revising and editing the writing they had worked on all week.

Students had 40 minutes to work on editing and revising their work. With 10 minutes left, I had students stop and save their writing. Students then uploaded or shared this writing with the teacher to the appropriate folder in OneDrive as seen in Figure 3.9.

![Figure 3.9. Writing Assignment Folder in OneDrive.](image)

**Postassessment 1**

After the first assignment, participants were given writing postassessment one. Participants had three days to complete the postassessment. For this postassessment, students read *The Icicle Symphony* by Julia Gousseva (Appendix I) and answered the TDA question found below in Figure 3.10. In this postassessment, students demonstrated their skills in the analysis of text and narrative writing composition. To evaluate the postassessment, I used the writing rubric referred to previously. Most participants took the full three days to complete the postassessment, but for the few early finishers, these
participants were encouraged to review their work carefully and then were given journal
topics to complete.

| Name __________________________________________ | Date ____________________ |
| Assessment | |

**Directions:** After reading *The Icicle Symphony*, please answer the Text Dependent Question (TDA) below. Make sure that you give evidence from the passage to support your answer.

**Text Dependent Question:**
In the story, *The Icicle Symphony*, Marina's uncle always teaches her to appreciate and find the beauty in nature. When was a time that your family or friends encouraged you to see something in a different way? Describe the situation and how they got you to see things in a different way. You may compare your story to Marina's. Make sure you cite evidence to support your writing.

*Figure 3.10. Postassessment One*

**Assignment 2**

After the first assignment and assessment were complete and turned in, participants were given the next assignment to begin. The same process used in the first assignment was used in the second assignment. The only exception for this assignment was the implementation of digital peer review. The passage for this assignment, *Seeking a Hidden Hive* by Jocelyn Rish, can be found in Appendix J. Students were given the passage to read on the first day as well as the TDA question. The TDA question for assignment two can be found in Figure 3.11. For the second assignment, students worked on their skills in narrative writing, same as in assignment one. In the second assignment, students read the nonfiction passage *Seeking a Hidden Hive* and discussed a time when they were brave. Participants were asked to support their analysis from the TDA with details and evidence from the passage.
Figure 3.11. Narrative Writing Assignment Two with Peer Review

Days one through four followed the same format as assignment one except for the implementation of digital peer review. On day four of the writing assignment, students did not revise their own work. Instead, they saved their completed work and uploaded this document to an assigned folder. On day five, students were introduced to peer review. I began by discussing with them what peer review is and why peer review is important. We then discussed expectations of peer review and created an anchor chart, which was posted in the classroom. The poster can be seen in Figure 3.5. I also gave them the peer review checklist and went over the checklist with the class (Appendix C). Next, I turned their attention to Microsoft Word Online and demonstrated how to add comments in Microsoft Word Online (See Figure 3.12). After giving this instruction, and modeling for them, participants practiced on a document of their own. Students accessed this document in OneDrive. Participants spent 20 minutes practicing adding comments on their document in Microsoft Word Online, as seen Figure 3.13. We then practiced saving this document and uploading it to the appropriate folder. After uploading, we
closed this day with a review of the rubric and peer review checklist and went over the agenda and expectations for the next class.

![Figure 3.12. Teacher Modeling of Comments.](image)

On day six, participants shared their writing with their partner and began to peer review their partner's work. Participants used OneDrive to share their work with their partner. Participants were reminded of criteria when reviewing their partner's work and to use the peer review checklist to help them. The rest of the class period was spent reviewing their partner's work and using the review checklist to find ways for their partner to improve their work. Participants inserted comments on the document where revisions were needed (See Figure 3.14). Participants had the entire class period to review their partner's work.
On day seven, we began by taking the first 5 minutes to look at a document that had been reviewed and revised (See Figure 3.15). On the Promethean board, I showed students how to take the comments that were made on their documents and use those to make their writing even stronger. For the remainder of the time, participants reviewed...
the critiques of their partner and applied the feedback to their writing composition. With
ten minutes left in the class period, I gave a five-minute warning for students to finish up
what they were doing. With the final five minutes, I stopped students and had them save
their work. I reminded them that tomorrow, day eight, they will upload their documents
into OneDrive for a second review by their partner.

Figure 3.15. Revised Copy Example.

On day eight, I began class by having all participants open their OneDrive
account. I then modeled on the board how to upload their saved, revised document to the
correct folder on OneDrive (See Figure 3.16). Participants uploaded their document to
OneDrive and downloaded their partner's work. Participants spent the remainder of the
class period reviewing their partner's work, making sure they revised areas pointed out to
them initially and adding anything that may need to be further addressed. With five
minutes left in class, participants saved their document and uploaded the document to the
proper folder. I reminded participants that tomorrow, day 9, they will begin writing their
final drafts and will need to make final revisions that their partner has suggested.
On day nine, I began by having participants open OneDrive and downloading their revised document. I reminded participants that they would have today and tomorrow to write their final draft and that they needed to take careful consideration to the revisions their partner had suggested. Participants worked on their documents for the remainder of the class period. With five minutes left in class, I gave a warning that time was almost up. At the end of the class period, I had students save their work for the day.

To begin day ten, I briefly reminded participants that this is their last day to write their final draft. Participants worked the remainder of the class period on their writing composition. The remaining five minutes of class were used to save documents and upload them into the correct folder in OneDrive.
Postassessment 2

The second assessment was completed after the second assignment. Unlike the second assignment, the second assessment did not have students peer review each other's work. In the second assessment, students read *Too Many Vegetables* by Karen DelleCava and answered a TDA question that had participants relate to the main character in the passage. The passage can be found in Appendix K and Figure 3.17 shows the assessment question. The format of the first postassessment was followed in the second postassessment. Both postassessment results were compared to the preassessment during the analysis phase of the study and the analysis is discussed further in chapter 4.

![Figure 3.17. Postassessment Two](image)

**Data Collection**

Data for this action research was collected using a mixed methods approach. There were several types of data collected during this intervention: (a) preassessment and postassessment, (b) participant interviews, (c) participant surveys, and (d) student artifacts. Quantitative data was gathered through the preassessment and postassessment
as well as the student surveys. Qualitative data was gathered through the interviews and student artifacts. Each of these instruments is described in the following table. Table 3.2 provides an overview of research questions and the data sources.

Table 3.2: *Research Questions and Data Sources*

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1: How and to what extent does the digital peer review impact writing composition for third and fourth grade gifted and talented students?</td>
<td>Participant interviews</td>
</tr>
<tr>
<td></td>
<td>Participant surveys</td>
</tr>
<tr>
<td></td>
<td>Student artifacts</td>
</tr>
<tr>
<td></td>
<td>Pre and Postassessments</td>
</tr>
<tr>
<td>RQ2: How and to what extent does digital peer review impact the third and fourth grade gifted and talented students’ attitudes toward writing?</td>
<td>Participant interviews</td>
</tr>
<tr>
<td></td>
<td>Participant surveys</td>
</tr>
</tbody>
</table>

**Preassessment**

To see if an impact was made by the intervention on participant revising and editing of writing assignments, a preassessment, was given. Participants had one hour to complete the assessment. The assessment was a TDA question, as explained in earlier sections of this chapter. For the assessment, participants were given a passage to read and a TDA question that went with the passage. The assessment was created by the researcher using the passages to help in the creation of the TDA questions.

The preassessment was given before the intervention. For the preassessment, the reading passage, *Reading to Max* by Heather Klassen, was given to participants. This passage came from the website CommonLit and can be found in Appendix L. In this passage, a young boy reads to a cat every Saturday at an animal shelter. As he reads each week, he notices that his reading skills become better. In the end, his neighbor adopts the cat so that Max can continue reading to the cat, furthering his love of reading, and
strengthening his reading skills. This passage has a Lexile Level of 580, which equates to mid-year third grade. Lexile ranges are judged on complexity of text and "represents the demand of texts that students should be reading to be ready for college and career ready by the end of grade 12" (MetaMetrics Inc, 2019).

The preassessment was researcher-created as well and can be found in Appendix L. Participants use the passage to answer the TDA question, which is dependent upon their analysis of the text. Participants were asked to answer a question that is related to the passage and to also cite evidence when answering the question and providing their analysis. Participants had one hour to complete the assessment. The objectives covered in this assessment came from the South Carolina English Language Arts (ELA) standards. With the preassessment, participants read the reading passage and TDA question, analyzed the passage, and used evidence from the passage to support their answer to the TDA question. Students in South Carolina are regularly asked by their classroom teachers to perform these skills. The assessments given before and after the intervention address these skills and will be used to collect data on how well students are able to perform these tasks before and after the intervention.

The assessment was reviewed by one third grade English Language Arts teacher as well as one middle school English Language Arts teacher to check the validity of the preassessment and appropriateness of the assessment language to third and fourth graders. The reviewers looked for content validity within the assessment (Mertler, 2017).

To score the assessment, I used a teacher created rubric (Appendix E). I used the SC Ready Scoring Guidelines for Text-Dependent Analysis Rubric to guide me in creating my own rubric. I chose to model my rubric after the state testing rubric to reflect
the same expectations the state has for student writing. The rubric focused on the ability of the student to effectively analyze the text and their skills as a writer. This effectiveness was broken down into several areas of writing such as: (1) addressing the task itself and analysis, (2) organization of the paper, (3) explicit and implicit information from the text to help support their answer, (4) key details from the text, (5) use of transition words, and (6) correct spelling, grammar, and punctuation. A maximum of 100 points could be earned by the participants, and the lowest possible score was 25 points. To ensure the reliability of the scoring, inter-rater reliability was calculated.

Postassessments

Students completed a postassessment after the completion of each assignment. Both postassessments were created by the researcher and were reviewed by colleagues in the same manner as the preassessment. The first postassessment came after students wrote their first narrative and the second assessment came after students used digital peer review to write their second narrative assignment. The purpose of these assessments was to see if the intervention had an impact on the students' writing. Postassessments were scored with the Writing Scoring Rubric (Appendix E). The highest a participant could make was a 100 and the lowest was a 25. Results of the postassessments were compared to the preassessment and descriptive statistics were used to discuss the findings. These findings are further discussed in chapter 4 of this study.

Inter-rater reliability was used to show the reliability of the researcher's results. The strategy used to find inter-rater reliability for the preassessment was used with the postassessments. Reliability was found with each postassessment and those findings are reported in chapter 4.
Participant Interviews

The main purpose for holding participant interviews was to gather data on the participants' experience with digital peer review. Interviews with participants gave insight as to the attitudes toward the use of digital peer review and if participants felt using digital peer review was effective. Also, participants discussed openly with the researcher their feelings about digital peer review and using digital peer review to help them improve their own writing. Participant interviews were the keyhole in which to really see the effects of the intervention on student writing, as well as if the intervention influenced student attitude toward writing.

When the intervention portion of the study was complete, I conducted eight semi-structured interviews, where I asked the participants questions about their thoughts on the intervention (Wengraf, 2001). The reason I chose a semi-structured interview was because I wanted to ask participants specific questions and then provide follow-up questions to build upon their initial answers. A copy of the interview questions is provided in Appendix M. The interviews were held in the classroom where there were no distractions or interruptions and where participants felt most comfortable. I took notes during the interview as well as recorded the interview so that I had these during the transcribing of the transcripts. The protocol for all research questions is displayed in Table 3.3 and 3.4.

Each interview was approximately 20-30 minutes. As stated before, there were specific questions asked and then follow-up questions after responses from the participants. Semi structured interviews ask base questions and have the option for follow-up after participant response (Mertler, 2019). Due to the age of these participants
(most participants were between 8 and 10 years old) it was important for me to have follow-up questions to get a perspective of how the intervention affected the participants.

Some participants may have found it difficult to express how they felt about the intervention, so the follow-up questions helped to reveal their feelings. Creating questions that are "brief, clear, and worded in simple language", work best for elementary students, (Mertler, p. 346, 2019).

Table 3.3 Protocol for Research Question One

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Interview questions aligned with RQ1</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1: How does digital peer review impact writing composition for third and fourth grade gifted and talented students?</td>
<td>1. In what ways did you feel using peer review helped you?</td>
</tr>
<tr>
<td></td>
<td>a. Can you provide an example of how peer review helped you?</td>
</tr>
<tr>
<td></td>
<td>b. Can you describe the way it helped you as opposed to how you used to write?</td>
</tr>
<tr>
<td></td>
<td>2. In what ways did peer review help improve the writing of your partner?</td>
</tr>
<tr>
<td></td>
<td>a. Can you provide an example of how peer review improved your partner's work?</td>
</tr>
<tr>
<td></td>
<td>3. How did you feel about reviewing someone else's work?</td>
</tr>
<tr>
<td></td>
<td>a. Can you provide a reason of why you feel this way?</td>
</tr>
<tr>
<td></td>
<td>b. Can you tell how you will use peer review for future assignments?</td>
</tr>
<tr>
<td></td>
<td>4. How likely are you to use digital peer review in the future?</td>
</tr>
<tr>
<td></td>
<td>a. Can you give a reason as to why you would/would not use it?</td>
</tr>
<tr>
<td></td>
<td>b. Would you suggest using digital peer review to a friend?</td>
</tr>
</tbody>
</table>
Table 3.4 Protocol for Research Question Two

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Interview questions aligned with RQ2</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ2: How does digital peer review impact the third and fourth grade gifted and</td>
<td>1. What were your feelings toward writing before we began this study?</td>
</tr>
<tr>
<td>talented students’ attitudes toward writing?</td>
<td>a. What made you feel this way about writing?</td>
</tr>
<tr>
<td></td>
<td>2. How has using Microsoft Word and OneDrive changed your attitude toward writing?</td>
</tr>
<tr>
<td></td>
<td>a. Speak about why your feelings changed/stayed the same?</td>
</tr>
<tr>
<td></td>
<td>3. How did reviewing your partner's work make you enjoy writing more or less?</td>
</tr>
<tr>
<td></td>
<td>a. What were the things you liked about digital peer review?</td>
</tr>
<tr>
<td></td>
<td>b. How has your attitude toward writing changed due to digital peer review?</td>
</tr>
<tr>
<td></td>
<td>4. Overall, in what ways would you say the use of digital tools in writing makes you feel more confident about your own writing?</td>
</tr>
<tr>
<td></td>
<td>a. Can you give some examples of how you felt toward writing before and after writing?</td>
</tr>
</tbody>
</table>

Participant Surveys

When participants do not view themselves as good writers, they often do not want to write in the classroom (Kear, Coffman, McKenna, & Ambrosio, 2000). It was important in this study to find ways to help incompetent writers feel more confident in their writing. This is the reason I used a writing attitude survey to capture student attitudes before and after the intervention.
The Writing Attitude Survey (Kear et al., 2000) found in Appendix N, was used to assess student attitudes toward the use of digital peer review. This quantitative data helped me to gain knowledge about student attitudes in the hopes of developing instructional practices that will help benefit myself and my participants. The purpose of using an attitude survey in this study was to see whether the intervention had an impact on the participants' attitudes toward writing.

The writing attitude survey I used was developed by Kear et al. (2000). The survey was given before and after the intervention to see if the intervention of digital peer review had an impact on student attitudes toward writing. Before distributing the survey, purpose of the survey was explained to the participants. I then gave the survey forms to all students. Next, on the Promethean Board, I had a copy of a blank survey. I pointed out the different pictures of Garfield, which were used to gage student attitude, and explain what each picture meant, shown in Figure 3.18. I told students that they would read the statements and then choose which Garfield mood reflects how they felt about that statement. I also advised students to circle their answers on the page. While students were completing the survey, I monitored students. As students finished, an envelope was used to place their survey in. This same procedure was used when administering the post-survey which was given a few days after the completion of the intervention.
The survey had 28 questions that focused on how participants felt about writing in different manners, how they felt about communicating through writing, about writing for personal reasons, about writing for fun, about becoming a better writer, and about writing in school. I used a Likert scale to score all responses. The scoring was as follows: (4) very happy, (3) for somewhat happy, (2) for somewhat upset, and (1) upset. The scoring sheet can be found in Appendix O.

As for the validity and reliability of the survey instrument, Kear et al. (2000) sought out ways to insure the validity and reliability of the instrument. At each grade level, Cronbach's alpha was calculated for all genders, as well as for the entire sample. The researchers reported that reliability coefficients "ranged from .85 to .93" (Kear et al., 2000, p.14). Reliability for the total sample in their study was .88 showing that reliability was quite a strength in their study. As for validity, Kear et al. (2000) went through extensive practices to ensure the content of the instrument was valid. This included many different trials for the survey and revising and reducing the number of questions, as well as using consulting sources. Also, five different analyses were done on this survey. The researchers took caution to ensure the validity of this instrument by distributing this
survey to a wide range of schools as well as having participants take the survey several times, allowing the researchers to improve the questions.

**Participant Artifacts**

To capture the true impact of this intervention, participant artifacts were included in the data collection. I collected all of participant writing for each assignment along with the participant scores of these assignments. I collected multiple examples of participant peer review for each assignment. Another artifact I collected was the participant Microsoft Word comments on the second assignment. The comments show the interaction between students and how the intervention progressed through the weeks of digital peer review. These comments will be displayed as figures throughout the study, but especially in chapters four and five.

The use of student artifacts is often used in classrooms to give students examples of above average work. Student artifacts bring the study to life and gives insight into what is happening in the classroom (Mertler, 2017). For this study, collection and analysis of Microsoft Word comments provided examples of how digital peer review helped students improve their writing. The hope for this study was that the use of student artifacts showcased the work of the participants and is useful to future researchers.

**Data Analysis**

Four sources of data were collected and analyzed in this studied: (1) pre and post participant surveys, (2) pre and postassessments, (3) participant interviews, and (4) student artifacts. The qualitative and quantitative data were collected simultaneously and analyzed in this study. The quantitative and qualitative data was then compared to decide
if the analysis of both sets of data supported each other. Table 3.5 represents the alignment of research questions, data collection, and the data analysis method.

Table 3.5 Research Questions, Data Collection, and Methods of Analysis

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Data Sources</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1: How and to what extent does the digital peer review impact writing composition for third and fourth grade gifted and talented students?</td>
<td>• Participant interviews</td>
<td>• Inductive analysis</td>
</tr>
<tr>
<td></td>
<td>• Participant surveys</td>
<td>• Descriptive statistics</td>
</tr>
<tr>
<td></td>
<td>• Student artifacts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Pre and Postassessments</td>
<td></td>
</tr>
<tr>
<td>RQ2: How and to what extent does digital peer review impact the third and fourth grade gifted and talented students' attitudes toward writing?</td>
<td>• Participant interviews</td>
<td>• Inductive analysis</td>
</tr>
<tr>
<td></td>
<td>• Participant surveys</td>
<td>• Descriptive statistics</td>
</tr>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

Qualitative Data Analysis

To analyze the qualitative data, inductive analysis was used. Inductive analysis is the method of taking large quantities of information and reducing it to organized themes to present findings in a clear manner (Mertler, 2017). Inductive analysis was used to find common themes among participant interviews and participant Microsoft Word comments. After interviewing participants, I transcribed the interviews and began the process of coding and using those codes to create categories that subsumed the codes. After two cycles of coding, I used the categories to see what themes emerged from the data (Mertler, 2017). I used these themes to answer both research questions which can be found in the findings section of chapter five. Further detail about the coding process used in this study is discussed in chapter four.
Quantitative Data Analysis

For quantitative data analysis, descriptive statistics (mean and standard deviation) were used to analyze the changes on students' assessment scores and students' attitudes toward writing after the intervention. Descriptive statistics “simplify, summarize, and organize relatively large amounts of numerical data” (Mertler, 2017, p. 178). To assess whether the intervention, digital peer review, had a significant impact on students' attitudes toward writing, a paired sample \( t \)-test was run. Paired sample \( t \)-test are used when a group is measured two times in the study, typically with a pre and post-test (Mertler, 2019). Alpha level of .05 was used for the paired sample \( t \)-test.

In addition to descriptive statistics, inferential statistics was used when analyzing the student writing attitude surveys. A repeated-measures \( t \)-test was used to compare the pre-survey results to the post-survey results. This test was appropriate for this study since participants took the survey before and after the intervention. The \( p \)-value was obtained and compared to a set alpha level of .05. Both descriptive and inferential statistics for this study are further examined in chapter four.

Procedures and Timeline

This study was conducted in four phases. The first, Phase 1: Participant Preparation, focused on the set up of the study, identified the participants in the study, provided discussion of the study with participants, and gained consent. Second, Phase 2: Data Collection, was the data collection of data during the study. Phase 3: Data Analysis, consisted of the analysis of data and description of the findings. Last, Phase 4: Communication of the Study, gave an opportunity for member checking as well as sharing the results of the study with all stakeholders. Table 3.6 gives a timeline of the study.
Phase 1: Participant Preparation

In the first week of the study, I met with participants and parents to discuss the purpose of the study as well as to gain consent from parents and students to participate in the study. I further discussed the study with potential participants so that they fully understood what their role would be. After I gained consent, students took the preassessment, which was created by the researcher.

Students were introduced to the tools that were used in this study. We spent five days getting comfortable with these tools and understanding where to locate the tools. Students needed to become proficient with logging into the tools such as Microsoft Online and OneDrive, so practice was needed. Next, I provided instruction on the writing process. This included instruction on prewriting (gathering ideas), drafting ("first write"), revising, and publishing (final product). After getting students comfortable with the online tools and reviewing the writing process, we spent some time discussing peer review and what their role is as a peer reviewer would be. We practiced peer review together with pre-made documents and worked on the process of peer review. I also modeled peer review for them and had them practice on their own.
Table 3.6 *Timeline of Participant Identification, Data Collection, Data Analysis, and Communication*

<table>
<thead>
<tr>
<th>Phase</th>
<th>Expectation</th>
<th>Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1: Participant Preparation</td>
<td>1. Identify Participants</td>
<td>3 Weeks</td>
</tr>
<tr>
<td></td>
<td>2. Contact Participants</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Consent/assent forms</td>
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<td></td>
<td>4. Implement writing Pre-assessment</td>
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<tr>
<td></td>
<td>5. Whole-group instruction of how to use digital tools such as Microsoft Word</td>
<td></td>
</tr>
<tr>
<td></td>
<td>and Microsoft OneDrive.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Instruction on peer-review.</td>
<td></td>
</tr>
<tr>
<td>Phase 2: Data Collection</td>
<td>1. Implement a writing assignment every 10 days.</td>
<td>9 Weeks</td>
</tr>
<tr>
<td></td>
<td>2. Collect student artifacts after each assignment.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Conduct Interviews</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Administer Surveys</td>
<td></td>
</tr>
<tr>
<td>Phase 3: Data Analysis</td>
<td>1. Inductive Analysis</td>
<td>4 Weeks</td>
</tr>
<tr>
<td></td>
<td>2. Survey Analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Descriptive Statistics</td>
<td></td>
</tr>
<tr>
<td>Phase 4: Communication of the Study</td>
<td>1. Present results to participants.</td>
<td>3 Weeks</td>
</tr>
<tr>
<td></td>
<td>2. Member checking.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Present results to other stakeholders including parents, teachers,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>principal, and district personnel.</td>
<td></td>
</tr>
</tbody>
</table>
Phase 2: Data Collection

In Phase 2, I began the implementation of the use of digital peer review in writing. There was a total of two assignments during this phase and the intervention took place over 8 weeks. Each assignment was a TDA assignment. TDA is a writing assignment where students use a reading passage to answer an essay question using evidence from the passage that they read. For the first assignment, students were given a writing assignment. The classroom period for writing was one hour each day. To begin, students used day one to read the assignment and create their prewriting portion of their assignment. The second and third day, students used their pre-writing to write a first draft of their composition. By the fourth day, participants began revising their work. Day 5 was a day for participants to revise and edit their work and turn in their final draft. After completion of the first assignment, participants began their first writing postassessment. Students had three days to read their assigned passage, organize their ideas, and answer the TDA question.

For the second assignment, students followed the same format as assignment one, days one through three. On day 4, students worked on finalizing their first draft and then uploaded their document to the correct folder. On day 5, the teacher and students reviewed what was expected of them for peer review. We also reviewed how to access the commenting section of Microsoft Word Online and how to make comments on their partner's work. On day 6 and 7, students reviewed the critiques of their partner and revised their own writing. Students turned in their writing to a folder on OneDrive for me to review. This stage of the intervention repeated in the same manner in Phase 2 for days 8, 9, and 10. After the second assignment was complete, students completed the
second assessment. The same process as the first assessment was used in this assessment. I graded the assessment and compared the results to the preassessment, as well as the first assessment, to see if the intervention of digital peer review made an impact. Next, a post survey was conducted to measure participant attitudes after the intervention. After the post-survey, eight participant interviews were conducted.

**Phase 3: Data Analysis**

Phase 3 of the study was the analysis stage of the study. First, the results of the preassessment, and both postassessments, were analyzed and results recorded. Next, the interviews that were collected in phase 2 were analyzed using deductive analysis. I transcribed these interviews and then began to code the responses of the student. Also, all comments made in Microsoft Word Online were coded and analyzed. I looked for recurring themes in the student interviews and in the comments. For the survey results, a table was used to present the information. Finally, descriptive statistics was used to describe the survey data.

**Phase 4: Communication of the Study**

During the final phase of my study, I will be communicating my findings to many different groups. The first is to communicate my findings to the University of South Carolina doctoral committee. I then plan to have a presentation of the data collected and analyzed for the participants, teachers, parents, and district personnel. If the opportunity arises, I plan to share my findings with other teachers, schools, and districts that may benefit from the findings of this study. I also plan to share my study at writing and technology conferences if given the opportunity.
Rigor and Trustworthiness

The quality of research must be ensured by the rigor and trustworthiness of the data. Rigor in research is the quality of research, and trustworthiness refers to the accuracy and believability of a study (Mertler, 2017). For the research study, several strategies were used to ensure the rigor and trustworthiness of the study and data findings. These strategies are to incorporate triangulation, to be engaged in the study site, to utilize member checking, to employ peer debriefing, and to provide a thick, rich description of the findings.

Triangulation

Triangulation “reflects an attempt to secure an in-depth understanding of the phenomenon in question” (Denzin, 2011, p. 82). In the study, I collected data using a variety of mixed-methods strategies including pre and postassessment, interviews with participants, participant surveys, and collected participant artifacts. Using a variety of data sources will ensure trustworthiness of the data collected because the data will work together to either support the observational data or oppose it (Denzin, 2011). I began by comparing the participant scores of the assessments to the participant Microsoft Word comments. I then compared these results to the participant interviews, to determine an impact on participant writing composition. To determine impact on student attitude, I was able to compare findings from participant surveys to Microsoft Word comments as well as participant interviews. Bringing the sources of quantitative and qualitative data together helped to validate the research conducted in the study.
Prolonged Exposure to the Research Site

For this study, being immersed in the research site was important to see how the participants were interacting with the intervention. Establishing a relationship with the participants gives a better understanding of the educational experience (Mertler, 2019). As the researcher, I was able to see the immediate reactions of students including when they felt successful and when they felt frustrated. Being at the research site each day helped me to understand the participants, the culture of the school, and the culture of the classroom.

Member Checking

Member checking was another useful strategy to use to make sure participant voices were being accurately represented in the study. The first phase of member checking was conducted after interviewing students. Due to the age of these students, I decided it was best to go over the interview with them. I handed them a copy to look over and we discussed the interview together and their answers. The second phase of member checking I asked participants for their opinion about the data and their opinion on the findings. The findings were presented to them by me. Due to COVID-19, I was unable to conduct this part of member checking in person and had to email students a video I created of the findings. I asked them to email me their responses and if they agreed or disagreed. Member checking gave the study validity in that the participants agreed that these findings were how they felt digital peer review affected their writing composition and attitudes. This helped to embody the opinions of my participants and added to the descriptive validity of the data (Nastasi, 2005). I also used member checking by keeping notes of my process during the analysis of the data (Mertler, 2019). Member
checking helps to make sure the data is represented well by the participants, while detailed descriptions and notes helps to reflect on the study while engaging in the analysis process. Analytical memos helped to think through the participant interviews and gather initial thoughts. Engaging triangulation methods helps to further validate researcher findings (Mertler, 2019).

**Peer Debriefing**

Along with member checking, I used the strategy of peer debriefing. Peer debriefing allows the researcher to use knowledgeable peers who are not a stakeholder in the research and can help the researcher see areas of improvement or enhancement. My dissertation chair helped me to review the research and critiquing the “processes of data collection, analysis, and interpretation” (Mertler, 2017, p. 143). Her critiques helped me further expand the analysis of the data collection and validate the findings. I also used the help of my writing partner as well as another colleague in my school district. While creating codes, categories, and themes from the participant interview data, as well as the Microsoft Word feedback between partners, I met with my dissertation advisor Dr. Arslan-Ari as well as writing partners. Meeting at this point of the analysis process helped me to work through any uncertainties and helped verify what I was seeing emerge from the data. Peer debriefing also added to the credibility of this research study. Using this strategy helps the researcher to not only limit bias, but also expand their thinking and encourage reflection (Hail, Hurst, & Camp, 2011).

**Thick, Rich Description of Findings**

A final strategy I employed was to use thick, rich description to describe the findings of the study. This strategy was implemented into different sections of the study
such as the settings, themes, or findings of the study. Notes about observations and interviews were added as a reflection of the study and used to give a rich description of the study. Examples of participant work, such as snapshots from the Microsoft Word documents, as well as quotes from the participant interviews provided a shared experience and offered different perspectives of the participants. Using this strategy helped to give the reader a sense of the study within the setting. This information also adds to the descriptive validity of the study (Creswell, 2014).

**Plan for Sharing and Communicating Findings**

At the conclusion of my research, I plan to share the findings with participants, parents, colleagues, and district level personnel. First, I plan to share my findings with participants and parents. I plan to hold a meeting just for these stakeholders in which I can share the data collected and analyzed, as well as the themes that arose from interviews and Microsoft Word comments. I plan to use a slide show to present this information. I also plan to present to my colleagues, as well as district personnel, and present my findings at this meeting. I hope to promote discussion on further implementation of digital peer review in writing in the future. My goal is to find ways for our district to create professional learning opportunities (PLO) to promote more discussion on writing and the implementation of digital peer review in writing to increase student achievement and promote positive attitudes toward writing.

On a more formal level, I planned to present the findings of my study to my dissertation committee at the University of South Carolina. This will be a time to reflect on the intervention and the findings. If the opportunity arises, a chance to share my research and findings at local conferences, such as the Upstate Writing Conference Project or the Upstate Technology Conference, would be great ways to continue the
discussion for ways in which educators can implement technology in writing instruction.

When presenting information to any of these audiences, I plan to keep participant information anonymous by using pseudonyms, as recommended by Mertler (2017), and to divulge to my audiences that pseudonyms are being used.
CHAPTER 4
FINDINGS AND INTERPRETATIONS

The purpose of this action research was to explore the use of digital peer review on student writing composition and attitudes toward writing for third and fourth grade gifted and talented students at Little Rural Primary School. The study expected to provide insight into the use of digital peer review in writing and to provide alternative means of instruction in the writing discipline. The collection of data for this study was guided by two research questions: (1) How and to what extent does the digital peer review impact writing composition for third and fourth grade gifted and talented students? and (2) How and to what extent does digital peer review impact the third and fourth grade gifted and talented students' attitudes toward writing? This chapter presents the analysis and findings of the collected data which includes pre and postassessments, participant surveys, participant interviews, and participant Microsoft Word comments. This chapter will include (a) quantitative analysis and (b) qualitative analysis.

Quantitative Findings

For this study, two methods were used to collect quantitative data. The first method was a preassessment and two postassessments, both created by the researcher in this study. To create the preassessment and both postassessments, I used passages from the CommonLit website (www.commonlit.com) to create text dependent questions. All the assessments consisted of participants reading the passage and answering the text dependent question using the passages. Participants took the preassessment at the
The second method used to collect quantitative data was to administer a survey before and after the intervention. The survey, which measured student attitudes in writing, was titled "Writing Attitude Survey" (Kear et al., 2000). Participants answered the 28 questions using a scale which consisted of pictures of Garfield and measured their agreement with each statement (Figure 3.18).

**Pre and Postassessments**

Participants were given a preassessment to gain a baseline writing score for each participant before any interventions began. Participants read a grade-level appropriate passage and then answered a teacher-created text dependent analysis question. The preassessment was graded by the researcher with a writing rubric created specifically for this study. The rubric was created by the researcher using the South Carolina Text Dependent Analysis state rubric as a reference (South Carolina Department of Education, 2020). I also had a colleague who has taught third and fourth grade to review the rubric for me. The results were recorded in Microsoft Excel. Before the digital peer intervention, participants were instructed in writing by the researcher and completed the first writing assignment without the digital peer review intervention. After participants completed the first assignment, they were given postassessment 1. Next, the intervention of digital peer review was implemented. Following instruction on using the intervention, along with instruction on using the digital tools, participants completed an assignment using the intervention. Participants used the digital tools to complete assignment 2. After the completion of assignment 2, participants completed the final postassessment.
The following section will discuss the descriptive statistics of the pre and postassessments.

**Inter-rater reliability.** To ensure the reliability of the analysis of the three assessments, inter-rater reliability estimate was assessed with a random sample of five participants. Another rater independently scored the assessments of those students by using the rubric. Second rater was a fellow teacher who has over 15 years' experience in the classroom, 5 of those years in the third and fourth grade. Also, to eliminate the rater bias in the pre and postassessments, the raters were blind to the assessments of the students. Intra-class correlation coefficient was calculated to assess the degree of agreement among the raters for each assessment. Intra-class correlation was the most effective technique to find the rater mean differences in each sample and to show reliability of the instrument. Intra-class correlation coefficient was .86 for preassessment, .87 for postassessment 1 and .89 for postassessment 2. All these values indicated the high agreement among the raters.

**Descriptive statistics.** The mean and standard deviation of preassessment and postassessments are found below in Table 4.1. Mean for preassessment was 50.88 ($SD=14.48$), for postassessment 1 was 47.88 ($SD=18.26$), and for postassessment 2 was 50.41 ($SD=18$). When looking individually at student assessments, 29% of participant scores improved on postassessment one and 71% of participant scores stayed the same or were lower than their preassessment score. The data analysis shows that instruction alone, with no peer review did not improving the writing composition of the participants. After analyzing the data for postassessment two, 53% of participant scores improved or stayed the same as the preassessment. This analysis shows that the peer review made an
impact on the writing composition skills of some of the participants. More about these findings will be explained in chapter five.

Table 4.1 *Descriptive Statistics of Pre- and Post-assessment*

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preassessment</td>
<td>17</td>
<td>50.88</td>
<td>14.48</td>
</tr>
<tr>
<td>Postassessment 1</td>
<td>17</td>
<td>47.88</td>
<td>18.26</td>
</tr>
<tr>
<td>Postassessment 2</td>
<td>17</td>
<td>50.41</td>
<td>18</td>
</tr>
</tbody>
</table>

**Writing Attitude Survey Results**

The Knudson Writing Attitude Survey (Kear et al., 2000) was distributed to all 17 participants in the study to compare student attitudes toward writing before and after the intervention. The survey was distributed before the study began and then again upon completion of the study to compare student attitudes toward writing before and after the intervention. The participants were asked to rate 28 questions about their feelings related to writing. Participants matched their rating according to the mood represented by the picture of Garfield. The survey used a four-point Likert type scale ranging from 1 to 4, where a rating of 4 meant completely agree (very happy Garfield), 3 meant somewhat agree (somewhat happy Garfield), 2 meant somewhat disagree (somewhat upset Garfield), and 1 meant completely agree (completely upset Garfield). A Cronbach's alpha coefficient of 0.92 (N=17) was obtained for the presurvey and 0.95 (N=17) for the postsurvey. The coefficients found for the pre and postsurvey "indicate the overall internal consistency reliability of the measure is 'good' based on the number of items and the mean inter-item correlations" (Dunsmuir, 2013, p. 9). The following sections will
discuss the (a) descriptive statistics and (b) inferential statistics of the writing survey analysis.

**Descriptive statistics.** Table 4.2 represents the descriptive statistics for Writing Attitude Survey given before and after the intervention. Students' writing attitude scores were higher in post-survey \( (M=81.41, SD=18.42) \) than their presurvey scores \( (M=76.82, SD=15.89) \).

<table>
<thead>
<tr>
<th></th>
<th>( M )</th>
<th>( SD )</th>
<th>( t )</th>
<th>( df )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-survey</td>
<td>76.82</td>
<td>15.89</td>
<td>-2.26</td>
<td>16</td>
<td>&lt;.038</td>
</tr>
<tr>
<td>Post-survey</td>
<td>81.41</td>
<td>18.42</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note:* \( N=17 \)

**Inferential Statistics.** A paired sample t-test was conducted to determine whether there is a significant difference between the students' writing attitude pre-survey and post-survey scores. To check the normality assumption, Shapiro-Wilk normality test was conducted. The results of the normality tests showed that the difference between the pre-survey and post-survey was normally distributed, \( p = .398 \). Paired sample \( t \)-test revealed that there was a significant difference in the survey results of the pre-survey \( (M=76.82, SD=15.89) \) and the post-survey \( (M=81.41, SD=18.42) \), \( t(17) = 2.26, p = .038 \). The results of the paired sample \( t \)-test are shown in Table 4.2. Cohen's effect size value \( (d=.59) \) suggested a moderate practical significance effect of the intervention on students' attitudes toward writing.
Qualitative Findings

For the qualitative portion of this study, eight participant interviews and all participant peer review comments in Microsoft Word were used to collect qualitative data. Verbatim transcripts of the interviews were created after the implementation. Interview questions focused on areas in which students felt digital peer review benefited, or did not benefit, their writing as well as did or did not improve their attitude toward writing. Student comments in Microsoft Word were analyzed as well. Comments were taken from the student Microsoft Word accounts. The analysis of participant interviews and Word comments used a process of inductive analysis.

Participant Interviews

The interviews were conducted with eight participants picked by me. Since I used purposive sampling for this study, since the problem is situated within my own classroom, I used the same method for picking the interviewees. When selecting participants for the interviews, I picked participants that I felt represented the makeup of our classroom as well as students I felt would be comfortable being interviewed. Before interviewing, participants were asked if they would participate in the semi-structured interviews. There were four boys and four girls asked to complete the interviews. Out of the eight, six were in fourth grade and two were in third grade. The interviews took around 30 minutes to complete. These interviews were conducted at Little Rural Primary School. After interviewing all eight participants, I transcribed and began to determine codes within the data. After the first cycle of coding, 127 codes emerged from the data. Table 4.3 quantifies the qualitative data for the participant interview data analysis.
Table 4.3 *Number of Codes from Qualitative Sources*

<table>
<thead>
<tr>
<th>Qualitative Data Source</th>
<th>Number</th>
<th>Total Number of Codes Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview transcripts</td>
<td>8</td>
<td>127</td>
</tr>
<tr>
<td>Microsoft Word comments</td>
<td>17</td>
<td>65</td>
</tr>
<tr>
<td>Totals</td>
<td>25</td>
<td>192</td>
</tr>
</tbody>
</table>

**Word Comments**

Participants used Microsoft Word online to conduct the peer review of their partner's work. Students used the commenting feature to compliment or make suggestions for improvements in their partner's work. This part of the study was conducted over a five day period where participants spent one day reviewing and commenting, one day correcting their own writing, another day commenting on their partner's corrected work, and the last two days making final corrections on their own writing and uploading final products to OneDrive. All 17 participants took part in digital peer review.

I used the in vivo coding method to analyze student Microsoft Word comments. After the first round of coding, 65 codes emerged from the data. Table 4.3 shows the qualitative data of the Microsoft Word comments, showing the richness this qualitative data brings to the study.

After several cycles of coding the qualitative data, the original codes were grouped or even discarded to have rich, descriptive language. The following portions of this section describe the analysis and coding of the qualitative data and presents the findings from the data.
Analysis of Participant Interviews

There were several steps that I took to analyze the participant interviews. The first step was to transcribe the interviews. I used the program Maestra to download and transcribe all eight participant interviews. I compared the transcriptions of each interview to the audio recording of the interview to ensure the accuracy of the transcripts. This helped to ensure the accuracy of the data. After transcribing the interviews, I sat with each participant and had them read over their responses for accuracy and discussed their answers with them. Member checking was an important part of this process as it gave my research the authenticity that was needed for accurate analysis. The next step was to download each transcript to Delve, an online qualitative analysis tool. According to their website, Delve's goal is to help passionate researchers analyze and organize their data in a way that involves less manual labor and frustration for researchers (Delve, 2020). The use of Delve allowed me to analyze individual interviews and the Word comments from the digital peer review.

Before I began to code, I read through every transcript and began to write analytic memos for each transcript. An analytic memo is the process of taking the data and writing notes about what you are seeing emerge from the data (Saldana, 2016). I began with collecting analytic memos about my data because I wanted to get in touch with what the participants were saying. I felt it was important to read each transcript and trace what I felt were the most important parts as well as what message they were trying to convey about their own experience. This portion of my analysis was very helpful in seeing what was positive and negative about the experience, what they took away from the study, and
how it affected their attitude toward writing. Figure 4.1 shows an example of an analytic memo from my analysis.

To begin coding for the participant interviews, I used initial coding. Initial coding is a great place for researchers to start with their coding process because it leads the researcher to areas where the researcher may want to conduct further exploration (Saldana, 2016). Initial coding is provisional because the researcher wants to remain open to finding out more about the data (Charmaz, 2006). I began by using a system of sentence-by-sentence coding where I read each line of the transcripts and coded to fully explore the data (Charmaz, 2006). With initial coding, I was able to find areas within the data that were important to participants and important to the study. Initial coding works in conjunction with other codes such as in vivo coding, the other type of coding used in this study. Figure 4.2 shows an example of initial coding.

![Figure 4.1. Example of an Analytic Memo.](image)
After initial coding, in vivo coding was used to capture the voice of the participants. "In vivo codes help us to preserve participants' meanings of their views and actions in the coding itself" (Charmaz, p. 55, 2006). In vivo coding was chosen because this type of coding allows the researcher to use the words of the participants to create the codes (Saldana, 2016) and to make the study truly about the participants' experience, I felt it was important to use their own words as a guide to code the data. Figure 4.3 shows an example of in vivo coding in the analysis conducted in the online program Delve.

Figure 4.2. Initial Codes in Delve
After conducting initial and in vivo coding, I used code charting to pull together my codes from the participant interviews and decide which codes could be merged and which ones were no longer needed. In code charting, the researcher constructs a chart which allows them to think through the participant's information, look at the codes that were taken from that data, and to find the primary codes for this data. I created a two-column chart where the first column was a summary of the student's interview and the second column was the primary codes I had collected from the initial and in vivo coding process. I used the summary column to write my own interpretations of each participant's interview. This allowed me to focus and read between the questions and answers and understand their responses. This experience with the data also allowed me to decide what codes were important to the study and which codes were no longer needed. Code charting was very helpful in finding the patterns and major codes that were forming out of the data (Saldana, 2016). Figure 4.4 shows an example of the code charting and Table 4.4 displays the 127 codes that emerged after the first cycle of coding. These codes were used to help determine the categories during the second cycle of coding.
Figure 4.4. Code Charting After First Cycle of Coding.

For the second cycle of coding, I chose pattern coding to help find the categories that my codes would best match. In pattern coding, the researcher will take similarly coded passages, group them together, and assign a category that describes all the codes together (Saldana, 2016). For example, when using pattern coding with the participant interviews, I took the codes another perspective, better understand, better writer, better writing, can help others improve, and check someone's work and combined them into one category titled positives of peer review. I grouped these codes together because they showed similar ways in which students felt they benefited positively from the intervention. I used the online tool Delve to help separate the codes into categories. Figure 4.5 shows the category Building Trust and the codes that fall under that category.
Table 4.4 *First Round Codes and In Vivo Codes for Participant Interviews*

<table>
<thead>
<tr>
<th>First Round Codes</th>
<th>In Vivo Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust is built through peer review</td>
<td>Cooperating, fixed everything, giving feedback, arguing, quickly fixed, not listening to partner they helped me make changes to my work, partner fixed work, useful comments, changes from feedback, get along hold partner accountable consequence of ignoring feedback</td>
</tr>
<tr>
<td>Peer review helps to check own writing</td>
<td>Self-reflection, correct own mistakes, made same mistake, go over and check, another perspective, check someone's work, better understand (clarity), remembered my writing, Thought I didn't need a partner, thought about mine, I thought it was all right, Saw in hers fixed mine recheck my work, make writing clearer, reflection checked own work decided to add details to own work</td>
</tr>
<tr>
<td>Grammatical corrections</td>
<td>Comma, capitalizing, misspelling, punctuation, no introduction, transitions</td>
</tr>
<tr>
<td>First Round Codes</td>
<td>In Vivo Codes</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------</td>
</tr>
</tbody>
</table>
| Positives of Peer Review | • homophones  
| | • Typing skills,  
| | • better grades,  
| | • feedback helpful,  
| | • good grades,  
| | • helping others,  
| | • helped partner,  
| | • better writer,  
| | • know what to work on,  
| | • knew what she (partner) needed to work on,  
| | • fun,  
| | • computer makes it fun,  
| | • partner shows mistakes,  
| | • go over work,  
| | • fix mistakes  
| | • helped me  
| | • improve writing  
| | • more readable  
| | • not being mean,  
| | • wanted partner to do well  
| | • partner helps get good grades  
| | • improvement  
| | • more confident  
| | • learn from mistakes  
| | • understand what to do now  
| | • what needs to be added,  
| | • partner's work improved  
| | • I like that we have a partner  
| | • Likes commenting  
| | • recheck work,  
| | • focused,  
| | • easier than the teacher doing it  
| | • spotted our mistakes,  
| | • learn on your own  
| | • zoned in  

| Negatives of Peer Review | • Not do it every day  
| | • Arguing  
| | • Not listening  
| | • Frustrated because partner argues  
| | • not talking to partner,  

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<table>
<thead>
<tr>
<th>First Round Codes</th>
<th>In Vivo Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>• stiff</td>
<td></td>
</tr>
<tr>
<td>• sitting</td>
<td></td>
</tr>
<tr>
<td>• like moving around,</td>
<td></td>
</tr>
<tr>
<td>• Didn't get to talk to each other,</td>
<td></td>
</tr>
<tr>
<td>• harder to explain over messaging,</td>
<td></td>
</tr>
<tr>
<td>• had to go through all the steps over and over</td>
<td></td>
</tr>
</tbody>
</table>

**Attitude toward writing before**

- Before writing was boring,
- before it was complicated,
- excited
- Didn't know a lot of writing,
- Liked before
- Writing personal experiences are fun,
- Didn't like before,
- I kind of hated writing,
- nervous,
- uptight,
- hard to think of ideas,
- before thought it was more complicated
- didn't know if it was right

**Attitude toward writing after**

- Started liking writing,
- like it a little bit more,
- check work and see mistakes,
- checking other's work,
- I can see my mistakes with peer review
- peer review makes writing easier,
- Know how to help myself,
- Started liking writing,
- peer review changed attitude,
- feel better because of partner comments
- partner helps you which makes it easier

**Tools when peer reviewing**

- Rubric
- Spellcheck
- Dictionary
<table>
<thead>
<tr>
<th>First Round Codes</th>
<th>In Vivo Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future use</td>
<td>• Middle school</td>
</tr>
<tr>
<td></td>
<td>• Wants to know if something needs to be fixed,</td>
</tr>
<tr>
<td></td>
<td>• writing important stuff</td>
</tr>
<tr>
<td></td>
<td>• useful when writing essays</td>
</tr>
<tr>
<td></td>
<td>• Use in research</td>
</tr>
<tr>
<td></td>
<td>• meet with laptops,</td>
</tr>
<tr>
<td></td>
<td>• sit beside each other</td>
</tr>
<tr>
<td>Computer use</td>
<td>• Favorite thing was typing,</td>
</tr>
<tr>
<td></td>
<td>• didn't have to use a pencil,</td>
</tr>
<tr>
<td></td>
<td>• I like to type,</td>
</tr>
<tr>
<td></td>
<td>• typing helped finish assignment,</td>
</tr>
<tr>
<td></td>
<td>• easier on computer,</td>
</tr>
<tr>
<td></td>
<td>• peer review on computer,</td>
</tr>
<tr>
<td></td>
<td>• loves working on computer,</td>
</tr>
<tr>
<td></td>
<td>• understand typing better,</td>
</tr>
<tr>
<td></td>
<td>• improve your typing</td>
</tr>
</tbody>
</table>

After working with pattern coding, I used focused coding to continue to refine the codes and create more categories. With focused coding, the researcher looks for the most common codes, as well as codes that are noteworthy, and used these to develop relevant categories (Saldanas, 2016; Charmaz, 2006). I used this type of coding to find trends in the data, frequency of codes, and code similarities. Another reason for using focused coding was to determine the quality of the previous codes already found in previous coding cycles (Charmaz, 2006). An example of focused coding used in the analysis of the participant interviews is found in Figure 4.6.
When I completed the process for creating the codes and categories for the participant interviews, I conducted peer debriefings with both my writing partners as well as my dissertation chair and advisor, Dr. Ismahan Arslan-Ari. My writing partners gave me some ideas for rewording categories and advice about the placement of some codes. One of my writing partners told me to consider the assertions and to add a column for theory, which helped considerably when I wrote this chapter. Dr. Arslan also asked
questions such as "How will you define positives of peer review?" and "When you say 'fun' how will you describe exactly what the participants deemed as fun? and "How does the category use of online features relate to your research questions?" These questions helped me to clarify my thinking with the categories as well redirect codes to be placed where they effectively helped me describe the category. Dr. Arslan-Ari advised on naming of categories such as changing the word negative in one category to drawback. Also, Dr. Arslan-Ari walked me through the renaming of the category Trust is built through peer review to Building trust. Figure 4.7 shows the codes for the category self-reflection creates active learning and represents my process in creating the final codes and categories. It was through these peer debriefings that eight categories emerged: (a) factors that affected student attitudes before peer review, (b) factors that affected student attitudes after peer review, (c) positive contributions of peer review, (d) building trust, (e) drawbacks of peer review, (f) resources used when peer reviewing, (g) use of online features, (h) grammatical corrections, (i) self-reflection as active learning, and (j) future use. My next step was finding the themes that emerged from the qualitative findings.

After working on the suggestions presented to me, I began working on the themes and assertions for the study. I then asked my writing partners to review my work. My writing partner suggested better use of language in my descriptors as well as thinking about how subcategories may fit with multiple themes. After getting feedback and making necessary changes, I came up with four major themes from the interview data. My next step was to meet again with Dr. Arslan-Ari. After a final peer debriefing with Dr. Arslan-Ari, and getting her recommendations, I was able to make changes according to her recommendations such as moving the category drawbacks to the theme Writing.
Experience and because of that change moving Positive Writing Experience to Writing Experience which would better encompass all the experiences of my participants, not just the positive ones. Four major themes emerged from the participant interviews were established. These themes were: (a) Contributions to Attitudes, (b) Writing Experiences, (c) Benefits of Digital Tools, and (d) Improved Writing. Figure 4.8 gives a visual representation for the themes that emerged from the participant interviews.

![Diagram of grammatical corrections]

*Figure 4.6. Focused Coding for Participant Interviews.*
Figure 4.7. Table Created for the Debriefing of Codes and Categories.

The codes factors that affected student attitudes before peer review and factors that affected student attitudes after peer review subsumed Theme 1: Contributions to Attitudes. Both categories represented participant attitudes before and after the intervention. For the research, it was important to find out how participants felt toward writing before the intervention took place. This would give the researcher insight into student disposition as it relates to writing. After the intervention, it was important for the researcher to know what contributed to participants' positive, or negative, response to writing as it related to the intervention. Analysis showed that students responded favorably to digital peer review due to their interactions with their peers and responded negatively due to the lack of personal interaction. Positive contributions of peer review, building trust, and drawbacks of peer review were incorporated to create Theme 2:
Writing Experiences. For this study, the researcher wished to capture the different experiences of participants. After analyzing participant interviews, the researcher found that these three categories gave the best explanation of how participants classified their experience. Participants expressed that they enjoyed the ways in which digital peer review helped them improve their writing compositions, they trusted their partner to give them helpful feedback, and also that some experiences were not as positive, such as a case of partners not listening to their peer's feedback. Writing experiences contribute both to student success and their attitude. To help participants find more success in writing composition, their experiences must be considered.

![Categories and Themes for Participant Interviews](image)

*Figure 4.8. Visual Representation of the Four Themes from Participant Interviews*
Resources used when peer reviewing and use of online features encompassed

Theme 3: Benefits of Digital Tools. In the study, participants used their laptops as well as Microsoft Word Online to complete their assignments and peer review. During the interviews, participants expressed their fondness for using these tools. Participants described the ease at which it was to type their documents as well as the grammatical and spelling correction features of Microsoft Word which allowed them to feel more confident about their work. Participants looked at these digital tools as an added benefit to the study. Theme 4: Improved Writing, was comprised of the categories grammatical corrections, self-reflection as active learning, and future use. In interviews, participants described the ways in which their partners helped them to improve their compositions. Most of the feedback given by partners was lower order grammatical feedback but was well received by participants. Also, participants discussed that when giving feedback to their partners, they were able to reflect on their own work and make corrections. Finally, participants discussed how they would use digital peer review in the future such as when they go to middle school or even in college. Participants seemed to value digital peer review enough to use it for future endeavors in education. Grammatical corrections, self-reflection, and future use were all part of the improvement for participant writing composition.

Presentation of Findings

The qualitative findings for the participant interviews will be presented in the next section. Each theme will be explained with the help of direct quotes from the participant interviews. All quotes are verbatim from the participant interview. For each quote,
Findings from Participant Interviews

The themes for participant interviews are presented below in Table 4.5. The themes that developed from the participant interviews were: (a) contributions to attitudes, (b) writing experiences, (c) benefits of digital tools, and (d) improved writing.

Table 4.5 Themes, Assertions, and Categories of Participant Interviews

<table>
<thead>
<tr>
<th>Themes</th>
<th>Assertions</th>
<th>Categories</th>
</tr>
</thead>
</table>
| 1. Contributions to attitudes | Participant attitudes were more positive toward writing after the digital peer review. | • Factors that affected student attitudes before peer review  
• Factors that affected student attitudes after peer review |
| 2. Writing experiences        | Participants felt that digital peer review, or just the use of peer review, created a more positive experience because they were working with a partner. Participants felt it improved their own writing as well as their partner's and enjoyed helping their partner improve their work. | • Positive contributions of peer review (improvement in writing, helping others, helpful to self, improvement in focus)  
• Building trust  
• Drawbacks of peer review |
| 3. Benefits of digital tools  | Participants enjoyed using online digital programs as well as their laptops because this provided them with more resources as well as took away the manual labor of writing. | • Resources used when peer reviewing  
• Use of online features |
4. **Improved writing**  
Participants felt that using a partner in writing helped to improve their writing because they helped point out areas for improvement. Participants also felt that when the reviewed their partner's work it helped them to reflect on their own work.

<table>
<thead>
<tr>
<th>Themes</th>
<th>Assertions</th>
<th>Categories</th>
</tr>
</thead>
</table>
|        | Participants felt that using a partner in writing helped to improve their writing because they helped point out areas for improvement. Participants also felt that when the reviewed their partner's work it helped them to reflect on their own work. | • Grammatical corrections  
• Self-reflection as active learning  
• Future use |

**Contributions to attitudes.** Participant attitudes were more positive toward writing after the digital peer review. Prior research has shown that when it comes to the subject of writing, self-efficacy, or how a student views themselves, typically comes from how the student views themselves as a writer as well as their past writing experiences (Altunkaya & Topuzkanamus, 2018). For this study, it was important for students to establish how they felt toward writing both before and after the writing as well as to see if the intervention helped to steer students toward a more positive attitude toward writing.

In the interviews, participants were directly asked how they felt about writing before the intervention and after. Participants were also asked if they felt their attitude toward writing changed due to the digital peer review and indicated that there were (a) factors that affected student attitudes before digital peer review and (b) factors that affected student attitudes after digital peer review.

**Factors that affected student attitudes before digital peer review.** Participants in this study were a mixture of third and fourth grade students who had previous writing experiences in earlier grades. Participants were asked in their interviews what their experiences with writing had been before this study. Many participants indicated that they liked writing, but they enjoyed mostly writing about personal experiences or
narrative writing such as stories they created themselves. Other students indicated that writing made them feel nervous and uptight and that it was complicated and boring. Bulut (2017) states that student attitudes in writing are a direct correlation to their achievement in writing. Because some of the participants had not felt particularly successful in writing, their attitude toward writing was affected in a negative manner. Natalie stated, "I thought a little more uptight about my writing and kind of nervous about what I did and if I made a mistake." This feeling of inadequacy leads to a less than desirable attitude toward writing. Prior research shows that the cognitive-affective model (Heddy et al., 2016) states that conceptual change is directly impacted by emotion. For a student to change their attitude, the emotion behind that attitude must change and these changes can be viewed as either positive or negative (Graham et al., 2007; Heddy et al., 2016).

Students that have previously felt that they are not a good writer tend to be much more anxious about their writing (Berk & Unal, 2016). After being asked how they felt about writing before the study, Ophelia indicated:

…it was like hard to see if it was right or wrong because your brain was telling me one thing, your gut was telling you the other and you didn't know which way to like do it or like choose.

Student attitude represents their likes and dislikes (Ekholm, Zumbrunn, & DeBusk-Lane, 2017). If the student does not like writing because of internal confusion, this will indeed affect their attitude toward writing. For students to feel more comfortable with writing, the instructor must work to shift their attitude away from the negative and toward the desired attitude (Kim et al., 2016). The responses to the interview questions indicated
that although some participants felt comfortable with writing before the study, most students felt some sort of negative attitude toward writing and indicated a dislike for writing in the past.

Factors that affected student attitude after digital peer review. Altunkaya and Topuzkanamis (2013) state that attitude isn't a behavior one merely observes but is the way in which one reacts to a given situation. In the participant interviews, students were asked how their attitude did or did not change toward writing after the intervention. Participants \( n=8 \) responded positively, if only indicating that they liked writing a little bit more after the intervention. Interviewees stated that their attitude changed to a more positive attitude because of their work with their partners.

After being asked how their attitude changed due to digital peer review, Ethan said it improved his attitude "because it [peer review] helped me, and my partner helped me, and now I remember that, and I know how to help myself with that." With peer review, students are collaborating with others and providing an opportunity to continue to build important collaborative skills (Chaktsiris & Southworth, 2019; Deveci, 2018). In his statement, Ethan is indicating that the comments their partner made on their work helped them to see their areas of improvement, and that in the future they would remember those changes, thus establishing a successful collaboration between the partners.

George stated that after digital peer review, "I can see all the mistakes I made." Ophelia said, "Well, after it was kind of fun because you know, you get to read other people's stories and not just focus on your own thing." Researchers Zoch, Adams-Budde, and Langston-Demott (2016) state that sometimes students feel less confident when left
to their own devices and feel much more comfortable working with a partner or a group. For both participants, working with someone else has changed the way they view writing, whether it was that they learned important self-reflection skills, indicated by George, or that they simply enjoyed reading and critiquing the work of others rather than just their own work.

As Bulut (2017) states, after reflecting on work, a student either has a positive or negative attitude toward an object, person, or event. The participant interviews indicated that after reflecting on their time in the study, participants enjoyed checking their partner's work, they were able to see their own mistakes when they reviewed their partner's work, they now know how to help themselves, they feel better (about their work) because of their partner, and that their partner helps them which makes writing easier. All these statements indicate that the participants saw tremendous value in digital peer review.

Writing experience. This study aimed to examine how the use of digital peer review contributed to the writing experience of the participants. Participants reflected on the ways in which the intervention affected them. Participants discussed how for most of them the experience was positive, but that there were some aspects of the intervention they would like to see changed. The interviews conducted with the participants showed a range of experiences for students and their reflections showed that their writing experience consisted of (a) positive contributions of peer review, (b) building trust, and (c) drawbacks of peer review. The following sections will examine the findings of the data and discuss how these findings contributed to the development of these themes.
Positive contributions of peer review. There are many factors involved when it comes to having a positive experience in writing. During the interview, participants indicated many aspects of the experience that contributed to their experience being positive. Some of these factors include (a) improvement in writing, (b) building trust, and even the (c) drawbacks of peer review. In this section, I will discuss these elements of the study in detail that contributed to the positive contributions of digital peer review in this study.

Improvement in writing. During the interviews, participants stated that some of the ways in which digital peer review was a positive experience for them was that it helped them to improve their writing or become a better writer. Purcell, Buchanana, and Firedrich (2013) state that digital tools often provide for a larger audience for students. Because the audience is larger, students have more than themselves looking over their work and helping them improve their own work.

Participants also said that they felt digital peer review helped them to fix their mistakes and get better grades as well as to help them figure things on their own, proving the point made by Yalch, Vitale, and Ford (2019) that peer review can have a direct impact on the improvement of student grades on writing assignments. This is further proven with points made by Miller and Olthouse (2013) who state peer revision helps improve student writing at all levels. When asked how digital peer review helped them to be a more confident writer, Ophelia stated:

Cause I know that if I get it wrong, there's somebody else there, to you know, to tell me or like help me a little bit and not tell me the full thing so I can figure out on my own.
This statement by the participant shows that student goals of good grades and proficient writing validates that participants felt that digital peer review contributed positively to their experience within the study.

**Helping others.** Helping their fellow classmates was one of the more overwhelming positive contributions of this study by the participants. Every participant interviewed stated in some way how they were impacted by helping their partner and how important it was to them to help their partner. Participants stated that they wanted their partner to do well, that they helped their partner, and pointed out what their partner needed to improve. When I asked Frank what his favorite part of peer review was, he simply stated "I can help them get a better grade." Interview responses indicate that students felt a great responsibility for helping their partner not only complete their work but maintain a high level of writing.

One participant spoke of how digital peer review helped them by having someone other than the teacher looking over their work. Destiny stated:

I think it helped us because like our partners could have spotted out mistakes that we wouldn't have spot out, spotted out, and um, it just is like an easier way than the teacher having to go and do all of them and make sure it's right and then we can just help our partners out.

This was an important positive feature to pick up on from the study because in traditional methods of teaching instruction, the teacher does all the work and there is no one else critiquing and revising with the student (Hairston, 1982) This participant was able to see the value in digital peer review as a means of having another set of eyes on their work, therefore contributing to their success.
The idea of working in community has been a long-standing method in the classroom and has been thought to bring much success to students, (Powell & Kamina, 2009). The idea of community as a means for success is further proven through participant interview responses that reflect the idea that digital peer review is a positive contribution to writing due to the fact of how it positively impacts the participant helping their partner. When asked about the positives of digital peer review, many students stated that the ability to help their partner improve their work was high on the list of why digital peer review was a good experience for them.

Helpful to self. Participants stated that another positive contribution of digital peer review was how it was helpful to their own writing. Participants stated that after their work was reviewed by their partners, they felt they knew what they needed to work on, learned from their mistakes, it was helpful, and helped them understand what to do now. When asked how digital peer review was a positive experience for them, Ophelia stated, "Yeah, it helps me get better at, um, helping other people's writing and it shows me examples of how I can improve my writing." The use of digital peer review provides a new, innovative way for students to connect and learn from their partners. The asynchronous conferencing between students over the use of technology helps them to make references to and evaluate their partner's writing (Guardado & Shi, 2007) and in turn the recipient of those evaluations is able to improve their own work and learn from the mistakes they have made. The responses from students show that one of the positive outcomes of the study is that the comments made by their partners helped students to become better self-evaluators and overall better writers.
**Improvement in focus.** Being more confident, focused, and zoned in were also positive contributions to the digital peer review experience. Digital peer review promotes active learning for students (Rietdijk et al., 2018) and allows them to be completely dialed in to their work. "I think I was more concentrated, so I focused a lot more on making it better," stated Natalie. Ophelia said, "It's kind of fun because it was kind of quiet in there and so you can concentrate and focus." Having this time to concentrate and focus on both their work and their partner's work allows students to revise their work (Liu & Sadler, 2003), develop critical thinking skills (Deveci, 2018), and increase self-monitoring skills (Philippakos, 2017). Participant statements of an increase in focus during their digital peer review experience promotes the idea that an increase in focus and concentration is a positive contribution of peer review.

**Building trust.** For the digital peer review process to be a success, there needs to be a fair amount of trust between partners. Again, learning develops through community (Andrews & Smith, 2011) and through this community, a trust between partners is formed. The participants felt comfortable with having someone else review and evaluate their work, adding that they felt their partner cared about their work and gave valuable feedback for them to be successful. Students stated that through digital peer review their partner helped them to make changes to their work and gave useful comments and feedback. In turn, participants felt when they gave feedback that their partners cooperated, quickly fixed mistakes, made changes from the feedback, and that partners held each other accountable. Students may have reacted positively to their partner's feedback due to the experience their partner had with writing. McKinley (2015) states that through Vygotsky's ideas of constructivism, students who scaffold with someone
who may have more experience, or is more knowledgeable, helps to develop their own skills.

There were some instances where students had a negative experience with their partner. With one pairing, the partners did not initially have the trust that was needed to be successful with digital peer review. The students were arguing back and forth, disagreeing with feedback, and the partners were not getting along. When asked how he tried to help his partner, Ethan stated "I helped her because she wanted to capitalize a bunch of letters. I told her not to and she, she wanted not to. She said, 'It's hard to stop' and then she stopped." This participant spoke of how frustrating it was to give suggestions to their partner and to not have them listen to their suggestions. The student's frustration resulted in his negative feelings toward digital peer review. When asked to reflect on his experience with digital peer review, Ethan said, "It made me like it just a little bit less because she wasn't really, she didn't write that many words right and she was not listening to me." Ethan's partner not heeding his advice could be explained by Philippakos' (2017) idea that students sometimes will not value their partner's comments as much as they would their instructor's. The fact that this participant did not want to cooperate with their partner could have been because they felt their partner was inadequate in evaluating their work (Philippakos, 2017). This negative experience further demonstrates the importance of trust in digital peer review. Without a trusting relationship, students will not be open to feedback from their partners and partners will not be willing to give of their time or energy to help their partner.

**Drawbacks of peer review.** There were several participants ($n=3$) who discussed that their experience with peer review had some drawbacks. Participants spoke of how
they would have liked to have met face-to-face with a partner rather than meet over technology. This is supported by Jelderks' (2012) research that states that one disadvantage of digital peer review is that some students simply prefer meeting face-to-face for peer review over meeting digitally. When asked what would improve digital peer review, Destiny said, "Probably if we did it like, like face-to-face. Because like it's harder to like explain it over like text messages." Destiny's feelings reflect the recommendations of the Gayle Morris Sweetland Center for Writing (2019) which says that peer review is often face-to-face with a partner or group of students. The advantage of working together in a face-to-face situation versus over technology is that when meeting face-to-face, the feedback is more diverse and the partners or group members can examine each other's work along with the person (Gayle Morris Sweetland Center for Writing, n.d.). Destiny's observations provide insight into how some students can work with others through technology, but some students still prefer the community of their fellow classmates in person.

Others in the study felt the process was monotonous and they did not enjoy having to repeat the steps over and over. In another study, Liu & Sadler (2003) came to a similar finding with the participants in their study. Through feedback, the researchers learned that students felt it took much longer to complete the feedback process because it took them longer to find the file, insert comments, and use the editing tools. The participants felt that the traditional process of peer review was much easier because they wrote the comments directly on their partner's paper (Liu & Sadler, 2003). In this research study, participants felt that the repeating of steps was very boring and possibly was a reason they may not have cared for digital peer review. When asked about
something she disliked about digital peer review, Ophelia said, "Yeah, we had to go through all the steps like over and over again every single time." For the same question, Frank added, "Well, uh, if, um, we didn't have to do it like every day." The process became overwhelming for these students and seemed to give them a negative feeling toward digital peer review. From the participant responses, the research study shows that there can be some drawbacks of digital peer review and the instructor should be careful to address these drawbacks as they arise when using digital peer review.

**Benefits of digital tools.** Beyond the actual reviewing of their partner's work and offering feedback to their partner, participants were pleased to be using a different platform to complete their writing assignments. Participants enjoyed using their laptops as well as online digital programs such as Microsoft Word to complete their assignments. Participants felt that using their laptops provided more resources for them when they were reviewing their partner's work. Participants preferred using their laptops to complete their writing compositions rather than doing them manually because it was less laborious and easier. After conducting participant interviews, their responses communicated that participants felt (a) resources used when peer reviewing and (b) use of online features were both benefits of digital tools in the study.

**Resources used when peer reviewing.** During the study, students used several resources to help provide feedback to their partner. When asked what types of resources participants enjoyed using, students mentioned their rubric and dictionaries. In peer review, students often use a rubric to check their partner's work (Guardardo & Shi, 2007; Philippakos, 2017). The rubric can be a useful tool for students to give accurate feedback and help their partner do well on writing assignments. This was reflected in the study
when participants were asked which resources helped them to provide feedback to their partner. When asked, Destiny stated, "I used the rubric, and I would like go through in like every part and I'll go to see if it was a 15, 10, or 5 on like every sentence." In this example, Destiny used the rubric as a guide to help her partner improve their writing, making sure their paper had top scores for each section. When asked which resources he used, Ethan stated, "Yeah, the rubric, it, like her grammar was good, but she like missed a couple of things. The periods and she said something that she was supposed to [write] they and she put the." Here Ethan used the rubric as a tool to help guide him and make sure his partner had everything it needed to be a quality piece of work. From the participant interview statements, it's clear the rubric was a valuable tool that was beneficial in giving great feedback.

Use of online features. In the study, participants seemed to be highly motivated by the ability to use their laptop computer for their writing assignments and digital peer review. The Cognitive Process Model of Composing states that the first state of the process is task environment, where keyboarding, handwriting, and spelling are critical (Wollscheid et al., 2016). At these early stages, these skills are the foundation for the writing composition. In this study, participants stated they enjoyed typing, felt they improved their typing skills, felt typing helped them finish faster, and enjoyed the fact that they did not have to use a pencil. When asked what his favorite thing about digital peer review was, George stated, "Because I didn't have to use a pencil and sometimes whenever I use a pencil, and I write too long, my hand starts to hurt." Barry said, "My favorite thing was that we actually got to type because I'm a lot better at typing than writing, and I work a lot better at typing than writing." From their statements, both
participants viewed the ease of typing as a benefit of using the digital tool. This contrasts with Wollscheid's, et al. (2015) statement that research suggests the physical act of using pencil and paper over digital tools helps to stimulate the brain. In the study, the participants did not seem to feel that using the technology made them less capable of completing their work, but rather added to the overall experience.

Some participants also commented that they liked the use of spellcheck and the commenting feature of Microsoft Word. Microsoft Word gives access to features such as spell-check and cut and paste to help revise writing (Miller & Olthouse, 2013; Jelderks, 2012). Pytash, Ferdig, Gandolfi, and Matthews (2016) support the idea that digital tools can offer other forms of writing than traditional pen and paper and that these new forms may give reluctant writers a new platform in which they can feel successful. In the interview, Natalie states, "I feel a lot better about writing because I know I'll make mistakes but doing it on the computer, it'll tell me if my, if I start a word wrong or something, if the same structure is wrong." Hear Natalie, who previously in the interview told me she was nervous and anxious about writing, is saying that the features of Microsoft Word help her to see when she may be doing something wrong and eases her nervousness when it alerts her that she may be spelling a word incorrectly or some other mechanical, low level mistake.

As with the spell-check feature, participants felt the commenting feature was a beneficial tool during the study. Microsoft gives access to a feature called commenting where the user may make comments on another user's work. Using this feature with students provides direct feedback to specific portions of the text (Guardado & Shi, 2007). Also, the use of digital tools can offer ways in which to plan, create, and share in creative
ways (Dunn, 2015). When asked how the intervention made her a more confident writer, Jennifer stated:

Because after Frank sent me those comments, and then when I start to write, it just makes me feel like more confident in myself, and make, and make it seem that like, to make sure I put the punctuation correctly.

Answering the same question about confidence, Destiny states, "Because, like, they can help you, like, with things that you're not good at, and they, like, give you comments that will help you get better at that." Both participants reflect that the commenting feature of Microsoft Word was an important part of helping them grow as a writer, helping them gain confidence in their writing, therefore making it a tool they both benefited from.

**Improved writing.** One of the aims of the study was to see how digital peer review impacted the writing composition of the participants. Participants were asked in their interviews what they felt were the positives and negatives of digital peer review and how digital peer review helped them to be more confident writers. Participants felt that digital peer review helped to improve their writing by having a partner help point out areas for improvement, as well as helped them become reflectors of their own work.

When students review each other's work, and give feedback, a chance to grow in their critical thinking skills is achieved (Deveci, 2018). In this study, participants were set up to use critical thinking skills to not only compose their own writing, but to critique the writing of others. Responses from participants indicated that (a) grammatical corrections, (b) self-reflection as active learning, and (c) future use were three ways in which they felt digital peer review impacted their writing.
**Grammatical corrections.** Throughout each participant's interview, a mention of corrections in spelling and punctuation, the mechanics of writing, was prevalent. Participants felt very comfortable in giving feedback in grammar and mechanics. This type of feedback is discussed in Beringer and Winn's (2006) simple view of writing model. In this model, Beringer and Winn (2006) discuss how transcription (handwriting, typing, and spelling) is an important part of the process a writer goes through. This type of feedback is reflected in research conducted by Miller and Olthouse (2013) which states that students tend to focus on lower-order feedback like correcting grammar rather than that which leads to the analysis of their writing. When asked what types of feedback participants received, many of them stated their partners commented on spelling, punctuation, or grammar. "She told me to capitalize letters," said Ethan. "Well, I had a misspelled word and I thought it was correct, and Frank told me how to spell it correctly," said Jennifer. Both types of feedback are this lower-level order of skill that students feel comfortable in giving feedback on. But even though this type of feedback isn't analytical, it doesn't necessarily mean it's not important. Writing is the product of these lower order skills in conjunction with higher-order skills of understanding, (Poch & Lembke, 2017). What this research says is that grammar and spelling are the basic building blocks for writing composition, so feedback on these skills is an asset in developing writing composition.

**Self-reflection as active learning.** Although participants did not work directly with each other, but rather indirectly through their devices, the intervention helped to promote active learning by working together (Rietdijk et al., 2018). Self-reflection is a form of active learning. Participants were asked in their interviews how they were able to
reflect on their own writing when they were providing feedback to their partners. Students can use their role as feedback giver to find the trouble areas in their own work and make the needed corrections, (Philippakos, 2017). Participants shared their own instances of reflection within their work. "Like when I was reviewing his writing, I saw a couple of mistakes and I thought to myself 'Well what if I made those mistakes?' So, I went back and checked on my own writing for those mistakes," said Natalie. For Natalie, the ability to use the feedback she was giving to her partner to reflect upon her own work shows growth in self-reflection. When asked how reviewing her partner's work helped her with her own work, Natalie said:

    It helped me enjoy it [peer review] more because I was understanding somebody else's writing and not just my writing. So maybe I got an idea from theirs or maybe I saw mistakes in theirs, so I thought I made it.

For the same question, Frank said, "Because I was reading their, their writing and I like, I remember that the same thing, the mistake that they did, I made that mistake, too." For Natalie and Frank, self-reflection was about being able to use the feedback they were giving to reflect on their own work. This matches the research of Yalch, Vitale, & Ford (2019) which says that when students are engaged in peer review, it promotes self-improvement in their own writing.

    One participant shared that she always felt confident in her writing and didn't feel that she really needed someone to check her work. When asked what her favorite thing about peer review was, Jennifer stated:
Um, actually I like that [peer review] because I didn't think I would mess up. I just thought it was all right, but then when he just founded all those things that I needed to fix it, I thought it was a good thing that I needed to know for me to have.

For Jennifer, this may be a case of a student who has difficulty reflecting in her own work, therefore having someone show her the areas in which she needs to revise would be of great benefit to her (Daiute, 1986). There are many stages in the writing process, so gaining the ability to work through the process to refine one's own work is a great benefit to improving their writing composition skills (Onozoawa, 2010).

**Future use.** To see if the intervention improved the writing skills of the participants, I asked students in their interviews if they could see themselves using this type of peer review in the future. Most students stated that they felt confident that they would use this type of peer review in the future. Some students stated they would feel more comfortable using peer review if it was offline. This mixture of responses reflects the idea that every student learns in their own way. When asked how students could see themselves using this in the future, some remarked that they felt they would use this type of feedback in middle school while others thought they may use it in college. "It might help me when I'm in middle school because I think they have to do a lot of peer review in middle school," said George. Participants further stated that this would be useful when writing essays or conducting research. Natalie stated, "Like if we have an essay, and you have to like trade with one of your partners, and you don't know who it is, even like do your best to see what it is." For Natalie, digital peer review is a step in the right direction for building confidence and trust in her partner. For those who preferred the offline
experience, these participants stated that in the future, they would rather enjoy sitting with their partner and their work and giving feedback directly in that moment. When asked what would have made her enjoy peer review more, Destiny stated that she would like for it to be face-to-face. When asked to expand, she stated "Because like it's harder to like explain it over like text messages." For Destiny, the intimacy of being together was important to her so that she feels the connection to her partner, and she can give and receive feedback in a more direct manner. In the future, participants seemed to feel that they would take part in some form of peer review because they saw the value in working with someone who wanted to help them, not necessarily critique them, and using peer review in the future would be helpful in improving their writing.

Participant interviews gave great insight into how the participants felt about the process of digital peer review. The interviews showed the areas in which students felt comfortable and felt they were successful as well as the areas in which they felt uncomfortable and unsuccessful. Their feedback was received with enthusiasm to further explore how to improve and expand digital peer review. These findings will be further discussed in chapter five.

**Analysis of Microsoft Word Comments**

For the first cycle of coding for the Microsoft Word comments, I used in vivo coding. Coding the comments provided a different experience than coding the interviews. In coding the comments, I was only seeing feedback, or what participants wanted their partner to change about their composition, and not participant reaction like I saw in the participant interviews. I used the writing assessment rubric from the study to guide my coding of the Microsoft Word comments. The rubric was used in the study by
participants to give feedback on their partner's work. Using in vivo coding allowed me to use the comments the participants made in digital peer review to create the codes. This coding reflected the way students reviewed their partner's work. This gave me insight into the areas of the rubric that participants deemed important when peer reviewing. Figure 4.9 shows the in vivo coding process for the Microsoft Word comments. After the first round of coding was complete, 65 codes emerged from the Microsoft Word participant comments, shown in Table 4.6.

*Figure 4.9. In Vivo Coding in Delve for Microsoft Word Comments*

With the Microsoft Word comments, I used pattern and focus coding for the second cycle. Using the rubric in the data analysis helped narrow the focus for the selection of categories. Setting the categories with the rubric in mind, the challenge was then to see which codes aligned, and which codes were no longer important. Six categories emerged from the findings: (a) *analyze* skills, (b) evidence, (c) collaboration qualities, (d) functions of feedback, (e) grammar and spelling, and (f) organization. Figure 4.10 shows how I used index cards to help with second cycle coding of the Word comments.
<table>
<thead>
<tr>
<th>First Round Codes</th>
<th>In vivo codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Analyzation skills</strong></td>
<td>• Compare text,</td>
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<tr>
<td></td>
<td>• did not compare your story to the text,</td>
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<td></td>
<td>• own experience,</td>
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<td></td>
<td>• prove your point,</td>
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<td></td>
<td>• put why you feel brave,</td>
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<tr>
<td></td>
<td>• theme or moral</td>
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<tr>
<td></td>
<td>• text evidence is weak</td>
</tr>
<tr>
<td><strong>Organization</strong></td>
<td>• better introduction,</td>
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<td></td>
<td>• closing,</td>
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<tr>
<td></td>
<td>• conclusion,</td>
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<tr>
<td></td>
<td>• introduction,</td>
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<td></td>
<td>• logical, clear sentences,</td>
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<td></td>
<td>• more exciting/long sentences,</td>
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<td></td>
<td>• need an introduction,</td>
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<td></td>
<td>• switch words,</td>
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<td></td>
<td>• use specific words,</td>
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<td></td>
<td>• used varied sentences</td>
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<td></td>
<td>• Transition words</td>
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<td></td>
<td>• part needs to come out</td>
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<td></td>
<td>• reader can better understand your story</td>
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<tr>
<td><strong>Evidence</strong></td>
<td>• correct quotes,</td>
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<td>• direct evidence,</td>
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<td>• evidence,</td>
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<td>• quotes,</td>
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<td></td>
<td>• write more</td>
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<tr>
<td><strong>Content of essay</strong></td>
<td>• Give details,</td>
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<td>• On topic,</td>
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<td></td>
<td>• Adding something else,</td>
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<td>• Be more specific,</td>
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<td>• Replace words</td>
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<td>• lose this sentence,</td>
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<td></td>
<td>• make sense</td>
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<td>• doesn't make sense</td>
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<td>• not important</td>
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<td><strong>Grammar and spelling</strong></td>
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<td>• punctuation,</td>
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<td></td>
<td>• capitalization,</td>
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<td>First Round Codes</td>
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<td>• spelling,</td>
</tr>
<tr>
<td></td>
<td>• space,</td>
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<tr>
<td></td>
<td>• take off extra space,</td>
</tr>
<tr>
<td></td>
<td>• too many spaces</td>
</tr>
<tr>
<td>Compliments</td>
<td>• agreement,</td>
</tr>
<tr>
<td></td>
<td>• best job answering the TDA question,</td>
</tr>
<tr>
<td></td>
<td>• compliment,</td>
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<tr>
<td></td>
<td>• couldn't have done it without you,</td>
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<tr>
<td></td>
<td>• great job,</td>
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<tr>
<td></td>
<td>• hope you get an A,</td>
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<td></td>
<td>• I like it,</td>
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<tr>
<td></td>
<td>• I like your story,</td>
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<td></td>
<td>• looks better</td>
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<tr>
<td></td>
<td>• that's funny</td>
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<tr>
<td></td>
<td>• acknowledging compliments</td>
</tr>
<tr>
<td></td>
<td>• I like how you looked over and made sure</td>
</tr>
<tr>
<td></td>
<td>• added details</td>
</tr>
<tr>
<td></td>
<td>• good job staying on topic</td>
</tr>
<tr>
<td>Compliance</td>
<td>• I will try,</td>
</tr>
<tr>
<td></td>
<td>• I'll fix it,</td>
</tr>
<tr>
<td></td>
<td>• If you want me to,</td>
</tr>
<tr>
<td></td>
<td>• questioning</td>
</tr>
<tr>
<td>Reassurance</td>
<td>• it is okay,</td>
</tr>
<tr>
<td></td>
<td>• let's try,</td>
</tr>
<tr>
<td></td>
<td>• look again,</td>
</tr>
<tr>
<td></td>
<td>• not anything serious to worry about,</td>
</tr>
<tr>
<td></td>
<td>• not necessary,</td>
</tr>
<tr>
<td></td>
<td>• fixing things</td>
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As with the participant interviews, after creating the codes and categories for the Microsoft Word comments, I held peer debriefings with both my writing partners as well as Dr. Arslan-Ari. My writing partner was helpful in guiding me to better name one of the categories. For example, I had compliance, compliments, and reassurance initially as separate categories. My writing partner helped me to combine those into one category of functions of feedback. She also led me to rename the category content of essay to collaboration qualities. I then met with my dissertation chair, Dr. Arslan-Ari to further debrief. Dr. Arslan-Ari felt the codes and categories were well represented, so she challenged me to think about how these categories would create my themes. My next step was to create the themes from the categories that I created. I used my research
questions to guide my creation of the themes. I had a final peer debriefing for the Microsoft Word comments with Dr. Arslan-Ari where final themes were established. Dr. Arslan-Ari and I talked through the first theme which was initially titled Analyzation skills and we both agreed that title was too like the category named Analyzation skills. Later, I changed the theme to Analysis of Text. Three themes from the Microsoft Word student comments were formed: (a) Analysis of Text, (b) Effect of Working Together, and (c) Improving Composition. These themes are shown in a visual model in Figure 4.11.

![Figure 4.11. Visual Representation of Themes from Participant Interviews](image)

For Theme 1: Analysis of Text, the categories analyzation skills and evidence encompass this theme. In the study, participants were asked to analyze text for their assignments and all assessments. Participants had to use analyzation skills, like finding
implicit and explicit text evidence, to be able to answer the text dependent question. For these reasons, the codes that encompassed the two categories of the first theme helped to analyze student skills in these areas. The categories collaboration qualities and functions of feedback subsumed Theme 2: Effect of Working Together. One of the major themes that emerged for this study was that participants enjoyed working together. In participant Microsoft Word comments, students demonstrated how they were able to give their partners helpful feedback to improve their writing compositions. In helping their writing partners, this created a strong collaboration between the pairs. Due to the findings that emerged, it was imperative that a theme weighing the effects of peers working together to improve student writing composition and student attitudes be included. The third theme entailed the categories grammar and spelling and organization and was entitled Improving Composition. This final theme emerged because of the types of feedback participants gave their partners. Most participants (N=17) gave at least one piece of feedback that fell under this theme. Since students seemed comfortable giving feedback in the areas of spelling, grammar, and organization, it was deemed essential to create a theme that would explore this aspect of the findings.

Presentation of Findings

An additional collection of qualitative data was gathered from the participant peer review comments in Microsoft Word. The themes from the analysis of this data will be explained with the help of direct quotes from the Microsoft Word comments from the participant documents. All comments were verbatim from the participant documents. For each comment, pseudonyms have been used to protect the identity of the participants.
Findings from Microsoft Word Comments

After analyzing the Microsoft Word comments, three themes emerged. Table 4.7 shows these themes along with the assertions and categories that subsume each theme.

Through the comments that were made between partners in Microsoft Word, the participants demonstrated (a) increasing analytical skills, (b) effect of working together, and (c) improving composition. In the following sections, the themes from this analysis will be explained. All names are pseudonyms to protect the identities of the contributors. All quotations are verbatim from the Microsoft Word documents where students used the commenting feature to comment on their partner's work as well as respond to their partner's feedback. Examples of comments made by participants have been added to this section to show the dialog between partners. In the Microsoft Word student document figures, a text box was placed over the participant's name, and the pseudonym was added in the text box. This was done to keep the anonymity of the participant, while still disclosing the commenting conducted in the Microsoft Word document.

Table 4.7 Themes, Assertions, and Categories of Microsoft Word Comments

<table>
<thead>
<tr>
<th>Themes</th>
<th>Assertions</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Analysis of text</td>
<td>Participant comments helped students improve the analysis of the text by having them add evidence as well as add their own experiences and compare those with the text.</td>
<td>• Analyzation skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Evidence</td>
</tr>
<tr>
<td>2. Effect of working together</td>
<td>Participants gave feedback to improve the quality of their writing such as adding more details and better choice of wording. Participants often gave compliments on their partner's work,</td>
<td>• Collaboration qualities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Functions of feedback (compliments, compliance, and reassurance)</td>
</tr>
</tbody>
</table>

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### Themes

<table>
<thead>
<tr>
<th>Assertions</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>reassured their partner to boost their confidence, and complied with suggested revisions.</td>
<td>• Grammar and spelling</td>
</tr>
</tbody>
</table>

### 3. Improving composition

Participants gave suggestions to help them better organize their work such as adding transition words or being clearer with ideas and gave advice on making corrections on grammar and spelling errors.

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**Analysis of text.** Through the digital peer review process, participants made comments on their partner's work and provided feedback on how to add better analysis to their writing composition. Generally, students, especially young students, tend to target their feedback to lower-order skills rather than feedback that leads to better analysis (Miller & Olthouse, 2013). For this study, analysis of text refers to participants reading a specific text and responding to a question that can be answered through analyzing the text. Participants in this study demonstrated an increase in analysis of text through (a) analysis skills and (b) evidence by providing feedback to their partners in these areas.

**Analyzation skills.** One of the aims of this study was to examine how digital peer review directly affects writing composition for students. Since, students were required to read a piece of text and provide analysis, a goal of the study would be to see if participants acquired the skills needed to analyze text at a high level. The analysis of text requires students to "develop new ideas and insights" (Wang, Matsumura, & Correnti, p. 101, 2017) as well as develop critical thinking skills (Deveci, 2018) which leads students to a deeper, richer understanding of text. Using digital tools in writing allows for
struggling writers to view writing outside the normal model (Dunn, 2015). In the study, participants gave online feedback using the Microsoft Word comment feature. Some of the participant feedback asked for students to compare the text to their own experiences, to be more direct with evidence, and to prove their point with text. Often comments were centered around how participants could take steps to improve the analysis of their work. The following are examples of comments made by participants on their partner's work:

Steven: You did not compare your story to the text.

Jennifer: Tell why you felt like you were being brave.

Barry: Needs at least 2 or 3 pieces of evidence to prove your point.

Figure 4.12. Example of Analysis Feedback from a Partner and Follow-up.

The comments made by participants gave specific feedback to their partners and helped direct them to areas where they could provide more text analysis (See Figure 4.12). From the example above, participants often gave analysis feedback to their partners, such as adding their own thoughts on the content of the text and then added other encouragement for their partner. Through these types of comments, it seemed it
was important for participants to not only direct their partners, but to encourage them, which will be discussed in a later section.

Giving feedback on the analysis of text is not an easy task, even for instructors. For elementary students, it is even more difficult. This difficulty relies in the fact that the vocabulary used in giving analysis feedback is not typically the vernacular of the students and some of the vocabulary used to give feedback could be interpreted in different ways (Wang et al., 2017). The participants in this study did a fair job at giving feedback on analysis, considering it is a difficult task to even complete text analysis. As these participants grow and learn more about text analysis, their feedback skills will become even stronger.

Evidence. Along with analysis comes evidence. For the participants to analyze the text, they also had to give evidence to back up, or prove, their analysis. With writing analysis, the audience expects the writer to have a reason for their analysis and expects those reasons to be proven by evidence (Hillocks, 2010). This proof comes directly from the text that is being analyzed. For this study, students gave several good examples of feedback where they asked their partners to give examples of evidence in their analysis. Participants asked their partners to give direct evidence or quotes as well as to write more about what they were trying to explain. Figure 4.13 shows the dialogue between partners when working on this aspect of the writing process. The dialogue between partners demonstrates the value that is placed providing evidence and how the partner that received the feedback respects their partner enough to take their advice and improve their analysis skills. As previously discussed in the participant interview section, the trust that is formed between partners aids in a strengthening of analytical skills.
For students, evidence-based writing can be difficult due to inexperience or any other number of factors (Lee, 2018). Participants in this study accepted the responsibility of critiquing their partner's provision of evidence to best analyze the text. Following-up with their partner was also seen as a highlight for some of the participants since it was a way of checking for understanding and keeping them on target. The feedback provided in this area of writing will continue to help participants become better analysts of text.

Figure 4.13. Example of Feedback from a Partner on the Writing Process.

For students, evidence-based writing can be difficult due to inexperience or any other number of factors (Lee, 2018). Participants in this study accepted the responsibility of critiquing their partner's provision of evidence to best analyze the text. Following-up with their partner was also seen as a highlight for some of the participants since it was a way of checking for understanding and keeping them on target. The feedback provided in this area of writing will continue to help participants become better analysts of text.

Effect of working together. One of the objectives for this study was to provide an intervention which used an online platform for participants to come together to
provide feedback for one another. The reasoning for using a digital peer review platform was to promote active learning amongst the participants (Rietdijk et al., 2018). Participants, guided by their rubrics and writing checklists, were given the freedom to critique and analyze their partner's work to provide them with the best feedback to improve their composition. Participants remarked on several areas of their partner's work including providing better details, using better word choice, and providing clarity in their work. Receiving feedback was found to contribute to effectively working together since participants often thanked their partners for their guidance and showed compliance by correcting their work. Examination of peer review comments in Microsoft Word documents, showed that (a) collaboration qualities and (b) functions of feedback were the two foundations that helped participants successfully work together. The following section elaborates upon these qualities and discusses how participants were able to use collaboration and feedback to work together in an effective manner.

**Collaboration qualities.** Digital peer review is an extraordinary environment for collaborative work (Jelderks, 2012). The use of Microsoft Word for commenting allowed for partners to share their work digitally and make comments on each other's work (Kayacan & Razi, 2017). Armed with their rubrics and writing checklists, along with the insight of having already written their own compositions, participants began to make comments such as adding more details, replacing words for better vocabulary, and having their partner clarify what they were trying to convey. "Please give more key details," remarked Natalie to her partner. "Try adding something else in this space to sum up how he got the call and why," commented Harriet on her partner's essay. These two examples are just a few of all the collaboration that went on amongst partners. Philippakos (2007)
echoes the need for giving peer feedback stating that feedback can help a writer develop a sense of audience and allow them to shape their writing for who it was intended for. This collaboration among partners indeed helped shape the writing of each other's work.

Collaboration is an important principle in writing because it motivates students and gives opportunities for community (Wichadee, 2013), it improves writing (Deveci, 2018), improves student attitudes (Franco & Unrath, 2015) and provides opportunity for partners to produce effective work.

One phenomenon that showed up during the study was the lack of responses to comments made on a partner's essay, therefore a lack of collaboration on one side of the partnership. On some essays, only one of the partners commented and the other did not respond (see Figure 4.14). There could be several reasons why some participants did not respond and will be one of the limitations discussed later in chapter five. A study conducted by Liu and Randall (2003) found that their students did not view the feedback they received as effective. Viewing partner comments as ineffective could potentially be a reason some participants in this study did not respond to their partner's comments.

Echoing the same ideas, Philippakos (2017) found that the participants in their study also did not value their partner's feedback. For this study, a lack of response could be that participants did not value their partner's feedback, or the feedback may not have been explicit or implicit enough for them to understand what changes they wanted them to make (Bradley & Thouesny, 2017). Although participants were not specifically asked why they did not respond, a reasoning for lack of collaboration could be any of these reasons and may answer why they did not work together in an effective manner.
Functions of feedback. Providing feedback to their partner was each participant's goal when working on the digital peer review. In providing feedback, students take what they have learned from their own experiences and transfer that knowledge to help them review their partner's work (Slomp, 2012; Lobato, 2014). Partners provided a great deal of feedback and received feedback as well. These comments were met with (a) compliments, (b) compliance, and (c) reassurance. The following sections will discuss each of these components of feedback and how they contributed to partners working together effectively.

Compliments. When reviewing the comments participants made on each other's work, there were often cases of compliments between the pair (See Figure 4.15). These ranged from participants stating their partner did a great job to tell them that they hope
they got an "A". Along with the compliments came the gratitude from their partners in the acknowledgement of a job well done. Because student attitudes are directly related to their writing performance (Bulut, 2017), it was important for the participants to give compliments to their partners. When being evaluated, students will respond one of two ways, positively or negatively (Bulut, 2017), so it is important for compliments to be instilled in the conversation between partners for the experience to remain positive. Many of the participants did a good job of telling their partners they were doing a good job of staying on topic and answering the text dependent analysis question. These compliments were essential in working together for the goal of a satisfactory essay.

| Figure 4.15. Partners Complimenting Work. |

**Compliance.** Participants were receptive to their partner's feedback. They often remarked that they would try what was suggested or asked for more clarification of what they did wrong. During this time of giving and receiving feedback, it is important for the
participants to listen and take the advice of their partner. Because of the interactions between participants, learning is taking place at a faster pace and the need for compliance is essential to success (Andrew & Smith, 2011).

Figure 4.16. An Example of Compliance Between Partners.

The partners in Figure 4.16 are a great example of compliance. At first, when Ethan gives Harriet feedback, which is to not capitalize each first letter of the sentence, she is reluctant to listen. Instead, she questions him and tells him she likes capitalizing every word. Although Ethan is giving great feedback to his partner, Harriet is still not quite ready to listen. Finally, after asking Harriet if she desired to do well on this task, she decides to comply. Although this exchange may have been frustrating for Ethan, his insistence pays off and he has his partner comply. This leads to a change in the document and for the participants to be successful in giving and receiving feedback. This type of
exchange is also a great example of participants working together effectively for the good of the pair.

**Reassurance.** Within their communities, students rely on each other to build their own schema which also helps them to build their writing composition skills (Powell & Kalina, 2009; McKinley, 2015). When working with a partner in peer review, providing reassurance is as important as providing the feedback. Participants in this study seemed to be conscious of the fact that they were critiquing someone else's work. Often, participants were reassuring their partner that they were doing a good job. In Figure 4.17, Natalie is providing reassurance to Philip that his work is looking better and that the work he is doing is getting noticed. Philip replies with a simple, "Thank you", to show his appreciation to Natalie. In this exchange, the partners are effectively working together to keep Philip's attitude positive so that he will continue to engage in the work and continue to improve. Figure 4.18 is another example of reassurance from the same partnered pair, but in the second example, Philip seems as if he is reaching out for reassurance from his partner. Natalie recognizes his negative attitude and immediately steps in to reassure him. Philip then responds with a more positive attitude and appears to feel much better about his work. Again, collaboration provides motivation for students (Wichadee, 2013) and using reassurance as a type of feedback keeps the participants in the study motivated to work effectively.
Improving composition. One of the aims of this study was to see if digital peer review improved student composition. Participants in this study have a firm foundation in the mechanics and structure of writing composition but have had little experience with analyzing text. When participants evaluated their peer's work, they often made...
comments on how to improve their composition through (a) grammar and spelling and (b) organization. The participants seemed to feel comfortable giving feedback in these areas. One reason participants could be comfortable with this type of feedback is that these are low-skill areas that participants have worked on for years, so they feel more confident in relaying this type of feedback (Miller & Olthouse, 2013). Participants also gave feedback on how to better organize their essay such as adding transition words, adding introductions and conclusions, and having better structured sentences. The following sections will elaborate on how participants helped their partners improve their composition through correction of grammar and spelling and better organization.

**Grammar and spelling.** The simple view of writing model states that writing is the product of lower-order skills like spelling mixed with some higher-level order thoughts and ideas by the writer (Poch & Lembke, 2017). These lower order skills are not always looked at as important, but without these skills, students would not be able to get their fundamental ideas across. Participants in the study often sought out these lower-order areas to begin giving feedback to their partners. Many asked their partners to add commas and other punctuation or told them that they misspelled a word. Some participants referenced capitalization. Figure 4.19 shows the exchange between Chase and Malikah and the valuable feedback provided by Chase on the grammar and spelling errors in her work. With this feedback, now Malikah can make the necessary changes in her essay to bring her ideas into focus.
Figure 4.19. Giving Feedback on Grammar and Spelling.

Figure 4.20 is another example of a participant giving feedback on capitalization errors. Steven is telling his partner Ophelia that she needed to capitalize one of the proper nouns in her essay. Ophelia gives a response where she disagrees, but after Steven makes the feedback clearer, Ophelia accepts the feedback and makes the change. The feedback given and received by these participants is reflective of Miller and Olthouse's (2013) and Poch and Lembke's (2017) research on student-focused lower-order feedback. Participants could have possibly been hesitant in giving higher-order feedback when evaluating their partner's work because they may not have completely understood how to give valuable feedback (Philippakos, 2017) and therefore relied on what they knew to help their partner. Connecting their feedback to the mechanics of writing did improve the composition of their peers and was considered good feedback in this study.
Organization. One of the components of good writing composition is the organization of information. When discussing student attitudes toward writing, one possibility for a negative attitude is a lack of organization with the content of the essay (Kim et al., 2016). This lack of organization leads to confusion for students and an adverse attitude toward writing. Organization of information typically begins in the pre-writing, or planning, stages of writing (Flower & Hayes, 1981; Gailbraith, 2009). It is at this stage of the writing process that the writer takes the information they wish to express to their audience and organizes it clearly and logically. For the participants in this study, there were examples of participants offering feedback about the organization of their partner's writing composition. Figure 4.21 shows the feedback from Renee to Aaron.

For this essay, Renee offers Aaron the feedback of placing transition words in his essay.
With this advice, Aaron's essay will be able to show the progression of his ideas from beginning to end. As we see from this example, Aaron takes his partner's advice and the essay reads much more smoothly. In the study, participants were able to help their partners increase their writing skills by providing feedback on the structure of their essay. For some partners, the skill level of their writing may be much higher, and they are able to offer their experiences to improve the essays of their partner (McKinley, 2015). Organizing ideas is a lower-order skill, however transitioning ideas effectively from the beginning of a composition to the end is a higher-order skill (Poch & Lembke, 2017). Providing this type of feedback improves the composition and encourages a higher level of writing for all participants.

Figure 4.21. Feedback on Organization

The experience with digital peer review appeared to be positive for all participants. Participants valued giving feedback to their partners and receiving feedback
as well. As evidenced from the Microsoft Word comments, participants used the feedback to improve their compositions, adding the suggested changes made by their partners to their existing work. Participants were also able to sharpen their skills in text analysis, an area not many participants have had much experience in. Collaboration was a key component in this study as it was important for the partners to form a good, working relationship to be successful. Digital peer review can be an effective tool for revising work (Liu & Sadler, 2003). In chapter five, discussion will continue about the effectiveness of digital peer review for this study.
CHAPTER 5

DISCUSSION, RECOMMENDATIONS, IMPLICATIONS, AND LIMITATIONS

The purpose of this action research was to explore the implementation of digital peer review for third and fourth grade gifted and talented writing students. This chapter presents the findings in relation to the research questions and the literature regarding digital peer review. In addition to a full, detailed discussion, recommendations, limitations, and implications will also be discussed in this chapter.

Discussion

The quantitative and qualitative data collected and analyzed were joined to answer the two research questions of this study. The discussion portion of this study is broken into two parts to provide a detailed understanding of the findings, one for each research question: (1) How and to what extent does digital peer review impact writing composition for third and fourth grade gifted and talented students? and (2) How does digital peer review impact the third and fourth grade gifted and talented students’ attitudes toward writing?

Research Question 1: How and to What Extent Does Digital Peer Review Impact Writing Composition for Third and Fourth Grade Gifted and Talented Students?

For many years, peer review has been a positive component in the composition of writing and can be conducted in one of two ways: (1) face-to-face with a partner or group...
or (2) online using a digital platform (Liu & Sadler, 2003; Guardado & Shi, 2007; Branham, 2012; Philippakos, 2017). To determine if participants' writing composition was impacted by digital peer review, the results from all four data collection methods were analyzed and combined. Data from pre- and postassessments, student artifacts, participant surveys, and participant interviews were examined to provide an accurate depiction of the impact digital peer review had on student writing composition. Four categories appeared during the data analysis cycle of this study in connection with the impact that digital peer review had on writing composition: (1) use of online resources, (2) lower order skills, (3) analysis of text, and (4) self-reflection.

**Use of online resources.** After examining and comparing the collected data from the pre and postassessments, the use of online resources made no impact on student writing composition when looking at the participants as a whole. When comparing the preassessment ($M=50.88$) to postassessment two ($M=50.41$), completed after participants took part in the digital peer review intervention, there was no increase in mean score, in fact it stayed virtually the same. This is in contradiction to Aydawati et al.'s (2019) study of the use of digital peer review activities in student writing performance. In Aydawati et al.'s (2019) study, the researchers implemented the use of peer review using the online platform Google Docs. The researchers allowed participants to use peer review synchronously, meaning participants and instructor would interact simultaneously, or asynchronous, meaning participants would work at their own pace and material would be provided by the instructor (Aydawati et al., 2019). This is different from this study in that participants only used asynchronous digital peer review. The researchers found that participant's writing skills improved due to the peer review activities in Google Docs;
however the researchers also found the synchronous digital peer review had more of an effect than the asynchronous, which is something to consider for this study and a possible reason for digital peer review not having an effect on student writing composition. The same was true for Kayacan and Razi (2017) in their study with Turkish high school students. Their findings from the first assignment to the last assignment, showed a slight increase in mean score for those students using peer feedback. Both research studies show the positive impact of online resources on their participants' writing composition. Unfortunately, in this study, the online resources did not make as much of an impact on participant writing composition.

In this study, there is more of an impact on an individual basis, as seen by individual participant scores. When comparing the preassessment to postassessment 1, only 29% of students saw improvement in their score with traditional instruction. When comparing the preassessment to postassessment 2, which was completed after the intervention, 53% of participants' scores stayed the same or improved. The individual scores of participants show that the intervention had an impact on some students' writing composition. This could be because the online resource of Microsoft Word commenting used by peer review partners was beneficial in helping them create a better writing composition piece. For example, Malikah's score rose seven points from the preassessment. When looking at the Microsoft Word commenting made by her partner, it was clear to see that her partner took time to be thoughtful and encourage Malikah to make improvements to her writing. As seen in Figure 5.1, not only did Malikah's partner flood her document with useful comments, but he offered her encouragement as well.
Provided Malikah took her partner's advice to improve her work, this could have led to her improved score.

Jennifer also improved her score and discussed her personal experience with the use of digital peer review and the impact it made on her writing composition. When asked what she enjoyed about the use of the online resources of digital peer review, Jennifer stated:

"Um actually I like that [peer review] because I didn't think I would mess up. I just thought it was all right, but then when he just founded all those things that I
needed to fix it, I thought it was a good thing that I needed to know for me to have."

Jennifer's previous writing experience led her to believe that she did not need a peer to help her with her writing. Fortunately, Jennifer trusted her partner, as well as the process of digital peer review, and this benefitted her greatly, as well as changed her attitude about digital peer review. These two examples of individual success with the online resource of digital peer review shows that although there was not a greater impact across all participants, there were some individual impacts the resource had on participants, and ultimately impacting their writing composition skills.

**Lower order skills.** Lower order skills in writing are skills that are the basics of writing such as spelling, punctuation, and proper grammar (Poch, 2016; McCutchen, 2006). It can also be basic transcription skills (Poch, 2016; Wollscheid et al., 2016). In looking at the comments made by participants to their peer review partner, most participants felt comfortable making comments on spelling, punctuation, and grammar. This is evidenced by the fact that every participant made a comment about some form of grammar to their partner. This abundance of lower order feedback is mirrored in Miller and Olthouse's (2013) study on critical thinking for offline and online feedback. Miller and Olthouse (2013) found that only 34.4% of their participants exhibited critical thinking in their feedback. The participants mostly gave feedback on the correction of lower order skills such as punctuation errors or misspellings. Miller and Olthouse (2013) further pose that a possible reason for this lack of critical thinking in feedback is the absence of direct instruction on the part of the instructor. Yalch, et al. (2019) also support the idea that students need explicit training on how to give effective, higher order
peer review to their partners. In their study, Yalch, et al. (2019) found that just giving students a rubric was not enough to provide critical review, therefore participants relied on their own writing experiences, thus leading to the lower order feedback. In the case of our study, the researcher modeled, and had participants practice giving feedback, but there may have been a need for more practice and modeling for some students for higher level feedback to be given more frequently.

Simple-View-of-Writing Model states that writing is the product of lower order skills and higher order invention or imaginativeness (Poch & Lembke, 2017). At the base of the lower order skills are transcription level skills, or skills in handwriting and spelling. The feedback students were giving may have been lower order, but it was not deemed as unimportant. For some of these participants, writing is still about the lower order, transcription level skills. They feel it is important to have the words spelled correctly, for punctuation to be in the correct place, and for names of places to be capitalized, as seen in Figure 5.2. Participants seemed to feel that the best way to help their partner was to give them the feedback they felt comfortable giving.

In interviews, participants mentioned lower order feedback as one of the ways in which their partner helped them improve their writing. In fact, there were originally 17 individual codes for grammar in the participant interviews, some participants mentioning the same type of feedback more than once. When asked how her partner helped her with peer review, Destiny responded, "Mine was just like one big sentence and she told me, to like, do commas and make, like, more sentences." When asked how his partner's feedback helped him to make changes to his writing composition, George responded, "It helped to make changes to my writing, um, because, um, I got a misspelling in my
writing." Both Destiny and George felt that their partner's lower order skill feedback was important to them. Even if feedback is basic and considered lower order, it is still impactful to the structure of the composition.

Figure 5.2. Example of Lower Order Feedback.

In interviews, participants mentioned lower order feedback as one of the ways in which their partner helped them improve their writing. In fact, there were originally 17 individual codes for grammar in the participant interviews, some participants mentioning the same type of feedback more than once. When asked how her partner helped her with peer review, Destiny responded, "Mine was just like one big sentence and she told me, to like, do commas and make, like, more sentences." When asked how his partner's feedback helped him to make changes to his writing composition, George responded, "It helped to make changes to my writing, um, because, um, I got a misspelling in my
writing." Both Destiny and George felt that their partner's lower order skill feedback was important to them. Even if feedback is basic and considered lower order, it is still impactful to the structure of the composition.

**Analysis of text.** The assignments and assessments completed in this study were all narrative, writing analysis. As stated before, participants were required to read a text and complete analysis of the text. Although the postassessment data did not show an impact on writing composition, it did show a small impact in text analysis. Text analysis, commonly referred to as evidenced-based writing or argumentative writing, has students read a passage or even a series of passages or text and form an argument in favor of one idea, or point, someone is trying to make (Lam et al., 2018; Lee, 2018). In this study, participants read a passage and then answered a text dependent analysis question that was related to that passage. In all questions, participants had to use evidence from the passage to support their answer. When looking at the results of the postassessments, the analysis shows that as a class, the mean score did not increase and therefore participants did not improve their analysis skills. Furthermore, when looking at the type of peer feedback each participant gave to their partner, most feedback was lower order as described in the previous section on lower order skills. Perhaps a different approach to digital peer review would have led to more successful results. Looking at the research conducted by Lam et al. (2018) may help in this predicament.

The study conducted by Lam et al. (2018) used a blended approach to teaching argumentative writing. Using Edmodo, participants worked together to leave feedback for their peers. The researchers saw a significant improvement in student writing due to the implementation of Edmodo. The researchers felt that this increase was because many
participants could contribute at the same time and participants felt comfortable giving and receiving feedback (Lan et al., 2018). The same was true in Wichadee's (2013) study of using online tools to improve student summary writing ability. As in Lan, et. al.'s (2018) study, Wichadee (2013) used an approach where participants worked together to provide feedback to a student. Wichadee (2013) saw his participant's writing scores increase due to this type of implementation of digital peer review. Conducting peer review in a small group is beneficial in that students are given more diverse feedback and can clarify any misunderstandings about the feedback they are being given (Gayle Morris Sweetland Center for Writing, n.d.). More about using groups versus partners in digital peer review, and its effect on student writing composition, will be discussed in the implications section of this chapter.

There was evidence from the analysis of the Microsoft Word comments that some of the participants looked to give feedback on text analysis. There were multiple examples of participants giving this type of feedback such as:

Steven: "You did not compare your story to the text."

Jennifer: "Tell why you felt like you were being brave."

Barry: "Needs at least 2 or 3 pieces of evidence to prove your point."

Natalie: "Please give more key details."

With each piece of feedback, the peer reviewer's partner was able to go back and make changes to their work which impacted their composition. Along with asking for better analysis, peer reviewers often gave feedback on the evidence given by their partner, or lack of evidence. For example, Kevin asked Barry to correct his piece of evidence from the text: "His dad did not say he couldn't raid a castle. He said he couldn't herd because
he was too small." In Barry's interview, he reflects on this part of the peer review: "He also [said] I accidently said a castle instead of cattle." This feedback was impactful for Barry because he not only used the feedback to improve his writing composition, he remembered it and later spoke of it in the interview. Other peer reviewers in the study asked their partners to add direct evidence from the text, give better evidence, or to add more. These types of feedback on text analysis were impactful to the writing composition of participants.

**Self-reflection.** One of the aims of peer review is for the reviewer to not only help their partner but help themselves. Peer review allows students to feel more responsible and self-confident in their work and rely less on the teacher (Zainnuri & Cahyaningrum, 2017). Self-reflection is often a positive byproduct of peer review and in this study, it impacted participant writing. Philippakos (2017) also states that students can use peer review to work through trouble areas in their own work and make needed corrections. In the interviews, participants were asked how peer review impacted their own work. Natalie stated that she liked peer review because she was looking at someone else's work and not just her own and "Maybe I got an idea from there's or maybe I saw mistakes in theirs, so I thought I made it." Frank stated, "I can check my partner's work and like some of the mistakes are like the same ones I like do, so I could go back and make them correct." Both participants used the review as a means for reflecting on their own work. In this way, self-reflection was impactful on student writing.

Self-reflection also facilitates active learning. Active learning is when students work together to foster their own learning (Rietdijk et al., 2018). For this study, self-reflection is exemplified in some student artifacts. In Figure 5.3, the interaction between
peer reviewer and participant shows that the peer reviewer has been reflective of their partner's work. Although the reviewer does not directly tell their partner that they used the feedback in their own work, there is clear reflection in the comments and the reviewer sees their partner's work as exemplar. In her interview, when asked in what ways she reflected on her own work when reviewing her partner's, Destiny said, "Add detail probably because mine had, it like had detail, but not enough really." For students, self-reflection when peer reviewing is important because it helps fill gaps in their own writing. Digital peer review facilitates active learning and in turn enables self-reflection. The participants in this study became managers of their own learning which impacted their writing composition skills.

![Figure 5.3. Word Comments Show Self-reflection.](image)

**Research question 2: How Does Digital Peer Review Impact the Third and Fourth Grade Gifted and Talented Students' Attitudes Toward Writing?**

Student attitudes in writing can be influenced by several variables such as experience (Daiute, 1986), self-efficacy (Berk & Unal, 2016), success (Heddy et al.,
To determine if student attitudes were impacted by digital peer review, the results from student artifacts, participant surveys, and participant interviews were triangulated to provide a glimpse inside how student attitudes were impacted. During the process of collecting and analyzing this data, three categories emerged regarding the impact on student attitude: (1) contributions to attitude (before and after intervention), (2) working together (functions of feedback and collaboration), and (3) positive experiences (building trust and positive contributions).

**Contributions to attitudes.** Participants were given a writing attitude survey to measure their attitudes toward writing before and after the intervention. The paired sample t-test indicated a significant difference in survey results of the presurvey ($M=76.82$) and postsurvey ($M=81.41$) indicating an increase in student attitude due to digital peer review. Participants stated there were many things that contributed to their attitudes before and after study. Many factors contribute to student attitude but the three most common are cognitive, affective, and behavioral (Bulut, 2017; Ekholm et al., 2017). Participants elaborated on all three of these factors as they spoke through interviews and surveys. After reviewing the data, the researcher found that student attitudes had a dividing line: (a) before digital peer review and (b) after digital peer review. The following sections will elaborate on how students felt before the intervention and then how they felt after.

**Before digital peer review.** When reviewing participant interviews, the researcher noted that students often stated their pre-intervention attitude toward writing was that it was boring, complicated, and made them anxious. Heddy et al., (2016) discuss in their research how affective factors such as mood and emotion contribute to student attitudes.
These moods can be short-lived or long-lasting depending on the strategies used to help the student during the writing process (Graham et al., 2007). When students learn a new concept, their attitude can be heavily impacted by the experience. "I thought a little more uptight about my writing and kind of nervous about what I did and if I made a mistake," said Natalie. Berk and Unal (2016) state that students who have a disposition of not being a good writer tend to have higher writing anxiety. Clearly Natalie's experience has been about feeling the pressure of doing well when it comes to writing, maybe even experiencing some failures. Altunkaya and Topazkanamis (2018) state that to get the very best out of students, good writing is dependent on their cognitive abilities as well as the support they get from teachers, parents, and classmates. Scaffolding is very important to cognitively changing student attitudes toward writing (Kim et al., 2016). Vygotsky believed that students who scaffold with someone of more experience or knowledge helped to develop skills (McKinley, 2015). This is reflected in Lee's (2018) research on scaffolding evidence-based writing for English learners. The researchers found that supporting students with small steps along the way would best help them with their composition skills, thus improving their attitude. Chaktsiris & Southworth (2019) also stated in the findings of their study that scaffolding writing is beneficial in the process of peer review. In our study, the participants were the ones that were the scaffolders.

Figure 5.4 shows feedback given to partners that helped participants improve their work and therefore change their attitude toward writing. According to the data collected with the presurvey on student attitudes, participant mean score ($M=76.82$) was slightly above average, which tells the researcher that the overall attitude is somewhere between somewhat happy and somewhat upset Garfields (Kear et al., 2000). The aim of this study
was to see if digital peer review would increase the overall writing attitude, so results from the postsurvey were an important part of answering this question and are further examined in the next section.

**Figure 5.4.** Example of Scaffolding for Participants.

*After digital peer review.* Postsurvey results ($M=81.41$) reflect an increase in student attitude showing that the digital peer review had an impact on student attitude in this study. When looking at specific survey question results, there were several that had significant increases. For example, the survey question *How would you feel if your classmates talked to you about making your writing better?* the presurvey score ($M=2.94$) and postsurvey score ($M=3.35$) showed a difference in mean of ($M=0.41$), indicating that after the intervention, participants felt more comfortable with having a peer read their writing. These positive results reflect what Berk and Unal (2016) say about self-efficacy. Students might attach emotion to their work and this in turn plays a major part in what sort of attitude they will have towards their work. Asked how peer review made them a more confident writer, Destiny stated, "Because they basically can help you more and to be a better writer." When Ophelia was asked how she felt about writing before the
intervention she responded, "I thought it was a lot more complicated because you didn't know if it was right." Later Ophelia was asked what she liked about digital peer review, "...I liked them telling me [feedback] because you know, I didn't know which way to do, the, to do it." Both Destiny and Ophelia attach success to digital peer review, therefore their self-efficacy, or how they feel about their work, increases as well as their attitude toward digital peer review.

In their study, Franco and Unrath (2015) found that when students began to meet with their peers, their attitudes in writing began to improve. This previous research is aligned with the current study's findings of improvement in student attitudes toward writing. Another survey question How would you feel if your classmates read something you wrote? had a stronger postsurvey score ($M=3.17$) compared to the presurvey score ($M=2.70$). This question analyzes how students feel about others looking at their writing and we can see that participants felt much more confident after the intervention. This study reflects what much of the research says: students feel more confident when they have help from others. Student attitude is directly affected by peer review, and it was clear from the participant interview responses that the intervention made an impact on their attitudes.

When speaking directly to participants about their experiences, the researcher noted participants reflected positively about how the intervention made a difference in their attitude toward writing. "I kind of hated writing, but after peer review, it was a little bit of peer review that changed my love for writing," stated Barry. "Well after it was kind of fun because you know, you get to read other people's stories and not just focus on your own thing," said Ophelia. These two statements reflect a positive change in student
attitude. Barry had very strong feelings attached to writing, using the word hate to describe the emotions he had attached to writing. It is not uncommon for students to attach emotion to their work (Driscoll & Powell, 2016). Research states that some of student attitude stems from behavioral factors. Schunk and Zimmerman, (2007) stated that a student's behavior is directly linked to their self-efficacy. In writing, behaviors can be how students choose their writing topic, the amount of effort put into their work, or the ability to push through when they have writer's block (Schunk & Zimmerman, 2007).

Bulut, (2017) states that to bring about change, it is important to understand what factors contribute to a negative attitude. When evaluating a student attitude's toward writing, looking at their behavior during writing should be a part of the equation. In Barry's case, possibly some behavioral factors were that he did not like sitting still for long periods of time or maybe he had a hard time generating ideas in writing. Whatever the reason, the idea is for the instructor to shift student attitudes toward the desired attitude (Kim et al., 2016) For this study, and in Barry's case, we situated writing inside digital peer review to shift negative attitudes. Barry's attitude could have shifted in a negative way if he had not had a good experience. Instead, after evaluating the situation, Barry seems to have shifted his attitude toward a more positive one.

Ophelia stated that what helped improve her attitude was the fact that she was able to read another participant's writing. Perhaps Ophelia's shift in attitude came from being able to experience how others write, so her positive shift was more about the collaboration, much like Deveci's (2018) study. The findings for Deveci (2018) proved that the participants in his study saw value in collaboration which also helped improve their writing. In the present study, collaboration between partners brings a bit of
vulnerability and openness about participant work and finding value in that can only lead to a more positive attitude.

**Working together.** Piaget and Vygotsky have long been contributors to theories that are rooted in community. Although they had differing ideas of how learning and development happen, they both agreed that students learn best when the community around them is invested in them (Powell & Kalina, 2009; McKinley, 2015). Also, working in community often makes for a more positive attitude. For this study, one of the aims was to have a small community of collaborators to support student writing and see how this would affect student attitude. After analyzing the data, the researcher found that two factors emerged that contributed to students working together: (a) functions of feedback and (b) collaboration.

**Functions of feedback.** Participant comments on their partner's work revealed how feedback played a role in student attitude. In this study, it was found that (a) compliments, (b) compliance, and (c) reassurance were all effective in creating a positive environment, thus leading to a positive attitude in writing.

**Compliments.** Figure 5.5 shows an example of participants giving compliments to their partner. At the beginning of this study, we discussed how to give feedback in a positive way and how compliments are important for our partners to remain optimistic about their writing. Altunkaya and Topuzkanamis (2018) state that attitude is not a behavior to observe, but rather is reaction to a given situation. In this study, how students reacted to their partner's work was important. Giving compliments was one way in which students could create a positive experience for their partner. Also, if participants had only given instruction, their partner may have reacted in a more negative manner.
Compliance. When participants gave feedback to their partners, the goal was for the partners to take this feedback and revise their original work. For the most part, feedback was well received, but one pair displayed some resistance to the feedback of their partner. In the participant interview, one of the partners revealed the frustration of their partner being noncompliant during the peer review process. When asked in what ways did reviewing his partner's work make him like the experience less, Ethan revealed, "It made me like it just a little bit less because she wasn't really, she didn't write that many words right and she was not listening to me." We can see that the experience with this partner made Ethan enjoy peer review less. Had Ethan been with a more compliant partner, maybe he would have enjoyed it more. Fortunately, as seen in Figure 5.6, Ethan and his partner worked things out and she became more compliant. This experience shows how a negative experience can lead to a negative attitude. Negative efforts can
lead to stubbornness and less adaptive strategies for students (Graham et al., 2007). In turn, these negative efforts have a domino effect on the partner who is trying to give feedback and be helpful. Although this example of noncompliance happened only to these two partners (all other partners showed compliance in their efforts in digital peer review), it is a testament of how compliance adds to the experience in digital peer review and effects student attitude.

Figure 5.6. Example of Compliance in Word Comments.

Reassurance. Reassurance is also an important part of feedback. Some students came into this study with negative attitudes toward writing. Adding to that, they had to be open to the experience and share their work with their partner. This creates a vulnerability amongst the participants which in turn allows them to grow as a writer. Participants showed that reassurance was something they felt needed to be a part of the experience by responding in positive manners toward their partners. In one example, a
participant relayed to their partner how he was amazed at the length of her composition and how he could never write that much. His partner commented back and said, "It is okay. You don't have to make it this long." Instantly, the partner was relieved to hear this, and he indeed worked on the length of his work. Had his partner not reassured him, he may have become anxious about his own writing and not worked to get his writing up to a higher standard. Again, this sense of community, where the participant feels the responsibility to encourage their partner, is an important part of peer review and important part of shaping attitudes toward writing.

**Collaboration.** Collaboration better supports motivation in writing as well as provides opportunities for students to help each other (Wichadee, 2013). Peer review, a form of collaboration, promotes active learning (Rietdijk et al., 2018) and promotes a feeling of community (Andrews & Smith, 2011). Peer review allows participants to "model enthusiasm, encouragement, motivation, and coping" (Miller & Olthouse, 2013, p. 68). The collaborative model allows opportunities for writing to be reviewed by their peers (Branham, 2012) and in this study, participants gave feedback on the content of essays, pointing out areas that needed improvement. This collaboration between partners provided a unique relationship between the pair. The following are some examples of participant comments on Microsoft Word documents:

- Natalie: "Please give more key details,"
- Aaron: "I think you should change have and replace it with first,"
- Leslie: "Reread your document to make sure it makes sense."

Working together, participants were able to collaborate and help improve each other's writing. An advantage of collaboration is that the responsibility falls on the student and
is removed from the teacher (Wichadee, 2013). Destiny discussed this in her interview: "...it just is like an easier way than the teacher having to go and do all of them and make sure it's right and then we can just help our partners out."

One disadvantage in online collaboration was brought to light during the interviews. When asked what they would improve about digital peer review, both Destiny and Natalie stated that they missed the interaction brought about during peer review. "I like kind of moving around, getting with your friends, talking to your friends," said Natalie. Destiny stated that she would like more of a face-to-face interaction and added, "It's harder to like explain it over like text messages." Wichadee (2013) states that technology is not always the key factor to success, which is backed by Natalie and Destiny's statements. Both participants realize that the component of interaction, the community, is the important part of peer review. Their statements are reinforced by Liu and Sadler (2003) as well as Miller and Olthouse (2013) on their stance of using digital peer review. The researchers state that digital peer review does not always provide significant improvement in peer feedback skills. Implementing digital collaboration, such as digital peer review, into the classroom is a great way to bring community to the classroom. Instructors putting their classroom needs first is what's important, whether peer review is in a digital format or not. If this is not an instructor's first consideration, student attitudes could suffer. More on peer review implementation practices for instructors will be discussed later in this chapter.

**Positive experiences.** One of this study's goals was to explore what factors contribute to creating positive attitudes during writing. The hope was to use digital peer review to break away from traditional instruction in writing and explore a new,
innovative way to conduct writing instruction. After analyzing the data, two factors stood out as ways to build a positive experience: (a) building trust and (b) positive contributions of peer review. In the following sections, we will discuss what consists of these factors as well as compare those findings to the research.

**Building trust.** Trust is most likely the most important aspect of any relationship. Add to that relationship a component where someone is reading your work and giving you feedback, and I bet most would agree that trust is imperative. In this study, students felt comfortable with someone else viewing their work. Student perceptions were that their partner had their best interest at heart and that their partner offered valid, reliable feedback which in turn helped them improve their writing. When asked in her interview about her experience with digital peer review, Natalie responded, "Nobody else had seen my writing…but since we had peer review in the study, it made me feel better because my partner saw my work and they made nice comments on it." In her response, Natalie is expressing her possible anxiety over showing someone her work, but after the intervention, she sees the positives rather than holding on to her nervousness. In preparation for peer review, the participants and researcher discussed the importance of being honest with our partner. On the other side of this is a trust that your partner is not out to get you, but rather to help you improve. When asked how peer review made her more confident, Ophelia stated in her interview:

"Cause I know that if I get it wrong, there's somebody else there, to you know, tell me or like help me a little bit and not tell me the full thing so I can figure out on my own."
George stated in his interview that one thing he liked about peer review was his partner checking his work and being able to see the mistakes he made in his writing and correcting them. Both Ophelia and George see the importance of their relationship with their partner as someone who is there to support them. They do not see them as a threat or a hinderance, but rather as an ally.

The findings of this study are supported by theories in learning and development, such as both Piaget and Vygotsky's Theory of Learning and Development that stated learning is linked to community (Andrews & Smith, 2011). Piaget and Vygotsky had differing opinions about development in that Piaget believed development comes from new experiences while Vygotsky believed development came from the child's interactions within the child's environment (Andrews & Smith, 2011). Cognitive Process Theory (Flower & Hayes, 1981) suggest that writing is shaped by activities the writer participates in. Cognitive Process Theory teaches that writing is "recursive in nature" (Deane et al., p. 32, 2008) and that the writer goes through many stages while writing a composition. Having a good understanding of the cognitive process students go through and implementing instructional strategies that helps them through this process, will help generate better writing by students. Peer review is one of the ways students can work through this process to improve their writing. In this study, participants demonstrated that the cycles a writer goes through to produce good work are important. Participants wrote their first draft, had their partners give them feedback, corrected their work, had their partners give feedback a second time, and then made final revisions and edits. Participants stated in their interviews that they enjoyed helping their partners as well as receiving feedback. Building trust through peer review helps students not only improve
their writing (Chaktsiris & Southworth, 2019), but also to recognize the process that is necessary to be successful writers.

In Chaktsiris and Southworth's (2019) study on how peer review impacts writing development, the researchers found that building trust was a crucial part of peer review. Their participants expressed that after a sense of trust was established, then peers were able to collaborate and give constructive feedback (Chaktsiris & Southworth, 2019). Building trust and community is a crucial part of peer review. As we know, learning is directly linked to community (Andrews & Smith, 2011). Learning and growth happens quickly as students interact with others. Constructivism lends itself to the idea that students learn within their communities (Powell & Kalina, 2008; McKinley, 2015). In this study, giving participants the opportunity to interact with their classmates through partner work creates better writers (McKinley, 2015). Better writers create better attitudes for students because their disposition, or how they feel about themselves, is often reflected in the caliber of their work (Driscoll & Powell, 2016). Building a trust is how we improve writing composition as well as student attitudes.

As stated before, some students expressed some anxiety or nervousness about their writing before the intervention took place. In the beginning, there may have been some anxiety about sharing their writing, thus making it hard to form that trust. Berk and Unal (2016) found in their study that student disposition plays a key role in writing anxiety. Zoch et al. (2016) found that students feel less confident when left on their own to work. Peer review is a way to remedy these feelings of anxiety. When the anxiety is broken down, the trust can build. In a previous section, we discussed how Natalie
expressed her nervousness about writing. After the intervention, Natalie had this to say about peer review:

"Nobody else had seen my writing, so it was just what I thought based on what I had thought, but since we had peer review, in the study, it made me feel better because my partner saw my work and they made nice comments on it, and didn't really say, 'Well you need to change this.' They said, 'Well maybe change this to a different word or maybe change this sentence.'"

Natalie shows that even though she may have come into the study with some reservations, she was willing to be involved with her partner, to be vulnerable, and she allowed a trust to form with her partner. In the case of this study, most partnerships were built in trust, but one partnership had to work much harder to obtain that goal.

Going back to the example provided in the Functions of Feedback section, and Figure 5.6, we discussed partners Ethan and Harriet. Ethan and Harriet had a difficult time building trust. Although Ethan wanted to help Harriet, Harriet put up a defense at first and would not listen to Ethan. Although we do not exactly know Harriet's reasons for this initial reaction, there is research to help us speculate. The first is that Harriet may have benefitted more by working one-on-one with Ethan. Garlid (2014) and Jelderks (2012) both suggest that some students just prefer meeting in person with partners or perhaps meeting with the teacher. Some students benefit from the interaction with someone and working through their ideas or struggles (Garlid, 2014). Another thought is that Harriet may not have found value in her partner's feedback. Often, students prefer the feedback of their teacher and do not expect their peers to be experts in subject areas (Philippakos, 2017). Liu and Sadler (2003) stated that in their study on the effect of
online feedback versus traditional feedback, that the online feedback was not as effective as the traditional feedback. Miller and Olthouse (2013) found that most of the feedback their participants gave was lower-order and did not lead to critical thinking, which was the aim of their study. Harriet may have felt that she knew more than Ethan or that his feedback was not important and therefore would not listen. Whatever Harriet's reasoning may have been, Ethan was eventually able to pursue her enough to build trust and have Harriet make the changes she needed to improve her work. The effects of this distrust on attitudes is evident in Ethan's interview when he stated that peer review would be better if the partner listened to them. Ophelia echoed Ethan's thoughts in her interview when she stated, "So, like, if you don't make sense, they can tell you that it didn’t make sense, but if you chose to ignore that, then you would never fix it. So, then, it would like not make sense, right?" Ophelia and Ethan both understand the need for trust to improve their compositions and that ignoring their partners can only be damaging. This study, and the research behind it, proves that peer review makes an impact on student attitudes, even when the partnership starts off a little rocky, an impact is made.

**Positive contributions of peer review.** Attributing to the impact of the intervention on student attitudes is the contributions made by peer review partners. In traditional methods, the instructor conducted all the critiquing and revising with the student and there was little to no external critiquing of student work (Hairston, 1982). Digital peer review was the opposite of traditional methods since the intervention was completely student-centered. During the intervention, partners were able to make positive contributions in the following ways: (a) improvement in writing, (b) helping
others, (c) helping themselves, and (d) improving focus. The following section will
discuss the impact of peer review on student attitudes.

*Improvement in writing.* When using digital peer review, students can have a
wider audience due to the use of digital tools (Purcell et al., 2013). This allows someone
else to critique their work. Destiny states in her interview,

> I think it helped us because like our partners could have spotted out mistakes that
> we wouldn't have spot out, spotted out, and um, it just is like an easier way than
> the teacher having to go and do all of them and make sure it's right and then we
can just help our partners out.

Destiny is speaking of the improvement in her writing due to her partner's feedback, an
idea echoed by Liu and Sadler (2003) in their research. Improving writing skills is a
contributor to student attitude. As previously discussed, student attitude is attributed to
their success in writing (Driscoll & Powell, 2016). In this study, improvement in writing
was important for participants to improve their attitudes.

*Helping others.* Peer revision has been shown to help improve writing at different
levels (Miller & Olthouse, 2013). In participant interviews, students were asked in what
ways they helped their partners and in what ways their partners helped them during the
intervention. "I can help them get a better grade," said Frank. Jennifer stated, "Actually I
thought that it was kind of enjoyable because I was helping him with his writing and told
him what he needed to fix." When asked what he liked about digital peer review, Barry
stated, "Probably because you help someone out and helping someone is fun." Each
participant discusses how helping others was an important part of the intervention. In
peer review, the feedback is much more diverse, especially if students work with multiple
partners (Gayle Morris Sweetland Center for Writing, n.d.). Peer review also offers shared experiences, or schemas, for their partners (Andrews & Smith, 2011). Participants in this study helped their partners by sharing their own expertise with them. The process of helping their peers impacted student attitude in this study.

*Helping themselves.* Digital peer review can be effective in helping students revise their work (Liu & Sadler, 2003), develop critical thinking skills (Deveci, 2018), increase self-monitoring of writing (Philippakos, 2017), and enable an environment of collaborative work (Jelderks, 2012). In their interviews, students stated that they understood what to do now, know what to work on, learned from their mistakes, and overall, it was helpful. When looking at the comments made by participants on Word documents, there were some examples of participants helping themselves. Figure 5.7 is a great depiction of a participant taking feedback to help themselves. In this example, Aaron gives Renee some advice on how to improve her beginning sentence. Renee's reply to the comment shows a reflective nature. Renee has taken her partner's advice and applied it to her writing. From their exchange, we can predict that Renee will carry this feedback with her to future assignments. An aim of this study was to have students use digital peer review to improve their student attitude. Learning ways that digital peer review can help themselves is a great way to move toward improving student attitude toward writing.
**Figure 5.7.** Example of Helping Self in Word Comment.

*Improving focus.* A smaller, but important, find in this study was an improvement in focus when writing. When writing, it is important for students to be able to have a time where they can focus and concentrate on organizing, writing, and publishing their compositions, all emphasized in traditional methods of instruction in writing (Troia, 2014). In the study, participants stated in their interview how focus and concentration helped them. "I think I was more concentrated, so I focused a lot more on making it better," said Natalie. "It's kind of fun because it was kind of quiet in there and so you can concentrate and focus," added Ophelia. For these participants, being able to focus and concentrate in an environment that was conducive for good writing contributed to their experience. For some, improving student attitude means improving the environment in which they work. In this study, improving focus was a positive contribution to digital peer review and impacted student attitudes.
Recommendations for Implementation of Digital peer review in an Elementary Classroom

The purpose of this action research was to explore the implementation of digital peer review for third and fourth grade gifted and talented writing students in my classroom and to make recommendations for instructors and other stakeholders to innovate instruction in writing using technology. The findings of this study brought about three recommendations: (1) recommendations for teachers, (2) recommendations for students, and (3) recommendations for schools and districts.

Recommendations for Teachers

Teachers play a large role in the instruction of writing in the classroom. Good instructors are constantly looking for ways in which they can deviate from the traditional ways of writing instruction where the instruction is teacher-led (Rietdijk et al., 2018) to new, innovative measures in which they can change negative attitudes and facilitate learning. This study revealed that for teachers to implement digital peer review, three areas should be considered when ready to implement: (1) modeling and feedback, (2) have clear expectations for students, and (3) be open to blended learning.

Modeling and feedback. One way in which instructors can ensure student success in digital peer review is through modeling the process and having students practice as well. Researchers have stated that the best way for students to learn is through modeling (Lee, 2018). In this study, as a group, we discussed what good feedback was and was not. I also modeled several times for students how to give their partner feedback in Microsoft Word's commenting feature (Sevilla-Pavon, 2015). Participants also practiced giving feedback to a document created by me. The comments
made in this study were mostly lower order where participants gave more feedback on grammar, spelling, and punctuation. This was evidenced in their interviews as well as participant Microsoft Word documents. From the data collected in participant interviews and participant Microsoft Word comments I found a lack of text analysis feedback between partners. I feel that if we had spent more time modeling how to give feedback in text analysis, more participants would have focused their feedback here. In turn, students will be able to engage in critical thinking. Modeling feedback is important when helping students become exemplary peer reviewers.

**Clear expectations.** Along with modeling and providing instruction on giving feedback, instructors should make sure that their expectations for digital peer review are clear. Instructors should invest a lot of time in the beginning on setting up expectations for the peer review (Lee, 2018). When we began the study, I discussed with students my expectations for them. We discussed how to conduct peer review and what things we should look for in our partner's work. We also discussed making sure we did not just critique, but also praised their work as well. Students did a great job of giving good feedback to their partner and being complimentary of their work.

What we did not discuss is the expectation of giving good feedback about text analysis and this showed in the results of their assessments as well as participant surveys and Microsoft Word comments. Although text analysis was part of the rubric, and participants had experience with text dependent analysis, they did not give their partners a lot of feedback in this area. I feel that with more emphasis on the analysis, participants would have looked to give this type of feedback to their partner. If instructors choose to use digital peer review in their classrooms, and want participants to target a particular
area when reviewing their partner's work, teachers should be clear with these expectations and make them known at the beginning of the implementation, as well as remind students throughout the implementation.

**Blended learning.** In the participant interviews, a couple of students remarked about how they would have liked for some of the peer review to be offline. Some students enjoy the encounters they have with other students (Jelderks, 2012; Liu & Long, 2014). Also, when students have more than one peer they are meeting with, they get several perspectives when their work is being reviewed (Guardado & Shi, 2007; Philippakos, 2017; Gayle Morris Sweetland Center for Writing, n.d.). My recommendation for teachers is to consider a blended learning aspect to peer review. It may even be in the best interest of the class to take a survey and see which type of peer review they feel more comfortable with. Careful consideration to the needs of your students is what is most important for teachers.

If teachers choose to take the blended learning approach, there are a couple of recommendations I have. The first is to take the online approach first. These same participants that mention working with their partner also mention how quiet it was in the classroom during their review of their partner's work. They state that they were able to concentrate and focus during this time of review. For this reason, peer review should be done online first. The second recommendation is to have more than one person review the work. One set of participants had to be a trio because of the odd number of participants (Gayle Morris Sweetland Center for Writing, n.d.). Instead of matching up students in this trio, I allowed them to review two pieces of writing composition. This was very helpful because the recipient of the reviews got two perspectives. What one
reviewer might not think of, the other may point out. This is a great way to get the most out of peer review. A last consideration is to have partners then meet with each other after they have read the comments of their peer reviewer. This will allow participants to clear up any misguided information and to clarify any misunderstandings. Also, this would be a way to implement that one-on-one face time that a lot of students crave. Peer review does not have to be strictly online or offline, it can be a blended version that helps meet the needs of all students.

**Recommendations for Students**

Students are the source for which instructors implement and modify our daily lessons and long-term plans. From them, we can find out what works and does not work through conversations, exit slips, and other forms of feedback. In this study, students were open about their feelings on digital peer review and in turn, I was able to identify four areas in which students can contribute to the success of digital peer review: (1) trust your partner, (2) be responsible, (3) reflect, and (4) ignore the technology.

**Trust your partner.** Students trusting their peer review partner, whether it is conducted within an online platform or between two or more students meeting together in person, is of the utmost importance in peer review. Without trust, partners can put forth a negative attitude that does not help themselves and does not help their partner. When partners trust one another, good things happen such as improved writing composition, student attitudes improve, and students learn new skills that will transfer to other areas of study.

The aim of digital peer review, when it is conducted in writing class, is to help improve the composition of their partner, which has a direct effect on their attitude in
writing (Bulut, 2017). Partners give feedback in all different areas and look for ways to improve the composition of their partners. Students should feel supported and trust their partner will guide them to make the needed changes to improve their composition (Altunkaya & Topazkanamis, 2018).

When composition improves, attitudes improve (Bulut, 2017). Student attitude in writing is important to the success of that student. When students attribute negative feelings or attitudes toward writing, it makes them not want to give it their best and not be open to suggested feedback. Trusting peer review partners will help improve that attitude because it will help students feel that someone is looking out for them. For this study, improvement in attitude was apparent in participant interviews. Many participants mention that their peer review partner helped them improve their work, but some participants mentioned the fact that they felt better due to digital peer review because they knew someone was looking out for them, pointing out their mistakes or areas of improvement and helping them improve their composition. This trust in their partner helped to create a better attitude toward peer review.

Digital peer review not only helps improve writing composition and improves student attitudes, but it also helps transfer the skills of one knowledgeable participant to another (Slomp, 2012; Lobato, 2014). With the building of trust, not only does the student benefit from the knowledge of their counterpart, but they are able to take this knowledge and apply it in other ways. If students become guarded and not accept the feedback from their partners, they will miss out on this aspect of peer review (Philippakos, 2017). Without building trust, students will only receive a fraction of the benefits of peer review.
Responsibility. Students should feel a deep responsibility when they are reviewing their partner's work. This is because students are taking on a role like the instructor (Wichadee, 2013). They are giving the feedback to their partners that a teacher would normally give. For this reason, students should take their role as peer reviewer seriously and feel the responsibility of helping their peers.

Throughout the study, participants shared their experience with being the peer reviewer. Participants shared that they enjoyed helping their partners and giving them feedback. In the Microsoft Word documents, participants demonstrated the seriousness with which they took their role as peer reviewer by giving impactful feedback to their partners. Peer review provides a time for collaboration and an opportunity for students to help their fellow classmates (Wichadee, 2013). Responsibility in peer review leads to recipients of the feedback improving their composition as well as improving their attitudes.

Reflection. Digital peer review should also be a time of reflection for students. Often students have difficulty in reflecting on their writing, so modeling how to reflect and revise is valuable (Daiute, 1986). In reviewing their participant's work, reviewers revealed that they would often think about the same mistakes they had made in their own work. Participants stated that when they would review their partner's work, and find something that needed to be improved, they would go back to their own work and look to see if they needed to make the same changes. While reviewing, students can reflect on their own work and clear up confusing areas and make needed corrections (Philippakos, 2017). Reflection is a powerful tool in writing. Taking time to reflect can lead to improvements in composition and lead to writing composition that has more depth. A
time of reflection can occur during the peer review process as well as after. Writing is a recursive process, so reflection should be conducted throughout the cycle. Using reflection to aid them in digital peer review will be key to the success of the student.

**Ignore the technology.** Ignore the technology, or rather not letting the technology completely distract you from the task at hand. Technology is a wonderful tool in which students can utilize to advance their research, reach larger audiences, and complete assignments in innovative ways. However, technology can often be a distraction (Liu & Long, 2014). Something captured in the study was the fact that the participants simply enjoyed using their laptops to type their compositions. Participants mentioned that they love to type, and that they loved that they did not have to use pencil and paper to write some of their assignments. Overall, the technology seemed to be a motivator for students. Although it is a positive aspect of the study that participants enjoyed the use of technology, I cringed at the thought of the participants possibly placing more importance on the technology rather than the process and effectiveness of digital peer review. Students should remember that although using technology can be fun and exciting, it is not the most important part of digital peer review. Students should realize that technology is the vehicle through which digital peer review is conducted (Miller & Olthouse, 2013; Zainnuri & Cahyaningrum, 2017) and serves its purpose in this capacity.

**Recommendations for School and District**

Although digital peer review will be incorporated inside classrooms, instructors need the support and resources of the school and district to help implementation be successful. While conducting this study, two categories surfaced as ways in which
schools and districts could help instructors implement digital peer review: (1) flexibility in curriculum and (2) opportunities for professional development.

**Flexibility in curriculum.** Schools and districts in states across the United States are bound by federal and local policy to implement research-based curriculum into the classrooms of their schools (Lee, 2018). While it is important to have these curriculums in place to help guide instruction, there is also a need for flexibility within these curriculums. When it comes to writing, there is a plethora of state standards that dictate the instruction in classrooms (Lee, 2018). Although educators are bound to employ these standards in their daily lessons, the standards are broad enough that educators can be creative with their instruction.

For this study, participants demonstrated through interviews and participant surveys that they enjoyed digital peer review. Participants also stated they felt digital peer review was useful and felt they would use digital peer review in the future. To secure future use of digital peer review, the school and district could provide some flexibility in curriculum to have educators implement digital peer review into the classroom.

Flexibility in curriculum will allow for educators to implement digital peer review in their classrooms. In turn, this implementation could help to improve student attitudes toward writing as well as improve specific aspects of writing curriculum such as better written communication skills, analysis of text, and better handle on basic writing skills such as the mechanics of writing. Flexibility by schools and districts will also show educators that their district and school-level administrators trust them to be good practitioners of instruction in writing. This in turn will allow educators to step away from
scripted lessons and use the data from their classroom to design their instruction (Deveci, 2018). Flexibility with curriculum guidelines is essential to the implementation of digital peer review. Without the support of school and district leaders, educators will be unsuccessful in their classrooms and possibly grow stagnant in their quest for new, innovative ideas for their classroom.

**Professional development.** Professional development is another way in which schools and school districts can help their educators implement digital peer review in their classrooms (Kilpatrick et al., 2014; Blanchard, LePrevost, Tolin, & Gutierrez, 2016). In professional development, experts in areas of study model and lead educators to advanced ideas. Because participants in this study viewed digital peer review as valuable, it was important to share some recommendations for schools and districts to help implement digital peer review. Professional development can happen in two capacities: (1) local and (2) state/national.

**Local level.** The findings of this study show that increasing student attitude is the way in which we increase writing composition. Participants noted that after taking part in digital peer review they felt more confident in their writing abilities. For educators, implementing digital peer review could be as easy as asking a colleague. Local professional development is a great way to utilize already employed school district educators who have tried digital peer review (Blanchard et al., 2016). Often, educators look to each other for guidance when trying to resolve issues within their classrooms. Using a local district employee who already knows where to start and student needs is beneficial in productive professional development (Kilpatrick et al., 2014). Another benefit of local level professional development is that when conducted by a trusted peer,
teachers are more likely to integrate the technology or new skill (Blanchard et al., 2016). Educators are more likely to listen to a colleague who has already implemented digital peer review with success and can present data to back up their findings. Using an educator or instructional coach within the district would not only help with the financial burdens of employing professional development, but also elevate leaders within the district. Using educators for professional development also institutes a trust within the district and shows the district feels competent in their employees. For digital peer review, using an educator to lead other educators will be one of the most impactful ways to implement digital peer review. Moving forward, my plan is to be a proponent for digital peer review and to help my colleagues implement more peer review into their classrooms.

*State/national level.* Provided school districts do not have a local expert in digital peer review, school districts may be able to find a suitable state or regional professional development for educators to attend. It is important for educators to hear from those who have implemented digital peer review and can provide data as well as see products of implementation into classrooms. It is also important for educators to be able to connect with leaders in digital peer review to work out issues in their own implementation. Educators are more likely to employ the strategy of digital peer review if they see how others instituted the strategy in their own classrooms. Professional development in digital peer review is worth the effort and expense to have educators implement digital peer review effectively.
Implications

Instructional techniques in writing are ever changing and new, innovative methods continue to be explored by educators and administrators. For this reason, this study has significant implications. Three categories of implications are presented: (1) personal implications, (2) implications for the writing classroom, and (3) implications for future research.

Personal Implications

Throughout this study, I was able to gain valuable insight into my personal role in education. Reflecting on the implementation of digital peer review in my classroom has allowed me to consider ways in which my instructional strategies could be improved. The study has also shown me how valuable it is to know your students when planning instruction. For these reasons, two considerations for this section are: (1) changed perceptions about my students and (2) changed perceptions about my instructional strategies.

Changed perceptions about my students. Being part of this study in the role of participant as observer (Mertler, 2019) gave me great insight into student thoughts and feelings about writing. One thing that stood out to me is the relationship students had with each other. Throughout the data collection and analysis, it was evident that students took their role as peer reviewer seriously. It was obvious that students cared about their partners and cared about how they performed on their composition piece. This was evidenced by the comments they left for their partners in the Microsoft Word documents. Participants were often very complimentary of their partner's work and left encouraging messages. This leads me to think that in the future, more peer review should be
implemented, not just in the subject of writing. Taking on the role of peer reviewer allowed the participants to feel a responsibility for their partner's work and to take more charge of their own learning.

Something else that evolved from the study is the perception that student attitudes can be influenced by the attitudes of those around them (Bulut, 2017). Conducting surveys and interviews gave me insight into the mind of the participant and their true feelings toward writing. After implementing digital peer review, I saw that student attitudes changed to be much more positive toward writing. This change in attitude was influenced by the attitude of their partner. Again, because partners encouraged each other, most students revealed that their attitude had changed from a negative attitude before the intervention to a more positive one. Participants enjoyed working along-side someone and felt that the feedback from their partner was helpful, which also helped to change attitudes. For future classroom projects, encouraging partner or group arrangements will help to maintain positive attitudes in the classroom.

**Changed perceptions about my instructional strategies.** It is important for educators to continuously monitor their instructional strategies to attest to their usefulness and then adjust those strategies when they are proven to be ineffective. Instruction should be reflective in nature (Kizilcik & Daloglu, 2018) and feedback on instruction should always be accepted as a way of improving instructional strategies in the classroom. Being the instructor in this study gave great awareness into the instructional strategies being used in my classroom. As the study progressed, and participants began to use the intervention, the need for modeling became apparent. Modeling is a great strategy to show students exactly how to perform a task, but it is also a great tool for
showing students what product you would like for them to obtain (Lee, 2018). In this study, I modeled digital peer review for students using an example paragraph. I modeled reviewing this paragraph two times - once to give feedback and another time to give feedback after a partner had made revisions. I found that the modeling used in this study was very helpful to show students how to use the commenting tool in Microsoft Word as well as what feedback they should be providing their partners. Although, there was time devoted to modeling before the intervention began, there may be an increased need to model again after the first peer review. Modeling will give participants a clear picture of the desired results.

Within the lessons, a need for feedback on student progress showed to be important to the success of digital peer review. All the participants provided feedback to their partners, there was no advice on that feedback. For feedback to be effective, the peer reviewer needs to know that the feedback they are providing to students is effective. This can be done either by the instructor or the participant. In digital peer review there is a place for this type of revision after the initial round of feedback is given by the peer reviewer. If the peer reviewer can have their peer review comments critiqued, they will be able to adjust their strategy and provide even more useful feedback.

A final strategy that emerged as an important part of this study was the strategy of implementing a blended classroom approach. Blended learning is when students learn using some form of online learning through technological tools and students take part in supervised learning at school, blending the two experiences (Tucker, Wycoff, & Green, 2017). Blended learning classrooms promote active learning, a concept where students are active in their roles as the learner. With blended learning, participants could possibly
use part of their peer review time online to make corrections and then would meet later with their partner to possibly clear up any misunderstandings or perhaps work through problems that they are having with their writing. Also, through blended learning, participants could with the class to discuss some of the things they are seeing in their work, or their partner's work, and have classroom conversations to help themselves or others. Blended learning would give independence, as well as promote a student-led classroom where students oversee their own learning. As an instructor, it is important for me to nurture independent learners and thinkers as well as active learning. The use of a blended learning classrooms helps to facilitate this type of environment. Digital peer review helped me to see that a blended learning classroom could promote an even more rewarding experience for both myself and my students.

**Implications for the Writing Classroom**

Throughout this study, I was able to think of my role as a writing instructor and in what ways I can create a writing classroom that reflects a positive attitude in writing as well as accelerates the progress of my students in writing composition. The study showed the importance of implementing strategies that assist in accomplishing both. In achieving these goals in the writing classroom, two categories emerged: (1) changed perceptions about student attitudes and (2) changed perceptions about peer review instruction.

**Changed perceptions about student attitudes in writing.** Student attitude is one of the most important aspects of any part of education. Without a positive attitude, student growth becomes stunted (Lin & Sadler, 2003). When it comes to writing, student attitudes can sometimes be negative. In this study, some participants expressed that their attitudes were not positive when it came to writing in school. Participants expressed that
they felt writing was boring and some students even expressed they felt nervous or anxious about writing. It is this type of attitude that can be detrimental to progression in writing composition.

Research shows that attitudes are attributed to how students perform in their work. When students perform poorly, attitudes suffer (Bulut, 2017). These past performances can be carried with them as they move forward through school (Ekholm et al., 2017). Helping students to be successful in writing can mitigate some of these negative attitudes. Digital peer review was a way in which students could feel better about their work. With the help of a partner, participants were able to make changes to their work so that they may improve their writing composition (Wichadee, 2013).

Participants expressed in their interviews that they enjoyed having a peer review partner. They enjoyed having someone read their work and make comments on the areas they should adjust or alter. These revisions in turn helped them to be more successful. This was also reflected in student surveys where participant responses scored higher in areas of peer review. Better attitudes create better environments and therefore create more success in writing.

This study made clear the importance of student attitude in writing. Although some student postassessment scores did not improve, the overall attitude of participants was impressive. Participants commented that they felt peer review was effective in creating a more positive attitude within themselves. They attributed this change in attitude to being helped by their partners, therefore improving their writing composition. But even more than being helped, participants recognized being able to help their partners improve their work was equally as important to improving their attitudes. The study
showed that participants took their role as peer reviewer seriously and felt a large responsibility in helping their partner score well. These feelings of wanting to help their partner greatly influenced their positive attitudes. In reflection of this study, an important point that surfaced was the idea of creating a classroom environment of community which will best help to improve the attitudes of students in writing instruction.

**Changed perceptions about peer review instruction.** Digital peer review is conducted on some sort of online platform (Guardado & Shi; 2007, Zainnuri & Cahyaningrum, 2017; Ebadi & Rahimi, 2017). Using an online platform helps to create a place that is easily accessible and can be viewed by more than one person (Miller & Olthouse, 2013; Guardado & Shi, 2007; Ebadi & Rahimi, 2017). Research in digital peer review shows that for most students, digital peer review can be productive (Liu & Sadler, 2003). It can be helpful in sharing feedback between two or more students and improving writing composition. However, not all digital peer review is perceived as successful (Liu & Sadler, 2003, Miller & Olthouse, 2013). Finding the right balance within the classroom is the key to success.

Results of postassessments were not indicative of success when it came to the implementation of digital peer review. Although some participant scores did improve from the preassessment to the last postassessment the results were not desirable. This made me think of what more could have been done to help participants. Again, the idea of modeling comes to mind. This idea of modeling for better results is two-fold. The first is to model how to give peer review feedback, which was previously discussed in the implications section, and the second is to model ideal writing composition. A possible component to add to digital peer review is this modeling of good writing composition. In
adding this component to the instruction of digital peer review, students would explicitly know what was expected of them in writing composition. The results of this study show that implementation of modeling in digital peer review is instrumental into it being a success.

Some participants in our study expressed that although they enjoyed digital peer review, they would have enjoyed it more if there were more opportunities for face-to-face peer review. Although one of the aims of this study was to see how the digital tools helped implement digital peer review, as I reviewed the interviews, I began to think about a blended learning approach to digital peer review. For some students, the social aspect of peer interaction is important to them. These students are more extroverted, and they have a need for interacting with their peers. There are also introverted students who like the idea of no pressure in meeting with a partner. To possibly remedy the needs of both groups, a blended approach could be used. Perhaps there would be an online component to the peer review and then an offline component. This blended approach could be introduced in peer review in several ways, one of which I described earlier in this chapter. In my own writing instruction, I feel that a blended approach could possibly be the best way to improve instruction of peer review. Implementing a blended learning approach would possibly contribute to increased positive attitudes as well as improved writing composition.

**Implications for Future Research**

The findings for this study suggest several implications for future research. Implications to consider are: (1) evaluation of feedback in digital peer review, (2)
evaluation of student attitudes in digital peer review, and (3) longitudinal study of digital peer review.

**Evaluation of feedback in digital peer review.** Much of the research on digital peer review discusses the process researchers used to implement digital peer review into the classroom as well as the feedback students give to their peers. Students' feedback was not categorized in this study. However, in most studies, the feedback categories are created by the researcher. Future research could be implemented into categorizing the feedback given by students, and possibly creating more universal categories of digital peer review could be helpful to other researchers and audiences. Possible categories could be mechanics of English, critical thinking, analysis, and structure of composition. Also, with these broader categories, more studies could be compared to help instructors improve the implementation of digital peer review.

**Evaluation of student attitudes in digital peer review.** This study worked to understand what attributed to student attitudes toward writing when implementing digital peer review. Through interviews and surveys, participants were able to convey some of the ways in which their attitudes were affected by the intervention. Participants attributed much of their attitude change to helping others in the study. For future studies, research on how helping others could be a possible attitude changer would be of great importance. This could help with researchers and educators who are interested in implementing digital peer review to improve student attitudes toward writing.

**Longitudinal study of digital peer review.** Research on digital peer review or online peer feedback in writing was abundant and helpful, but there were some areas of research that were limited. This was typically when combining the area of writing
composition, digital peer review, and some other component of our study. The first area was researching digital peer review where the focus was analysis of text or evidence-based writing. This became apparent when discussing the findings of our study. For each participant assignment and assessment, students were to analyze a text and write about their analysis. It was difficult finding studies to compare the analysis of our study with. For future studies, more analysis in this type of writing could be useful to educators, especially since text analysis is becoming more prevalent in classrooms across the country. The second area of limited research was with digital peer review where part of the data collections was pre and postassessments. For this study, participants took a preassessment and then two post assessments, one before and one after the intervention. When looking to compare the results of our study to other research, there were plenty of studies that used surveys and interviews, but few that used these types of assessments to collect data. More research that incorporates pre and postassessments to collect data in digital peer review could be helpful to future studies.

**Limitations**

In this study, there were a few limitations regarding this study that should be noted. The limitations are discussed in the following two sections: (1) methodological limitations and (2) limitations associated with findings.

**Methodological Limitations**

To start, the results of this study are not generalizable to a larger population (Mertler, 2019). In action research, the results or findings of a study are specific to the participants, setting, and situations of the context in which they took place. It would be unfair to generalize the results of this study to a much larger population due to the small
sample size of the study (Dunsmuir, Kyriacou, Batuwitage, Hinson, Ingram, & O'Sullivan, 2014; Mertler, 2019). Also, for this study a purposive sample was used due to using my own students (Laerd Research, 2012; Mertler, 2019). The researcher in this study was also the instructor for the study which could contribute to biases when rating participant work (Dunsmuir et al., 2014). Researcher bias was minimized by asking colleagues to confirm research data analysis through inter-rater reliability as well as peer debriefings of data analysis. Another limitation was the length of the study since it lasted only 8 weeks. Spending greater lengths of time at the site of the study allows the researcher to observe what would be typical or problematic (Mertler, 2019). Had the length of the study been extended, more data would have been collected which would have added to the validity of the results.

**Limitations Associated with Findings**

Regarding the findings of the study, there were a few limitations in the study that should be reported. The first was that participant information reported through surveys and interviews were self-reported information. Mertler (2019) reports that two problems occur with self-reporting: (1) With self-reporting researchers are collecting the perceptions of what people believe and (2) sometimes respondents report what they think the researcher might want to hear. This limitation of self-reporting was minimized by the triangulation of quantitative and qualitative data. Also, some of the tools used to collect data could pose limitations. The assessments were created by the researcher, thus causing difficulty in the comparing of pre and postassessment results to other studies or other courses (Prefume, 2015) Also, the survey did not ask participants questions about digital peer review, although it did ask some questions about peer review. Questions about
digital peer review were addressed in the interviews. Interviews were conducted by the researcher, who was also the instructor. There may have been some pressure felt by the participants to answer in a positive manner to gain approval by the researcher. Attempts to minimize these limitations were conducted through member checking by the researcher to ensure the answers of the participants were what they wanted to convey about their experience. A final limitation was one of the participant's survey and assessment scores. Both the survey data and assessment data by this one student was much lower when compared to other participants. The post survey score of the participant was considerably lower than their peers. Due to restraints on the time of this study, the participant was not questioned about the results of their survey. Reasons could be that the participant wanted to get across strong negative feelings about writing or that they did not take the surveys or assessments seriously. A possibility when this happens is to investigate this phenomenon more closely through extreme case sampling to indeed see why this outlier exists (Mertler, 2019). The researcher felt it was important for the validity and reliability of the study to report this participant's results along with the rest of the participants.

Concluding Thoughts

The research in this study leads the researcher to believe that digital peer review, with some adjustments for blended learning, can be a useful tool in the classroom. Although this study did not see as much success in writing composition as the researcher wished it would, there was a lot of success in improving student attitudes. If we can change student attitudes toward writing into more positive attitudes, we can use this as a catapult to improving their writing composition. Participants in this study were eager to
learn something new, be challenged by the intervention, and were eager to share their experiences during the study. I was most delighted to see that participants placed a lot of value in helping each other and that they did not express any negative attitudes in working with a peer. Overall, I plan to continue to use digital peer review in my own classroom and share my experience with my colleagues and anyone else who is interested. Working together, in any capacity in the classroom, is an opportunity for students to grow their skills in collaboration, cooperation, and reflection, all skills that will be valuable to them in future endeavors.
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APPENDIX A

INFORMED CONSENT FORM

UNIVERSITY OF SOUTH CAROLINA

CONSENT TO BE A RESEARCH SUBJECT

IMPLEMENTING DIGITAL PEER REVIEW INTO A THIRD AND FOURTH GRADE GIFTED WRITING CLASSROOM

KEY INFORMATION ABOUT THIS RESEARCH STUDY:

You are invited to volunteer for a research study conducted by Kem Owens. I am a doctoral candidate in the Department of Educational Technology at the University of South Carolina. The University of South Carolina, Department of Education, is sponsoring this research study. The purpose of this study is to explore the use of digital peer review on student writing composition and student attitudes for third and fourth grade gifted and talented students at Little Rural Primary School. You are being asked to participate in this study because you are in the third and fourth grade gifted and talented class. This study is being done at Little Rural Primary and will involve approximately nineteen volunteers.

The following is a short summary of this study to help you decide whether to be a part of this study. Please read this carefully and if you have any questions, please feel free to ask before deciding to participate.
PROCEDURES:

If you agree to participate in this study, you will do the following:

1. Participate in the instruction and practice of digital tools Microsoft Word and OneDrive.
2. Participate in the instruction and practice of using online commenting in Microsoft Word Online.
3. Complete a writing preassessment to collect initial data.
4. Read assigned texts from the website CommonLit.
5. Complete three writing assignments, each assignment being administered every two weeks. There will be one hour allotted for each writing period.
6. Work with a writing partner to read their partner's writing compositions and offer feedback online.
7. Review peer feedback on their own writing compositions and apply this feedback to a revised version of their assignment.
8. Complete a writing postassessment.
9. Take the Writing Attitudes Survey, a survey that asks students to rate their attitudes toward writing. Surveys will be conducted after the study.
10. Possibly participate in an interview about their experience in the study. Interviews will last around 30 minutes. Eight participants will be randomly selected to participate.
DURATION:
Participation in the study involves the completing of pre and postassessments, writing assignments, online feedback, post-surveys, and interviews over a period of eight weeks.

RISKS/DISCOMFORTS:
Loss of Confidentiality:
There is the risk of a breach of confidentiality, despite the steps that will be taken to protect your identity. Specific safeguards to protect confidentiality are described in a separate section of this document.

Interview Questions:
Students will be interviewed about their experience with digital peer review and their attitudes about writing. Some students may feel uncomfortable speaking openly to the interviewer who is also their instructor and may not feel comfortable sharing how they truly feel.

BENEFITS:
Taking part in this study is not likely to benefit you personally. However, this research may help researchers understand if using digital tools in writing helps improve students' attitudes toward writing as well as helps students improve the skills needed to write compositions or essays.

COSTS:
There will be no costs to you for participating in this study other than possible costs related to transportation to and from the research site.
PAYMENT TO PARTICIPANTS:

You will not be paid for participating in this study.

COLLECTION OF IDENTIFIABLE PRIVATE INFORMATION:

Your information collected as part of the research study will not be used or distributed for future research studies.

CONFIDENTIALITY OF RECORDS:

Unless required by law, information that is obtained in connection with this research study will remain confidential. Any information disclosed would be with your express written permission. Study information will be securely stored in locked files and on password-protected computers. Results of this research study may be published or presented at seminars; however, the report(s) or presentation(s) will not include your name or other identifying information about you.

VOLUNTARY PARTICIPATION:

Participation in this research study is voluntary. You are free not to participate, or to stop participating at any time, for any reason without negative consequences. In the event that you do withdraw from this study, the information you have already provided will be kept in a confidential manner. If you wish to withdraw from the study, please call or email the principal investigator listed on this form.
I have been given a chance to ask questions about this research study. These questions have been answered to my satisfaction. If I have any more questions about my participation in this study, or a study related injury, I am to contact Kem Owens at 864-861-2261 or email kowens@gwd51.org.

Questions about your rights as a research subject are to be directed to, Lisa Johnson, Assistant Director, Office of Research Compliance, University of South Carolina, 1600 Hampton Street, Suite 414D, Columbia, SC 29208, phone: (803) 777-6670 or email: LisaJ@mailbox.sc.edu.

I agree to participate in this study. I have been given a copy of this form for my own records.

If you wish to participate, you should sign below.

Signature of Subject / Participant   Date

Signature of Qualified Person Obtaining Consent   Date
APPENDIX B

ASSENT STUDENT FORM

UNIVERSITY OF SOUTH CAROLINA

ASSENT TO BE A RESEARCH SUBJECT

IMPLEMENTING DIGITAL PEER REVIEW INTO A THIRD AND FOURTH GRADE GIFTED WRITING CLASSROOM

I am a researcher from the University of South Carolina. I am working on a study about using digital tools such as Microsoft Word in writing composition and I would like your help. I am interested in learning more about how these digital tools help you improve your writing and if they affect the way you feel about writing. Your parent/guardian has already said it is okay for you to be in the study, but it is up to you if you want to be in the study.

If you want to be in the study, you will be asked to do the following:

• Answer some written questions about how writing makes you feel as well as if you liked or disliked using the digital tools.
• Write three essays using the digital tools to help you.
• Work with a partner to give feedback to them about their own writing.
• Take a survey about how you feel about writing.
• Possibly be interviewed about using digital tools in writing.

Any information you share with me (or study staff) will be private. No one except myself will know your answers to the questions in the survey or interview. Interviews will be recorded but will only be listened to by myself.
You do not have to help with this study. Being in the study is not related to your regular class work and will not help or hurt your grades. You can also drop out of the study at any time, for any reason, and you will not be in any trouble and no one will be mad at you.

Please ask any questions you would like to about the study.

My participation has been explained to me, and all my questions have been answered. I am willing to participate.

________________________________________  __________
Print Name of Minor  Age of Minor

________________________________________  __________
Signature of Minor  Date
APPENDIX C

PEER REVIEW CHECKLIST

Peer Review Checklist

Does your partner's work:

☐ have an introduction, body, and closing?

☐ use transition words such as first, second, last or "To begin with", "In conclusion", etc?

☐ answer the text dependent analysis (TDA) question?

☐ use at least 2 to 3 pieces of evidence from the text to prove their point?

☐ use specific language? (Such as the use of specific names and places as well as vocabulary that is used in the passage.)

☐ have clear and logical sentences?

☐ uses varied sentences? (Meaning they do not use the same sentence structure over and over such as: They went to the store. They walked fast. They got lost.)

☐ uses correct spelling and punctuation?

Use this checklist to help you check your partner's work. Remember that you are helping them improve what they are writing, not writing for them. Be sure that you also give compliments on things your partner did well.
APPENDIX D

BEST PRACTICES FOR PEER REVIEW

Best practices for peer review:

**Do:**

- Do read the entire document before you start commenting.
- Do give more positive comments than things to work on.
- Do be encouraging.
- Do be clear with your comments.
- Do re-read your comments before you send the document back to them.

**Don't:**

- Do not give a lot of negative feedback.
- Do not make broad comments such as "That's good", "Great", "Good spelling", or "I like this". Be specific with your comments. An example might be to say, "Right here you should add more details so that you build a picture for the reader."
- Don't turn your partner's paper into your paper. Allow them to have their own opinions even if you disagree with them.
- Don't try to find everything that's wrong with the paper.
# APPENDIX E

## WRITING SCORING RUBRIC

Table E.1 *Writing Rubric*

<table>
<thead>
<tr>
<th></th>
<th>4 - Demonstrates superior analysis of the text and skillful writing.</th>
<th>3 - Demonstrates good analysis of the text and good writing.</th>
<th>2 - Demonstrates limited analysis of the text and inconsistent writing.</th>
<th>1 - Demonstrates minimal analysis of the text and inadequate writing.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyzation skills</td>
<td>• Analyzes the text in the appropriate manner. Answers the question appropriately. Shows they understand the text and provides deep analysis. (20)</td>
<td>• Does a good job of analyzing information and answering the question. Demonstrates understanding of the text and question. (15)</td>
<td>• Does a mediocre job of analyzing the text and does not fully answer the question. Shows some understanding of the text and answers parts of the question. (10)</td>
<td>• Does a poor job of analyzing the text and does not answer the question. Shows a lack of understanding the text and question. (5)</td>
</tr>
<tr>
<td>Organization</td>
<td>• Great organization with information grouped well and has a beginning, middle, and end. (20)</td>
<td>• Good organization with some information grouped, but some not. Has a good beginning, middle, and end. (15)</td>
<td>• Very little organization to the paper. Missing one or two of the following: beginning, middle, and end. (10)</td>
<td>• No organization evident in the writing. Does not have a beginning, middle, or end. (5)</td>
</tr>
<tr>
<td>Evidence</td>
<td>• Excellent job of analyzing information based on explicit and implicit ideas and descriptions. Many uses of evidence from the text to support ideas. (20)</td>
<td>• Good job of providing implicit and explicit ideas when analyzing the text. Uses some evidence from the text to support ideas. (15)</td>
<td>• Little implicit or explicit ideas expressed when analyzing the text. Uses one piece of evidence. (10)</td>
<td>• No evidence of implicit or explicit ideas expressed when analyzing the text. Does not use evidence from the text to support their ideas. (5)</td>
</tr>
<tr>
<td>On topic</td>
<td>• Stays on topic and refers to the main ideas of the text. Gives key details to support the main idea. (15)</td>
<td>• Mostly stays on topic and references the main idea of the text. Uses details from the text to support the main idea. (10)</td>
<td>• Wanders off topic at some points in the writing. Uses some details from the text. (5)</td>
<td>• Does not stay on topic when writing. Does not use details from the text to support main ideas. (3)</td>
</tr>
<tr>
<td>Transitions</td>
<td>• Excellent use of transition words throughout their writing. (15)</td>
<td>• Good use of transition words throughout writing sample. (10)</td>
<td>• Some uses of transition words are evident in writing sample. (5)</td>
<td>• No evidence of transition words in writing sample. (3)</td>
</tr>
<tr>
<td>Grammar and spelling</td>
<td>• Very few errors in spelling, capitalization, and punctuation. (10)</td>
<td>• Some errors in spelling, capitalization, and punctuation. (8)</td>
<td>• Many errors in spelling, capitalization, and punctuation. (6)</td>
<td>• Errors in spelling, capitalization, and punctuation are to a point where they interfere with meaning. (4)</td>
</tr>
</tbody>
</table>
## APPENDIX F

### SCHEDULE OF ASSIGNMENTS AND ASSESSMENTS

Table F.2 *Schedule of Assignments and Assessments*

<table>
<thead>
<tr>
<th>Student assignments</th>
<th>Sessions</th>
<th>Activities and Timeframes</th>
<th>South Carolina State Standards Addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment 1: Narrative essay (no peer review)</td>
<td>Day 1</td>
<td>Introduction to the assignment and review of narrative writing. (10 minutes) Review of writing rubric (10 minutes) Students read the passage <em>Act Your Age</em> and read the TDA question. (30 minutes) Review today's work and discuss expectations for tomorrow. (10 minute)</td>
<td>Writing (Meaning, Context, and Craft) 3: Write narratives to develop real or imagined experiences or events using effective techniques, well-chosen details, and well-structured event sequences.</td>
</tr>
<tr>
<td>Student assignments</td>
<td>Sessions</td>
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<td>South Carolina State Standards Addressed</td>
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<td></td>
<td>Day 2</td>
<td>Review of yesterday's work and assignments and discussion of today's agenda and expectations. (10 minutes) Explanation of the TDA question (10 minutes) Students will begin any pre-writing work for their writing assignment. (40 minutes) Review today's work and discuss expectations for tomorrow. (10 minutes)</td>
<td>Writing (Meaning, Context, and Craft) 4: Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.</td>
</tr>
<tr>
<td></td>
<td>Day 3</td>
<td>Review of today's assignments - creating their first draft and a quick reminder of how to use Microsoft Word. (10 minutes) Review of Microsoft Word (10 minutes) Students begin their first writing assignment in Microsoft Word. (30 minutes) Review today's work and discuss expectations for tomorrow. (10 minutes)</td>
<td>Writing (Meaning, Context, and Craft) 5: Demonstrate command of the conventions of standard English form and use the progressive verb tenses.</td>
</tr>
<tr>
<td>Student assignments</td>
<td>Sessions</td>
<td>Activities and Timeframes</td>
<td>South Carolina State Standards Addressed</td>
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</tbody>
</table>
| Day 4               | Review of today's assignments. (5 minutes)  
Students continue with their first writing assignment. Students who finish early begin making revisions. (45 minutes)  
Students save their documents. (5 minutes)  
Review today's work and discuss expectations for tomorrow. (5 minutes) | Communication (Meaning and Context) Standard 2: Articulate ideas, claims, and perspectives in a logical sequence using information, findings, and credible evidence from sources. |
| Day 5               | Review of today's assignments - revising our work and editing. (10 minutes)  
Students review their work and make corrections or revisions to their writing. (40 minutes)  
Review of how to upload our work to OneDrive. (5 minutes)  
Students save their work and upload to OneDrive and we will quickly review what will be assigned for the next class. (5 minutes) | |
| Assessment 1: Narrative essay (no peer review) Day 1 | Explanation of today's assignment - students will complete a writing assessment. (10 minutes)  
Students will complete the writing assessment. (40 minutes)  
Review of today's assignment and what we will do tomorrow. (10 minutes) | Writing (Meaning, Context, and Craft) 3: Write narratives to develop real or imagined experiences or events using effective techniques, well-chosen details, and well-structured event sequences. |
<table>
<thead>
<tr>
<th>Student assignments</th>
<th>Sessions</th>
<th>Activities and Timeframes</th>
<th>South Carolina State Standards Address</th>
</tr>
</thead>
</table>
| Assignment 2:       | Day 1    | Introduction to the assignment two. (10 minutes)  
Seeking a Hidden Hive, read the TDA question. (35 minutes)  
Review today's work and discuss expectations for tomorrow. (10 minutes) | Writing (Meaning, Context, and Craft) 3: Write narratives to develop real or imagined experiences or events using effective techniques, well-chosen details, and well-structured event sequences. |
| Assignment 2:       | Day 2    | Explanation of today's assignment - students will complete a writing assessment. (10 minutes)  
Students will complete the writing assessment. (40 minutes)  
Review of today's assignment and what we will do tomorrow. (10 minutes) | Communication (Meaning and Context)  
Standard 2: Articulate ideas, claims, and perspectives in a logical sequence using information, findings, and credible evidence from sources. |
| Assignment 2:       | Day 3    | Explanation of today's assignment - students will complete a writing assessment. (10 minutes)  
Students will complete the writing assessment. (45 minutes)  
Students take this time to finish up any revisions. (5 minutes)  
Review of today's assignment and what we will do tomorrow. (10 minutes) |  |
<p>| Narrative essay (digital peer review) |  |  |  |</p>
<table>
<thead>
<tr>
<th>Student assignments</th>
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<th>South Carolina State Standards Addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 2</td>
<td>Review of yesterday's work and assignments and discussion of today's agenda and expectations. (10 minutes)</td>
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<tr>
<td></td>
<td></td>
<td>Explanation of the TDA question (10 minutes)</td>
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<tr>
<td></td>
<td></td>
<td>Students will begin any pre-writing work for their writing assignment. (40 minutes)</td>
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</tr>
<tr>
<td></td>
<td>Review today's work and discuss expectations for tomorrow. (10 minutes)</td>
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<td></td>
</tr>
<tr>
<td>Day 3</td>
<td>Review of today's assignments - creating their first draft. (10 minutes)</td>
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<tr>
<td></td>
<td>Students begin their second writing assignment in Microsoft Word. (40 minutes)</td>
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<tr>
<td></td>
<td>Review today's work and discuss expectations for tomorrow. (10 minutes)</td>
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<tr>
<td>Day 4</td>
<td>Review of today's assignments. (5 minutes)</td>
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<tr>
<td></td>
<td>Students continue with their second writing assignment. (45 minutes)</td>
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<td></td>
<td>Students save their documents. (5 minutes)</td>
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</tr>
<tr>
<td></td>
<td>Review today's work and discuss expectations for tomorrow. (5 minutes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student assignments</td>
<td>Sessions</td>
<td>Activities and Timeframes</td>
<td>South Carolina State Standards Addressed</td>
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<td></td>
<td>Day 5</td>
<td>Introduction to peer review to students. Also, expectations of peer review by students. (15 minutes) Demonstrating how to create comments in Microsoft Word. (10 minutes) Students practice adding comments to Microsoft Word documents. (20 minutes) Review of rubric and peer review checklist and expectations to use this for guidance. (15 minutes)</td>
<td>Communication (Meaning and Context) Standard 1: Interact with others to explore ideas and concepts, communicate meaning, and develop logical interpretations through collaborative conversations; build upon the ideas of others to clearly express one's own views while respecting diverse perspectives.</td>
</tr>
<tr>
<td></td>
<td>Day 6</td>
<td>Review of today's agenda and expectations. Also, a review of the last lesson on peer review. (10 minutes) Students upload documents to OneDrive folder and download their partner's work. (5 minutes) Students review their partner's work. (35 minutes) Students upload reviewed work to OneDrive folder. (5 minutes) Review of today and discussion on tomorrow's agenda. (5 minutes)</td>
<td></td>
</tr>
<tr>
<td>Student assignments</td>
<td>Sessions</td>
<td>Activities and Timeframes</td>
<td>South Carolina State Standards Addressed</td>
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</tbody>
</table>
|                     | Day 7    | Review of how to read comments on Microsoft Word. (5 minutes)  
Students download reviewed document and begin making changes to their first draft. (50 minutes)  
Students save work and we will review what will be assigned tomorrow. (5 minutes) | |
|                     | Day 8    | Brief introduction to today's assignment. (5 minutes)  
Students will upload their revised first draft to OneDrive. (5 minutes)  
Students will begin peer reviewing their partner's work. (40 minutes)  
Students will upload their peer reviewed documents to OneDrive. (5 minutes) | |
|                     | Day 9    | Brief introduction to today's assignment. (5 minutes)  
Students will access their reviewed work and begin drafting their final product. (50 minutes)  
Brief review of what we will be working on tomorrow. (5 minutes) | |
<table>
<thead>
<tr>
<th>Student assignments</th>
<th>Sessions</th>
<th>Activities and Timeframes</th>
<th>South Carolina State Standards Addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment 2: Narrative Writing (no peer review)</td>
<td>Day 10</td>
<td>Brief introduction on today's goals. (5 minutes) Students work to finish their final drafts (45 minutes). Students will upload their final draft to OneDrive. We will briefly discuss the next assignment. (10 minutes)</td>
<td>Writing (Meaning, Context, and Craft) 3: Write narratives to develop real or imagined experiences or events using effective techniques, well-chosen details, and well-structured event sequences.</td>
</tr>
<tr>
<td></td>
<td>Day 1</td>
<td>Explanation of today's assignment - students will complete a writing assessment. (10 minutes) Students will complete the writing assessment. (40 minutes) Review of today's assignment and what we will do tomorrow. (10 minutes)</td>
<td>Communication (Meaning and Context) Standard 2: Articulate ideas, claims, and perspectives in a logical sequence using information, findings, and credible evidence from sources.</td>
</tr>
<tr>
<td></td>
<td>Day 2</td>
<td>Explanation of today's assignment - students will complete a writing assessment. (10 minutes) Students will complete the writing assessment. (40 minutes) Review of today's assignment and what we will do tomorrow. (10 minutes)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Day 3</td>
<td>Explanation of today's assignment - students will complete a writing assessment. (10 minutes) Students will complete the writing assessment. (45 minutes) Students will complete any last-minute revisions. (5 minutes)</td>
<td></td>
</tr>
</tbody>
</table>
**APPENDIX G**

**ASSIGNMENT 1 PASSAGE**

*Act Your Age*

By Colleen Archer

2015

Colleen Archer has written for Highlights. In this short story, a young girl is told over and over again to act her age. As you read, take notes on what Frances is doing when she is told to act her age.

“Act your age,” said Aunt Augusta sharply. Frances had been blowing bubbles in her bedtime milk. She had made sure there was only about a quarter of the milk left. The bubbles weren’t going over the sides of the glass. But it seemed that Aunt Augusta was annoyed anyway.

When Frances’s mother came back into the room, Frances was quiet.

“Are you OK?” asked her mother.

“Yes,” said Frances. But she felt better when Aunt Augusta had finished visiting them and gone home.

At recess the next day, Frances was playing ring-around-the-rosy with her five-year-old sister, Grace, and four of Grace’s friends.

Just then Frances’s friend Julie came along. “You’d better act your age,” said Julie. “What will Sandra and Susan think?”

Reluctantly Frances said good-bye to Grace. She went with Julie to join their friends Sandra and Susan on the other side of the playground.

The next day was Saturday. Frances wasn’t feeling as excited as she usually did about going to Grandma and Grandpa Burton’s house for dinner — especially since Aunt Augusta was invited as well. Usually Grandma and Grandpa made Frances laugh, but today Frances wasn’t in a laughing mood.

Before dinner, Grandma and Grandpa and Frances’s mom and dad played ring-around-the-rosy with Grace. Frances just watched.

*Figure G.1. Assignment 1 Passage*
When they sat down to eat, Frances saw that they were having her favorite meal — spaghetti and meatballs and salad, with chocolate pudding for dessert. She began to feel a little better. Then Aunt Augusta started talking about her fights with her next-door neighbor.

"... and yesterday I came home to find his dog burying a bone right in the middle of my flower bed!" she said. "Do you know what I did next?"

No one answered her question, so she answered it herself.

"After the little beast left, I dug up the bone, gift-wrapped it, and put it in that man's mailbox."

"Oh, for heaven's sake, Augusta," said Frances's mom. "You should learn to act your age."

At the thought of proper Aunt Augusta being told to act her age, Frances started to laugh. Then she started to sputter. The more she tried to stop, the more she laughed and sputtered. Finally even Aunt Augusta managed a small smile and murmured, "I guess I should."

Grandma chuckled and said, "You know, that's the first time I've heard Frances laugh all evening. I'm glad she remembers how."

The next afternoon Frances was playing hopscotch with Grace when Julie walked by.

"Hopscotch?" asked Julie. "You still play a baby game like hopscotch?"

"Yes, I do," said Frances firmly.

There didn't seem to be anything left for Julie to say. For a while she watched Frances and Grace hopping and giggling and playing. Then quietly she asked, "May I play, too?"
APPENDIX H

COPY OF COMMONLIT APPROVAL EMAIL

Hi Kem,

This sounds wonderful, thank you for thinking of us.

You are permitted to use CommonLit lessons with your students for your research project as described, provided that all the use is noncommercial/educational and the copyright protected reading passages will not be republished or circulated widely (for example through a journal).

Please let me know if you have any other questions, and please do share the results of your study with us when it's complete!

All the best,
Agnes
APPENDIX I

POSTASSESSMENT 1 PASSAGE

The Icicle Symphony
By Julia Gousseva
2015

Julia Gousseva has written for Highlights. In this short story, a girl in Moscow, a city in Russia, doesn’t want to go outside with her uncle. As you read, take notes on Marina’s feelings throughout the story.

I stood by the drafty 3 double-paned windows of our Moscow apartment and looked outside. Old apartment buildings blocked most of the gray winter sky, and the ground below was brown with dirty snow. I noticed a woman crossing the street, her face covered with a thick scarf. She looked cold and miserable.

The morning was perfect for reading. I drew the curtains, turned on the light, and curled up in my bed with a book.

The phone rang:

After a minute, I heard my mom say, “Sure! Marina would love that. See you soon.”

Who was that? I wondered. And what was I supposed to love?

Mama walked into my room and opened the curtains wide again. “Time to get up, Marina. Uncle Gena is taking you to Sparrow Hills.”

Going outside on this cold winter morning? No way.

I pulled a blanket closer around me. “But it’s freezing out.”

“You’ll have fun,” Mama said.

I shook my head. “Not in this weather.” During the summer, I loved going to Sparrow Hills, eating strawberry ice cream from a paper cup and walking through the park by Moscow State University. But going there on this cold winter morning?

“Get ready,” Mama said. “Uncle Gena will be here soon.”

I slowly pulled on a blue sweater and changed into tights and thick wool pants.

1. allowing currents of cold air in

Figure I.1. Postassessment 1 Passage
Too soon, the doorbell rang. When Mama opened the door, Uncle Gena put his backpack down and hugged me. Dressed in faded jeans, a sweater knitted by my grandmother, and a black down jacket, Uncle Gena stood straight and tall. Even in the depths of the long winter, he was tan from skiing and mountain climbing. He turned to Mama and hugged her, too. “Do you have a travel mug?”

“Sure,” said Mama. “Would you like tea or coffee in it?”

“Just an empty one.” He put the travel mug in his backpack and smiled at me. “Ready, Marina?”

“I guess,” I buttoned my coat up to my nose and pulled on a warm furry hat.

We descended two flights of stairs to the narrow sidewalk, where snow was piled high. I hunched my shoulders and scowled at the cold.

We crossed the street and walked down the steep steps of the metro station to catch the train to Sparrow Hills. Marble walls and columns, a shiny floor, and a colorful mosaic on the ceiling made the station look like a czar’s palace. It was warmer in the station. My body started to relax.

I peered into the blackness of the tunnel. Two bright lights were approaching. The train blew its horn as it rushed into the station, an oil smell filling the air. When the doors opened, we climbed aboard and sat on a cushiony brown bench.

Before long, we pulled into the glass-walled station at Sparrow Hills. “Can we just ride around on the train?” I said. The daylight made me squint.

Uncle Gena gently pulled me up. “You’d miss all the fun.”

Outside, the frosty air made my cheeks tingle. The wind whistled and whined.

“I don’t know how long I can stay out here,” I said as we started to walk uphill.

“Shhh. Look.”

A patch of snowy trees sparkled with ice-covered branches. They swayed in the wind.

Uncle Gena pointed to the sidewalk dappled with rainbows. “These colors are a reflection of the iced branches, white light broken down into the rainbow’s seven colors.” He pulled me closer to the trees, “Listen.”

First, I heard only the wind. Then came a faint jingling and chiming.

“What’s that?” I asked.

---

2. Descent (verb): to move downward
3. Scowl (verb): to frown in an angry way
4. A picture or pattern made by putting together small colored bits of hard material
5. An emperor of Russia
6. Marked with spots or rounded patches

Figure I.2. Page 2 of Postassessment 1 Passage
“The icicle symphony,” Uncle Gena said. “Snow fell on the branches. It melted, then froze again. Now, the icy branches chime as they sway in the wind.”

I pulled my hat up to free my ears. The branches sounded like hundreds of tiny bells ringing, jingling, and chiming. I stood mesmerized, staring straight up at the branches.

Uncle Gena took the travel mug from his backpack, then walked deeper into the stand of trees and filled the mug with fresh, sparkling snow. “We’ll make tea at home. The snow gathered here makes delicious tea.”

We came to the granite guardrail above the glistening Moskva River. From the height of Sparrow Hills, Moscow looked like a fairy-tale city. Golden domes of old churches and snow-covered trees made the concrete buildings appear brighter. Then the sun broke through the clouds.

“The sun is shining!” I said.

Uncle Gena smiled. “The sun is always shining. You just need to climb high enough to see it.”

“And you have to go outside in the winter to hear the icicle symphony,” I said as we walked down the hill.
Seeking a Hidden Hive

By Jocelyn Rish
2011

Jocelyn Rish is a writer and filmmaker. In this short story, a boy and his grandfather search for a beehive to collect the honey from inside. As you read, take notes on how Guyo feels about his size.

Guyo kicked the ground, stirring up a cloud of red dust.

“What’s wrong, Guyo?”

Guyo looked up to see his grandfather.

“Father won’t let me herd[1] the cattle. He says I’m too little,” said Guyo.

“Your father has a lot on his mind. Times are tough,” said Grandfather.

“That’s why I want to help! But every time I try, people say I’m too small.”

“You can help your mother by getting honey.”

Guyo jangled the few coins in his pocket. “But I don’t have enough money.”

His grandfather smiled. “We’ll gather honey the way Borana tribe[2] has gathered honey for years.” He opened his hand. It held a snail shell with a hole cut in it.

“What’s that, Grandfather?”

“It’s a fuulido. When we use it, a honey guide will come and lead us to a hidden beehive.” He handed Guyo the shell. “Call one.”

Guyo blew through the hole, creating a high-pitched whistle. When nothing occurred, he whistled again. Before long, a gray-brown bird fluttered to a nearby branch. She called tiritir many times, then turned and flashed the white patches on her tail feathers. Once she had the attention of Grandfather and Guyo, she flew off toward the west.

Guyo was eager to follow. His grandfather picked up a tin pail and said, “Let’s go.”

They hurried through the dry brush,[3] always keeping the honey guide in view. But when they came to a high ledge, they paused so Grandfather could help Guyo scramble over it. They lost sight of the bird.

“I’m sorry, Grandfather,” Guyo said.

Figure J.1. Assignment 2 Passage
“Don't worry. She'll be back.”

Soon Guyo heard the trilling call again. The honey guide landed on a limb, waving her tail feathers.

Grandfather said, “She will make sure we go the right way. This has been the custom between our tribe and the honey guides for hundreds of years.”

The bird flew into the air.

“Why do they help us?” Guyo asked.

“The honey guides are experts at finding hives. But because they're small, bee stings would kill them. They need our help to get what's inside the hive.”

Guyo and his grandfather followed the bird for half an hour. Each time the bird returned, she perched closer to the ground. Grandfather said, “That means we're getting closer.”

Finally the honey guide’s call changed. She swooped toward a crack in a cliff wall. “We're here,” said Grandfather.

Guyo's heart beat faster as they approached the crack. An army of angry bees guarded the entrance. The buzzing tickled his ears.

Grandfather gathered small sticks and started rubbing them together. “Help me build a fire in front of the crack. The smoke will calm the bees.”

Guyo was afraid he might get stung. But he had to prove he was big enough to help. He kept an eye on the bees as Grandfather blew on the smoky bundle of sticks. When the smoke drifted over the bees, the buzzing got quiet.

Grandfather tried to push his hand into the crack, but it wouldn't fit. He said to Guyo, “You should be able to reach the honeycomb.”[4]

Guyo trembled. He couldn't reach into that dark hole! What if the bees stung him? He looked at his grandfather. He couldn't disappoint him.

Guyo took a deep breath and stretched out his arm. Then he jerked back in fear. I can do this, I can do this, he repeated to himself. He closed his eyes and thrust his fingers into the crack. No stings! The smoke worked.

Reaching as far as he could, he tugged out chunk after chunk of honeycomb dripping with sticky amber[5] honey.

Grandfather said, “That's plenty. We need to leave enough for the bees.”

They backed away from the hive just as the bees started to buzz again.
Grandfather put most of the honeycomb inside his tin pail. He handed Guyo a piece. “Give this to the honey guide, with the thanks of the Borana tribe.”

Guyo placed the honeycomb at the base of the tree where the honey guide perched. “Thank you for sharing this treasure with us.”

The honey guide trilled and dropped to the ground to eat her reward. As they started walking home, Grandfather placed a hand on Guyo’s shoulder. “You were able to reach so much honey that we’ll be able to sell the extra in the village. That will be a big help to our family.”

Guyo smiled. “I guess being little is sometimes a good thing.”
APPENDIX K

POSTASSESSMENT 2 PASSAGE

Too Many Vegetables
By Karen DelleCava
2007

Karen DelleCava has written for Highlights. In this short story, a boy and his dad give zucchinis from their garden to their neighbors. As you read, take notes on how Patrick and his dad respond to their neighbors.

[1] “What are we going to do with all of these?” Patrick asked.
“I love zucchini, but this is ridiculous,” Dad said. He wiped the sweat from his forehead.

In May, Patrick and his dad had put out six tiny zucchini plants. Now huge leaves crowded one another. Dozens of zucchini as long as Patrick’s arm hid underneath. Patrick and Dad’s first vegetable garden was an amazing success.

“Remember how everyone welcomed us to the neighborhood when we moved in?” Patrick said. “Let’s give a zucchini to each of the neighbors.”

[5] Dad lifted a fuzzy leaf to show even more zucchini. “Better make it two.”
They weeded the garden that afternoon and staked the tomato plants. Then Patrick picked the zucchini. He delivered them, still warm from the sun, to the neighbors.

The next day Mrs. Gianelli came to the front door. She carried a large foil-covered baking pan.

“Hi, Mrs. Gianelli,” said Patrick. “What’s this?”

“Zucchini parmesan,” she said. “My grandmother’s recipe. I wanted to thank you for the lovely vegetables. I had enough to make two full pans.”

[10] Soon the rest of the neighbors arrived. They each brought their own favorite zucchini creations. There was salsa, fritters, quiche, soup, and even bread.

“The bread is made with sugar, raisins, and walnuts,” Mr. Binsky said. “It’s a dessert.”

Eyes wide, Dad shook his head. “Look at all this food!”

“Let’s have a picnic,” Patrick suggested.

Figure K.1. Postassessment 2 Passage
“I'll whip up a batch of zucchini juice.”

“Excuse me?” Mrs. Gianelli said.

“Just kidding,” said Patrick. “I'll make lemonade.”

The neighbors paraded outside to the deck with their zucchini dishes. Dad passed out paper plates, forks, and napkins. As everyone talked and laughed and ate, they exchanged recipes. After the feast, Patrick made another pitcher of lemonade. Mr. Binsky served the zucchini bread.

Then Patrick joined Dad at the edge of the garden. New flowers had burst into bloom on the tomato plants since that morning. Each yellow flower meant one red, ripe tomato. Dad winked at Patrick. They smiled at everyone enjoying the zucchini picnic.

“I guess you can never have too many vegetables,” Dad said.

“Or neighbors!” said Patrick.
APPENDIX L
PREASSESSMENT PASSAGE AND TDA QUESTION

Reading to Max
By Heather Klassen
2016

Heather Klassen has written Highlights. In this short story, a boy reads to a cat at an animal shelter. As you read, take notes on the relationship between the boy and the cat.

[1] “This Saturday, we’ll be visiting cats at the animal shelter. If you’d like to join us, here’s a flyer,” said Ms. Delgado, the school librarian.

Ben loved cats, and he had always wanted one. He hurried to grab a flyer. Then Ms. Delgado added, “We’ll be reading to the cats.” Ben stopped. Reading was hard. Still, he really wanted to visit the cats, so he took a flyer anyway.

After school, Ben showed the flyer to Dad.

“That sounds great,” Dad said. On Saturday, Ben and Dad met some of Ben’s classmates and their parents at the shelter.

[5] “This is Max,” the shelter worker told Ben as she handed him a gray cat. Ben carried Max to a beanbag chair. When Ben sat down, Max settled onto his lap.

“She’s my book,” Ben told Max. He had taken a book he’d been working on. He started reading, and Max purred. After a few minutes, Ben looked up. Some of the cats stayed on his classmates’ laps, but other cats roamed the room while the kids read.

Ben stroked Max’s back. I’m glad Max is staying and listening to me read, he thought.

On the way home, Ben told Dad, “Max is the best cat ever.”

“I’m glad you two are buddies,” Dad said. All week, Ben waited for Saturday. When it arrived, Ben got to read to Max again. Ben read and read while Max purred and purred.


“I guess you’d read to a different cat,” Dad said.

But I don’t want a different cat. Ben thought.

Ben even told his next-door neighbor, Mrs. Patel, about Max.

1. a piece of paper advertising something
2. to go from place to place without purpose

Figure L.1. Preassessment Passage
“Max sounds like a special cat,” said Mrs. Patel.


Every Saturday, Ben read to Max. “I wish we could adopt Max,” Ben said to Dad. He knew they couldn’t. Mom had allergies.

Dad nodded. “But it’s nice you can see Max at the shelter, right?”

“Yeah,” said Ben.

One day at school, Ben realized that reading seemed easier. Still, he was surprised when Ms. Delgado gave him the Most Improved Reader award. “I want to show my award to Max,” Ben told Dad.

[20] But on Saturday, Ben couldn’t find Max at the shelter. “Someone must have adopted Max. What if I never see him again?” Ben said, frowning. Just then, Mrs. Patel walked into the visitors’ room, carrying Max.

“Max is a special cat,” Mrs. Patel said.

“So I’m adopting him. You can come over every day to visit him.”

*Having Max next door will be almost like having him as my own cat,* Ben thought. He smiled at Mrs. Patel.

“Now we can read every day,” Ben told Max as he stroked the cat’s back.


Figure L.2. Page 2 Preassessment Passage

Name: ___________________________ Date __________

Preassessment

Directions: After reading *Reading with Max*, please answer the text dependent analysis (TDA) question below. Make sure that you give evidence from the passage to support your answer.

**Text Dependent Question:**

In the story *Reading with Max*, Ben enjoys reading to a cat named Max at an animal shelter. Ben’s neighbor helps him to continue to improve his reading skills by adopting Ben’s friend Max. Think of a time when you or someone you know was having trouble with a skill at school or home. Who helped you or this person to improve? How is your story like Ben’s? Be sure to use evidence from the text to support your answer.

Figure L.3. Text Dependent Analysis Question
APPENDIX M

INTERVIEW PROTOCOL

Interview Introduction

Thank you for agreeing to this interview. I will be asking you questions about your experience using digital peer review. If you do not understand a question, please let me know so that I may make the question more understandable. Do you mind if I record this interview so that I may go back later and listen to it? Thank you.

This interview will take approximately 30 minutes. There are three parts to the interview: questions about the use of digital tools, questions about using digital peer review, and questions about how you felt after using both.

Are you ready to begin? I will begin recording now.

Research Question 1: Impact of digital peer review

1. Did you feel using digital peer review helped you?
2. Can you provide an example of how digital peer review helped you or didn't help you?
3. In what ways did your peer review feedback help improve the writing of your partner?
4. Can you provide an example of how peer review improved your partner's work?
5. How did reviewing someone else's work make you feel?
6. Can you provide a reason of why you feel this way?
7. Can you tell me if you would like to use digital peer review for future assignments?
8. Can you give me an example of how you would use it?
9. If you knew someone that was having trouble with writing, would you recommend they use peer review to help them?

Research Question 2: Impact on attitudes after intervention

1. What were your feelings toward writing before we began this study?
2. What made you feel this way about writing?
3. How has using peer review changed your attitude toward writing?
4. Speak about why your feelings changed/stayed the same?
5. Did reviewing your partner's work make you enjoy writing more or less?
6. Can you give me an example that demonstrates this?
7. What were the things you liked about digital peer review?
8. Can you give me an example of something you liked about digital peer review.
9. How has your attitude toward writing changed due to digital peer review?
10. Can you give some examples of how you felt toward writing before and after using digital tools and digital peer review?
11. Overall, in what ways has the use of digital tools in writing made you feel more confident about your own writing?

**Conclusion**

That concludes the interview. Thank you for your openness and for being willing to take part in this interview. Should I have any further questions, may I contact you to follow up? Thank you.

This is Kem Owens and this is the end of my interview with:
APPENDIX N

WRITING ATTITUDE SURVEY

COMPENDIUM 21. WRITING ATTITUDE SURVEY

Directions for Use
The Writing Attitude Survey provides a quick indication of student attitudes toward writing. It consists of 26 items and can be administered to an entire classroom in about 20 minutes. Each item presents a brief, simply worded statement about writing, followed by four pictures of Garfield. Each pose is designed to depict a different emotional state, ranging from very positive to very negative.

Administration
Begin by telling students that you wish to find out how they feel about writing. Emphasize that this is not a test and that there are no right answers. Encourage sincerity.

Distribute the survey forms and, if you wish to monitor the attitudes of specific students, ask them to write their names in the space at the top. Hold up a copy of the survey so that the students can see the first page. Point to the picture of Garfield at the far left of the first item. Ask the students to look at the same picture on their own survey form. Discuss with them the mood Garfield seems to be in (very happy). Then move to the next picture and again discuss Garfield’s mood (this time, somewhat happy). In the same way, move to the third and fourth pictures and talk about Garfield’s moods—somewhat upset and very upset.

Explain that the survey contains some statements about writing and that the students should think about how they feel about each statement. They should then circle the picture of Garfield that is closest to their own feelings. (Emphasize that the students should respond according to their own feelings, not as Garfield might respond.) In the first and second grades read each item aloud slowly and distinctly, then read it a second time while students are thinking. Be sure to read the item number and to remind students of page numbers when new pages are reached.

In Grades 3 and above, monitor students while they are completing this survey. It is not necessary for the teacher to read the items aloud to students, unless the teacher feels it is necessary for newer or struggling readers.

Teachers should review the items prior to the administration of the survey to identify any words students may need defined to eliminate misunderstanding during completion of the instrument.

Scoring
To score the survey, count four points for each leftmost (very happy) Garfield circled, three points for the next Garfield to the right (somewhat happy), two points for the next Garfield to the right (somewhat upset), and one point for the rightmost Garfield (very upset). The individual scores for each question should be totaled to reach a raw score.

Interpretation
The scores should first be recorded on the scoring sheet. The scores can be interpreted in two ways. An informal approach would be to look at where the raw score falls related to the total possible points of 112. If the raw score is approximately 70, the score would fall midway between the somewhat happy and somewhat upset Garfields, indicating the student has an indifferent attitude toward writing. The formal approach involves converting the raw score to a percentile rank by using the table in the Writing Attitude Survey Scoring Sheet. The raw score should be found on the left-hand side of the table and matched to the percentile rank in the appropriate grade-level column.

Figure N.1. Directions for Writing Attitude Survey
Figure N.2. Questions 1-5 Writing Attitude Survey
6. How would you feel keeping a diary?

7. How would you feel writing poetry for fun?

8. How would you feel writing a letter stating your opinion about a topic?

9. How would you feel if you were an author who writes books?

10. How would you feel if you had a job as a writer for a newspaper or magazine?

*"Garfield" © Paws, Inc. All rights reserved.

Figure N.3. Questions 6-10 Writing Attitude Survey
11. How would you feel about becoming an even better writer than you already are?

12. How would you feel about writing a story instead of doing homework?

13. How would you feel about writing a story instead of watching TV?

14. How would you feel writing about something you did in science?

15. How would you feel writing about something you did in social studies?

Figure N.4. Questions 11-15 Writing Attitude Survey
16. How would you feel if you could write more in school?

17. How would you feel about writing down the important things your teachers say about a new topic?

18. How would you feel writing a long story or report at school?

19. How would you feel writing answers to questions in science or social studies?

20. How would you feel if your teacher asked you to go back and change some of your writing?

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Figure N.5. Questions 16-20 Writing Attitude Survey
21. How would you feel if your classmates talked to you about making your writing better?

22. How would you feel writing an advertisement for something people can buy?

23. How would you feel keeping a journal for class?

24. How would you feel writing about things that have happened in your life?

25. How would you feel writing about something from another person's point of view?

*Garfield* © Paws, Inc. All rights reserved.

Figure N.6. Questions 21-25 Writing Attitude Survey
26. How would you feel about checking your writing to make sure the words you have written are spelled correctly?

![Garfield](image)

27. How would you feel if your classmates read something you wrote?

![Garfield](image)

28. How would you feel if you didn't write as much in school?

![Garfield](image)

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*Figure N.7.* Questions 25-28 Writing Attitude Survey
## APPENDIX O

**WRITING ATTITUDE SURVEY SCORING SHEET**

**Writing Attitude Survey Scoring Sheet**

| Student name: | |
| Teacher: | |
| Grade: | Administration Date: |

### Scoring Guide

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<th>Score</th>
<th>Description</th>
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<td>4 points</td>
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<td>3 points</td>
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<td>1 point</td>
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**Full-Scale Raw Score:**

**Percentile Rank:**


*Figure O.1.* Writing Attitude Survey Scoring Sheet
APPENDIX P
IRB APPROVAL LETTER

OFFICE OF RESEARCH COMPLIANCE

INSTITUTIONAL REVIEW BOARD FOR HUMAN RESEARCH
DECLARATION of NOT RESEARCH

Kemberly Owens
405 Dukes Avenue
Greenwood, SC 29646 USA

Re: Pro0093352

Dear Mrs. Kemberly Owens:

This is to certify that research study entitled Going Digital with Peer Review: Action Research Integrating the Use of Microsoft Word Online for Peer Review of Narrative Writing with 3rd and 4th Grade Gifted and Talented Students at Ware Shoals Primary School was reviewed on 9/26/2019 by the Office of Research Compliance, which is an administrative office that supports the University of South Carolina Institutional Review Board (USC IRB). The Office of Research Compliance, on behalf of the Institutional Review Board, has determined that the referenced research study is not subject to the Protection of Human Subject Regulations in accordance with the Code of Federal Regulations 45 CFR 46 et.seq.

No further oversight by the USC IRB is required. However, the investigator should inform the Office of Research Compliance prior to making any substantive changes in the research methods, as this may alter the status of the project and require another review.
If you have questions, contact Lisa M. Johnson at lisaj@mailbox.sc.edu or (803) 777-6670.
Sincerely,

Lisa M. Johnson

ORC Assistant Director and IRB Manager
APPENDIX Q

PERMISSION EMAIL FOR FIGURE 2.1

permissions@guilford.com
Tue 7/14/2020 10:44 AM
To: OWENS, KEMBERLY J

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Kind regards,

Kathy Kuehl
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Figure Q.1. Permission Email for Figure 2.1
APPENDIX R

PERMISSION EMAIL FOR FIGURE 2.2

Figure R.1. Permission Email for Figure 2.2