Examining the Effects of a Content-based Peer Feedback Writing Intervention in Community College Classrooms

Jennifer M. Gilken
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Examining the Effects of a Content-based Peer Feedback Writing Intervention in Community College Classrooms

by

Jennifer Gilken

A dissertation submitted to the Graduate Faculty in Educational Psychology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

2018
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Jennifer Gilken

This manuscript has been read and accepted for the Graduate Faculty in Educational Psychology in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

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THE CITY UNIVERSITY OF NEW YORK
ABSTRACT

Examining the Effects of a Content-based Peer Feedback Writing Intervention in Community College Classrooms

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Jennifer Gilken

Advisor: Helen L. Johnson

Research has documented that low-level writing skills among postsecondary students are an ongoing concern and contribute to the lack of persistence and degree attainment for community college students (Karp, 2011; Perin, 2013). Since academic writing is a process that develops over time (Perin, 2003), many students require writing support beyond remedial course work for long-term success in more advanced courses (Karp, Hughes, & O’Gara 2010; Perin, 2013; Tapp, 2013). The current study used a Community of Practice (CoP) framework (Lave & Wenger, 1991) to create a content-based peer feedback intervention to examine two key ways in which a content-based peer feedback writing intervention may contribute to community college students’ academic success: supporting improvement of academic writing, and fostering feelings of belongingness in the academic community.

The study population comprised students who were randomly selected from 24 class sections (10 from each). 12 of the sections were randomly assigned to the treatment condition, the other 12 to the control condition. Participants’ writing quality was measured through drafts and final writing submissions. Students’ feelings of belongingness were measured by the Classroom Community Scale (Rovai, 2002) through pretest and posttest. Demographic results indicated that the treatment and control did not differ on age, years attended college, ethnicity, home language, other family members college experience, and remedial course work. Results
showed changes over time in students’ writing scores and feelings of belongingness were statistically significant in the content-based peer feedback treatment condition, but not in the business as usual, self-editing control conditions. Other findings and data suggest areas for future research. Instructional and classroom applications are discussed.
Acknowledgements

My work was inspired by the BMCC students with whom I have had the privilege of working with for over 17 years. My students helped me understand what a true CoP looks like and I am forever grateful.

There are many other people who have supported me throughout my graduate school journey and I would like to take this opportunity to thank everyone. To begin, Dr. Helen Johnson helped me believe this work was valuable. As my advisor, she has been a mentor who has gone above and beyond with her time, knowledge and generosity. I am fortunate to have a dedicated dissertation committee; Dr. David Rindskopf’s accessibility provided the support I needed to complete this project. I also want to express gratitude for the support of Dr. Akiba, Dr. Walters and Dr. Almendral.

Completing this journey would have been impossible without the community of women in my life, especially Leslie Craigo, Delia Hernandez, Rachel Levine, Kirsten Cole, Cara Kronen, Jen Longley, Ashley R. Davis, Alyse Hatchey, Jolie Medina, Ruby Richardson, Virginia Lee, Rachael Kilian, Jodi Call, Lola Newsome and Kate Leraris. I am fortunate to have their support, guidance, friendship, and love.

Thank you to my parents, Ronnie and Russ Gilken, who instilled in me the value of education and the value of hard work.

And finally, to my family, Phil, this is really a shared victory. You cheered me on when I needed it most. I am grateful to have you. Issey and Sofia, you both inspire me everyday, I am proud to be your mom.
Table of Contents

Abstract iv
Acknowledgements vi
List of Tables x
List of Figures xi
Chapter 1: Introduction 1
  Purpose 4
  Rationale 5
Chapter 2: Literature Review 7
  Community College Students 7
  Writing for Academic Purpose 8
  Non-academic Supports for Writing 10
  Communities of Practice as a Theoretical Framework 11
  Belongingness 14
  General Feedback 17
  Peer Feedback 18
  Key Design Elements for Peer Feedback Intervention 25
  Pilot Study 26
  Study Proposal 27
  Research Questions and Hypotheses 28
Chapter 3: Methodology 30
  Participant Selection 30
# Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic Survey-Participants</td>
<td>35</td>
</tr>
<tr>
<td>Demographic Survey-Instructors</td>
<td>35</td>
</tr>
<tr>
<td>Assignment Rubrics</td>
<td>35</td>
</tr>
<tr>
<td>Peer Feedback Comment Form</td>
<td>36</td>
</tr>
<tr>
<td>Student Reflection Questionnaire</td>
<td>36</td>
</tr>
<tr>
<td>Classroom Community Survey</td>
<td>37</td>
</tr>
</tbody>
</table>

# Procedures

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>39</td>
</tr>
<tr>
<td>Treatment Group</td>
<td>39</td>
</tr>
<tr>
<td>Instructor Training</td>
<td>40</td>
</tr>
</tbody>
</table>

# Data Coding

<table>
<thead>
<tr>
<th>Coding</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating Student Writing</td>
<td>41</td>
</tr>
<tr>
<td>Coding Peer Feedback</td>
<td>42</td>
</tr>
</tbody>
</table>

# Statistical Analyses

Research Question 1. What is the impact of a peer feedback writing intervention, as measured by an instructor-created rubric, on community college students’ academic writing?

Research Question 2. What is the impact of a peer feedback writing intervention, as measured by the Classroom Community Survey (Rovai, 2002), on community college students’ feelings of belongingness?

Research Question 3. What types of feedback comments, surface or content, do students make?

Research Question 4. What types of content-based comments task or process do students make most frequently?

Research Question 5. Do process-based feedback comments or
task based feedback comments elicit more content-based revisions from students?

<table>
<thead>
<tr>
<th>Chapter 4: Results</th>
<th>48</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary Analyses</td>
<td>48</td>
</tr>
<tr>
<td>Impact of a Content-Based Peer Feedback Writing Intervention</td>
<td>48</td>
</tr>
<tr>
<td>On Academic Writing</td>
<td>48</td>
</tr>
<tr>
<td>Impact of a Content-Based Peer Feedback Writing Intervention</td>
<td>50</td>
</tr>
<tr>
<td>On Students’ Feelings of Belongingness</td>
<td>50</td>
</tr>
<tr>
<td>Impact of a Content-Based Peer Feedback Writing Intervention</td>
<td>51</td>
</tr>
<tr>
<td>On Types of Feedback Comments</td>
<td>51</td>
</tr>
<tr>
<td>Impact of a Content-Based Peer Feedback Writing Intervention</td>
<td>53</td>
</tr>
<tr>
<td>On Types of Content Feedback Comments</td>
<td>53</td>
</tr>
<tr>
<td>Impact of a Content-Based Peer Feedback Writing Intervention</td>
<td>56</td>
</tr>
<tr>
<td>On Revisions Made By Students</td>
<td>56</td>
</tr>
<tr>
<td>Impact of a Content-Based Peer Feedback Writing Intervention</td>
<td>58</td>
</tr>
<tr>
<td>On Student Perceptions</td>
<td>58</td>
</tr>
<tr>
<td>Students Perceptions of the Self-Edit Checklist</td>
<td>59</td>
</tr>
<tr>
<td>Student Perceptions of Feedback</td>
<td>59</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter 5: Discussion</th>
<th>61</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer Feedback and Academic Writing</td>
<td>63</td>
</tr>
<tr>
<td>Peer Feedback and Belongingness</td>
<td>65</td>
</tr>
<tr>
<td>Academic Writing and Belongingness</td>
<td>67</td>
</tr>
<tr>
<td>Students Perceptions</td>
<td>68</td>
</tr>
<tr>
<td>Limitations and Future Directions</td>
<td>68</td>
</tr>
<tr>
<td>Educational Implications</td>
<td>70</td>
</tr>
<tr>
<td>Conclusions</td>
<td>71</td>
</tr>
</tbody>
</table>

Appendix A: Demographic Survey for Participants | 73 |
Chapter 1: Introduction

The purpose of this study was to examine two key ways in which a content-based peer feedback writing intervention may contribute to community college students’ academic success: supporting improvement of academic writing, and fostering feelings of belongingness in the academic community. The ability to successfully engage in academic writing is often dependent upon students’ understanding of the recursive nature of the process of writing (Perin, Keselman, & Monopoli, 2003). In addition, students’ feelings of belongingness, or integration, into a college environment encourage persistence, which supports degree completion (Karp, Hughes, & O’Gara, 2010). In the current study, a content-based peer feedback intervention was positioned within a Community of Practice (CoP) theoretical framework. A CoP framework, as described by Lave and Wenger (1991), takes place when groups of people, characterized by their social relationships and commitment to a shared understanding, come together in different contexts to engage in meaningful activities. Specifically, the exchanges between learners that occur in peer feedback promote the learning of the participants and at the same time foster their participation as active contributors to the learning community.

In the current study, the students in multiple sections of the same course were exposed to different writing experiences, either self-editing or content-based peer feedback, to determine which condition supports greater improvement of academic writing from draft to revision. In addition, the research investigated the types of revisions, surface or content, students recommend and the types of revisions, surface or content, students implemented. Moreover, the research considered the impact of participating in a peer feedback intervention on students’ feelings of belongingness. The impetus for this research was to better understand instructional strategies
that support both academic writing development and a feeling of academic belongingness in community college students. These constructs were studied together based on the assumption that they support each other and also support student’s progress and degree completion (Karp, Edgecombe, Blazar and Weiss, 2011; Karp, Hughes, & Ogara, 2010).

Previous empirical research has analyzed benefits and best practices around peer feedback interventions. The findings indicate peer feedback focused on content rather than surface features was more likely to impact students’ writing (Nelson & Schunn, 2009), and peer feedback that engaged students with the criteria or standards for the assignment was most useful (Liu & Carless, 2006). In addition, Cho and Cho (2011) found the experience of providing feedback supported knowledge about the writing process for the provider as well as the recipient of the feedback.

Work by Perin, Bork, Peverly, Mason, and Vaselewski (2011) suggests content-specific writing interventions support students with emerging college literacy skills. Additionally, research has shown academic interventions that support social relationships and develop information networks in the classroom encourage feelings of belongingness (Karp, Edgecombe, Blazar and Weiss, 2011; Karp, Hughes, & Ogara, 2010). Belongingness in higher education has been operationalized with some variability in the literature. For example, in their investigation of the relationship between belongingness and degree progression, Karp et al. (2010) use Tinto’s integration framework (1993) to define integration as having a sense of belonging on campus. Additionally, Summers and Svinicki (2007) defined belongingness as connectedness in the classroom, and Yorke (2016) operationalized belongingness as “a feeling of belonging, welcoming, respect and home” (as taken from the survey administered in the study, 2016, p. 159). Despite the variation in definitions, students’ feelings of belongingness appear to support
academic success in higher education (Karp et al., 2010; Johnson et al., 2007; Rovai, 2002; Summers & Svinicki, 2007; York, 2016). In the current study, belongingness was operationalized as the individual’s feeling of being integrated into the college environment, sharing expectations and values of the college community (Karp et al., 2010; Rovai, 2002). Information networks are defined as “social ties that facilitate the transfer of knowledge and procedures. The information networks in which students participate could include either professors or classmates but they had to be made of ties that were strong enough to promote information gathering” (Karp et al., 2010). A defining feature of the current study is that operating within the CoP, students were engaged in authentic work creating information networks, and this engagement had both academic and affective benefits, supporting their academic writing development and their feelings of belongingness within the academic community.

The study draws upon three research literatures: academic writing, content-based peer feedback, and belongingness. Key studies in these three areas demonstrate the potential of each of these constructs to support student success. The intersections between these constructs in addressing this purpose constitute the conceptual underpinning for the current study. Perin, Keselman, and Monopoli (2003) investigated the academic writing of students enrolled in the highest-level remedial course work (these students were almost ready to take core courses) in thirteen community colleges. Students in the study wrote an information paper from required course readings; this type of writing, academic writing, is required in most college course work. The results of this study suggested remedial instruction had been ineffective in preparing students for academic writing in a college setting. The current study offers an alternative approach, incorporating developmental instruction into content-based coursework.
Nelson and Schunn (2009) found content-based feedback had the greatest impact on student writing. They also pointed out that when a summary of student work along with suggestions were provided, students were more likely to implement feedback. In the current study, students were encouraged to provide content-based feedback to peers with the support of feedback prompts from instructors. This feedback includes summary suggestions when appropriate.

Finally, Karp, Hughes, and O’Gara (2010) found integration into a college environment, defined as belonging, could be developed through participation in information networks. Information networks can be developed through classroom structures, such as academic interventions, to support integration or feelings of belonging. The authors noted feelings of belonging are important because they encourage persistence, which supports degree completion. The current study aimed to help students feel academically connected through the interactions with peers within the content-based peer feedback intervention.

**Purpose**

The study aimed to answer three questions: 1) What is the impact of a content-based peer feedback writing intervention, as measured by an instructor-created rubric, on community college students’ academic writing; 2) What is the impact of a content-based peer feedback writing intervention, as measured by the Classroom Community Survey (Rovai, 2002), on community college students’ feelings of belongingness; 3) What types of feedback comments, surface or content, do students make most frequently and what categories of content-based feedback, task or process, encourage revisions. The study contributes to the literature on using peer feedback to improve student writing in two ways – examining the impact of peer feedback in a content–specific course, and investigating the effect of peer feedback framed within a CoP
model on students’ feelings of belongingness, specifically, examining the exchanges between the learners that occur in peer feedback and may promote learning and foster feelings of belongingness in the college environment. The current project also extended the pilot study findings (Gilken, 2016) suggesting that both giving and receiving feedback have a positive impact on student writing, and that content-based feedback appears to support writing changes at the task and process-self regulation levels.

**Rationale**

The focus on peer feedback originated from the need to find a powerful instructional intervention to improve community college students’ writing development. Research has documented that low-level writing skills among postsecondary students are an ongoing concern and contribute to the lack of persistence and degree attainment for community college students (Karp, 2011; Perin, 2013). Since academic writing is a process that develops over time (Perin et al., 2003), many students require writing support beyond remedial course work for long-term success in more advanced courses. As students move on to coursework within their academic majors, they require additional support with discipline-specific writing conventions. Instructors need methods and/or models for providing this support. Research indicates that writing interventions isolated in developmental or remedial classes may not provide enough support (Karp Hughes, & O’Gara 2010; Perin, 2013; Tapp, 2013).

Peer feedback is a process that encourages reciprocal student participation by developing an information network around writing for academic purposes. Students take an active role in the instructional process by using course content as a vehicle to communicate. Peer feedback is a way to provide academic writing support in ways that engage rather than discourage students, and that are conducive to integrating writing development into content area learning.
It is clear from the review of the peer feedback literature that feedback must be coupled with clear assignments, guidance for peer reviewers to give content rich, descriptive feedback, and an opportunity for the author to reflect on the usefulness of the feedback (Cho & Cho, 2010; Lundstrom & Baker, 2009; Nelson & Schunn, 2009). What is unclear is the impact that peer feedback has on revisions of peer reviewed assignments. The current study aimed to look at this impact by evaluating the students’ original draft and comparing it with the draft revised after both giving peer feedback and receiving peer review comments while utilizing many of the characteristics of effective peer feedback. In addition, this work explored how a peer feedback intervention, situated in a CoP supports students’ feelings of belongingness. Finally, by expanding the sample size, this work builds on the information from the pilot study, which looked at the type of revisions (surface or content) and level of revisions (task, process-SR, self) that students recommend when giving feedback, and implement after receiving feedback.

The following two chapters will present the literature upon which the current study is based, the pilot study upon which the current research builds and the methodology for the research. Chapter 2 discusses community college students and writing for an academic purpose, as well as reviews the additional supports for academic writing that are created within communities of practice. The research regarding peer feedback is examined as well as the pilot study (Gilken, 2016) that influenced the current study. Finally the research questions and hypotheses for the current study are detailed at the end of chapter 2, the methodology for the study is discussed in detail in chapter 3, the results of the study are explained in chapter 4, and chapter 5 is the discussion.
Chapter 2: Literature Review

The following literature review will discuss the research that has documented that low-level writing skills among postsecondary students are an ongoing concern and contribute to the lack of persistence and degree attainment for community college students (Karp, 2011; Perin, 2013). Additionally, non-academic supports for academic writing that take place within the college community and classroom are considered. Studies that examine students’ feelings of belongingness in the academic community are analyzed in order to understand how fostering belongingness may support academic writing. Finally, general feedback and peer feedback studies are reviewed to understand the potential impact that feedback interventions on students’ academic writing.

Community College Students

Nearly half of all undergraduates in the United States are enrolled in a community college (American Association of Community Colleges, 2016). These institutions have an open-access policy for students and thereby provide the opportunity for higher education and degree completion for all students. Policies of open-access, along with affordability and flexibility, make community college an option for students who are considered non-traditional or who may not otherwise enroll in higher education. Community colleges are unique as they offer multiple pathways of access (Bragg, Kim, & Barnett, 2006). First generation college students, students from lower socio-economic households, students who are English language learners, as well as students with academic challenges are often the population of students who take advantage of community college education.

Currently, the national graduation rate within a three-year time period for students enrolled in a community college is 21%, and within the City University of New York (CUNY)
system, it is 16% (American Association of Community Colleges, 2015; CUNY, office of Institutional Research, 2011). Low-level reading and writing skills among this population of postsecondary students is an ongoing barrier associated with the low degree completion rates (Bailey, Jeong, & Cho, 2010; Perin, 2013). Students in community colleges are often required to take assessments in a variety of subjects, including writing, with their scores determining their course trajectory. Students assessed as having low-level skills are required to enroll in non-credit bearing developmental course work. Studies examining the validity of these assessments have demonstrated that writing assessments suffer from low predictive validity and result in many over- or under-placement mistakes (Scott-Clayton, 2012). Despite this, many first-time students entering community colleges are required to take developmental or remedial course work in writing based on their scores on these assessments. These difficulties with writing and passing the remedial course work create issues with maintaining eligibility for financial aid and meeting course load requirements, as many of the credit-bearing courses require passing the remedial course work before enrolling.

Writing for Academic Purposes

Writing is an academic skill that is not often explicitly taught (Antoniou & Moriarty, 2008). Experienced academic writers know they create meaning through the recursive model of writing: prewriting, drafting, revising, and editing (Torrance and Thomas, 1994). Novice writers struggle to understand this recursive process; i.e., that writing requires practice and develops over time (Perin et al., 2003). This struggle to write successfully for an academic purpose can turn away novices as well as erode academic confidence. Most students entering community college can be considered novices at writing, particularly writing for academic purposes, and thus end up in the developmental or remedial track. This novice status can fill students with
feelings of dread and self-doubt around writing (Cameron, Nairn, & Higgins, 2009). Novice students often struggle to understand the discrepancy between the goal of the composition and what they have composed (Lipnevich & Smith, 2009). Many novice students, new to the academy, struggle with both the technical skills and the emotional feelings that writing stirs up (Cameron, Nairn, & Higgins, 2009).

Although the goal of developmental coursework is to provide students with a college-ready literacy skill set (AACC, 2015), this effort often backfires. For instance, an average of 45% of the students enrolled in developmental education left college within three years without earning a degree (Karp, 2011). At one CUNY community college, 71.4% of students enter into remedial course work for writing or reading, yet only 48.7% of those students pass the remedial course the first time enrolling in it (2011-2012 BMCC Performance Goals and Targets). These statistics reflect the extent to which writing is an obstacle for community college students. Additionally, research has shown that even after taking remedial coursework, the reading and writing requirements in college-level courses are often difficult for students (Perin & Charron, 2006). Academic supports like remedial or developmental education require reform to increase their efficacy (Karp, 2011; Perin 2013) and ultimately, support degree completion.

The traditional developmental approach to improving writing skills focuses on isolated skill building but does not situate academic writing in an authentic context for students. This approach does not address the specific content structure in individual disciplines, nor does this approach individualize the instruction based on the diversity of needs within the community college population (Perin, 2013). To improve educational outcomes for underprepared students, it is critical to embed developmental instruction in content-based courses (Perin, 2013). Supplemental classroom interventions aimed specifically at working on reading and writing
skills in the context of instruction in content area subjects have had promising results (Perin et al., 2011). These interventions are focused on content-specific courses and reinforce specific literacy skills. For example, Perin et al. (2011) implemented a ten-week intervention that emphasized written summarization and was based on reading passages from science textbooks. Results showed students’ scientific summarization skills significantly improved compared to the group not receiving the intervention. This work suggests that students with emerging college-level literacy skills may benefit from content-specific supplementary curricular interventions. The current study took into account the recommendations from the research (Perin et al., 2011; Perin 2013) and extended the work on content-specific curricular interventions by utilizing a peer feedback writing intervention in content-specific course work in teacher education.

**Non-Academic Supports for Writing**

Along with reform to the current developmental model, additional explanations for the low level of degree completion must be explored. Skills that have been labeled in the literature as “non-academic,” including: navigating bureaucratic requirements, meeting new expectations, and engaging in interpersonal relationships, also appear to contribute to successful degree completion (Karp, 2011). Karp, Edgecombe, Blazar, and Weiss, (2011) examined how academic interventions that also support non-academic skills appear to create a pathway for college success. The researchers reviewed 128 books, journals articles, and reports. These included empirical works and commonly cited theoretical works focusing on student persistence in commuter and two-year institutions. Their goal was to integrate current understandings of student persistence and to propose a more process-oriented framework of non-academic support. One of the non-academic support mechanisms that this research group identified is the importance of creating social relationships within the classroom. Utilizing academic activities
that develop strong relationships between students appears to make students feel that they belong in higher education (Karp, 2011). Working within the classroom community to structure instructional intervention may also strengthen social relationships. Tinto’s (1993) integration framework posits students are more likely to remain enrolled in an institution if they are academically and socially connected to the institution. Connections can be accomplished when students become involved with clubs or academic activities. Further, when these connections are developed, students are more likely to persist to degree completion. In Tinto’s (1993) framework, students who do not become socially or academically connected to postsecondary education may struggle to remain enrolled (Karp, 2011). In research by Karp, Hughes, and O’Gara (2010), the authors found integration, defined as a feeling of belonging, develops as information networks develop in the classroom. Moreover, the same activities lead to both academic and social relatedness. One framework to consider supporting the development of information networks is a community of practice.

**Communities of Practice as a Theoretical Framework**

The model of situated learning (Lave & Wenger, 1991) offers one framework with which to think about the benefits of peer feedback in supporting improvement in academic writing. Lave and Wenger suggest that deep learning takes place when groups of people, characterized by their social relationships and commitment to a shared understanding, come together in different contexts to engage in meaningful activities. The authors label this coming together as a Community of Practice (CoP). Within this model, participation in a peer feedback intervention situates the students within a CoP. The students are co-participating, serving as both authors and editors, making peer feedback formative in nature, with participants working toward the shared goal of increased skill. Another feature that distinguishes peer feedback in a CoP is all
participants serve in both roles, in contrast to other peer feedback interventions where one participant serves as a mentor or more knowledgeable other. Through active participation in this community, students are constructing information networks via their participation in the peer feedback process. These information networks encourage an academic and social connection (Karp, Hughes, and O’Gara, 2010). Situating this work within a CoP framework allows students to engage in legitimate peripheral participation. Students who are newcomers to academic writing are able to participate in the academic community by providing content-based feedback to a peer. By using content that is covered in the course, the instructor can ensure all reviewers have a shared basic level of knowledge to draw upon in the peer feedback process. Additionally, using course content allows students equal access to the information, avoiding differences in background knowledge. Moreover, using the course content can support academic writing to become a process in which students collectively engage, regardless of their skill level, and work to improve.

According to Wenger (1998), three elements are necessary for a true CoP: mutual engagement, a joint enterprise, and a shared repertoire. As students actively participate in a CoP, they are combining ‘doing’ with ‘being,’ which has an impact on the students’ identity (Wenger, 1998). For example, when a class of students studies the social foundations around education, these students become more politically aware and empowered by their professional activity. This happens through discussion of class readings and shared experiences (as a class) -- the ‘doing’ creates the ‘being’. The current study contains all three of the necessary elements described by Wenger (1998). By participating in the peer feedback intervention, the students are mutually engaged as they come together twice a week for class in the area they have chosen as their major. They are also mutually engaged in the structured feedback activities, for their own
writing and to support their classmates’ writing. Being part of a class of students with the goal of graduating within the same major creates a joint enterprise. Utilizing the resources and scaffolds provided within the intervention creates a shared repertoire around academic writing. These three aspects of the peer feedback intervention embed the student within a community of learners working toward a shared goal of improved writing as an emerging educational professional.

Price, O’Donovan, and Rust (2008) examine the idea of using a CoP to develop student understanding of assessment standards. The authors assert that a CoP is an effective way to improve student learning. The authors add to the theoretical framework by offering three suggestions on how CoPs can be cultivated to allow for full student participation:

- Develop hospitable social learning spaces - create spaces that allow for informal sharing of ideas and collaborative learning.
- Develop social learning processes within the curricula – create interventions that engage students in practice as a method of sharing understanding.
- Facilitate ‘pedagogical intelligence’- empower the students by engaging them in the explicit discourse around teaching and learning.

The current study situated the classrooms involved in a peer feedback instructional intervention within a CoP in community college early childhood education classrooms. In addition, the current study also made use of the suggestions from O’Donovan et al. (2008) in the peer feedback intervention. The framework of a CoP is particularly relevant to community college students who are new to the academy and just beginning to engage in the process of academic writing. Participating in communities of practice is important for community college students because being active participants in the practice of academic writing through a peer feedback intervention may also support the development of information networks that encourage
social and academic integration or belongingness (Karp, Hughes, and O’Gara, 2010; Tapp, 2013; Wenger, 1998).

**Belongingness**

Belongingness is a term used in the fields of both psychology and education. There are multiple definitions of belongingness that reflect the work in the respective fields. Maslow (1962) posited a psychological hierarchy that included the construct of belongingness and acceptance. In Maslow’s theory (1962), the need for belongingness was a priority over knowledge. Maslow’s work on belongingness is mostly theoretical, with little empirical research (Levett-Jones, Lathlean, Maguire, & McMillan, 2007). In contrast, the body of empirical work around relatedness (e.g., Skinner, Connell & Wellborn, 1990; Ryan & Powelson, 1991), that is “secure and satisfying connections with others in one’s social milieu” (Deci, Vallerand Pelletier, & Ryan, 1991 p. 332), suggests that a sense of belonging within a school context may enhance motivation and engagement (Goodenow, 1993). Similarly, Goodenow’s research (1993) investigated the influence of classroom belonging and support on academic motivation, effort, and achievement, and found that belonging and support influenced success for students in academic classes.

More recently, Kuh, Kinzie Buckley, Bridges, and Hayek (2006) completed a commissioned report for the National Symposium on Postsecondary Student Success. In synthesizing the relevant literature, the researchers documented policies, programs, and practices that impact success for postsecondary education students. Kuh et al. (2006) posited that peer interactions that foster learning and discourse around course content, including instructional interventions around peer tutoring and group work, have a positive impact on student learning.
Peer interactions from these types of instructional interventions support social integration (belongingness) for students (as cited in Bean, 1980; Sady, 1970; Tinto, 1975).

The construct of belongingness in higher education has been operationalized with some variability, and it continues to be investigated as a construct important for degree completion. For example, Yorke (2016) developed a survey to measure student belongingness, engagement, and self-confidence as it is important for retention and student success. In this work, belongingness is operationalized as, “a feeling of belonging, welcoming, respect and home” (as taken from the survey administered in the study, 2016, p. 159). In their investigation of the relationship between belongingness and degree progression, Karp et al. (2010) use Tinto’s integration framework (1993) to define integration as having a sense of belonging on campus. Karp’s study noted that integration in college is both academic and social, and the same activities can lead to both academic and social relatedness. In Rovai’s 2002 study to develop and test the Classroom Community Scale for distance learning, belonging is defined as:

- a feeling that members (of a classroom community) matter to one another and the group, where each person has duties and obligations to each other and the school and that they possess shared expectations that each member’s educational needs will be met through their common commitment to shared goals (p. 198).

Beyond the above studies, belongingness features as an important construct in distance learning, where only 50% of students complete on-line or distance courses. Defining belongingness as connectedness in the classroom, Summers and Svinicki (2007) investigated an empirical relationship between classroom community and students’ achievement goals as an explanation for differences between cooperative and non-cooperative (lecture style) classrooms. Results revealed that students have a higher feeling of classroom community in cooperative learning
classrooms. Finally, Johnson et al. (2007) examined a sense of belonging among first-year college students and offered the concept of “a sense of belonging” as the individual’s view of whether he or she feels included in the college community. Johnson’s study found that “a sense of belonging” is based on the individual’s view of whether he or she feels included in the college community. African American, Latino, and Asian Pacific American students reported a less strong sense of belonging than White students. Johnson’s study differs from Tinto’s integration framework (1993), which viewed placed the responsibility on racial minorities to acculturate into systems and abandon their home culture (Johnson et al., 2007). It is evident that definitions of belongingness vary. Nonetheless, the use of this construct across a broad spectrum of research demonstrates that belongingness is an important construct to measure when thinking about the constructs that contribute to student degree completion.

In the current study, the definition of belongingness as integration into a college environment extends beyond Tinto’s framework of integration (Karp et al., 2010) to include a common thread among all the definitions, which defines belongingness as a feeling of connectedness to a classroom community through an academic intervention and peer interactions. The current study anticipated that situating the peer feedback intervention within a CoP would support the development of belongingness within the classroom community by allowing the students to create information networks and thus positively impact students’ feelings of belongingness. One unique feature of the current study was that it highlighted the possibility of information networks supporting belongingness within classroom communities. To help build information networks, instructors can consider using content-based peer feedback interventions for writing assignments in the classroom community. This type of intervention uses peer feedback as a vehicle for developing an information network and encouraging academic
belongingness. Prior to exploring the characteristics of peer feedback for this type of intervention, it is useful to understand the impact on writing demonstrated in the general feedback literature.

**General Feedback**

General feedback research findings from Matsumura, Patthey-Chavez, Valdes, and Garnier (2002) indicated that content written feedback is effective, and the amount of content feedback compared to form (or surface) feedback significantly predicted the quality of a student’s final work. Similarly, Lee (2009) documented that secondary and higher education instructors believed that content feedback was important.

In the current study, content feedback was defined as written feedback that addresses either the organization or the meaning of student’s writing. Whereas surface feedback was defined here as any written feedback directed toward the grammar, word usage, spelling or punctuation of a student’s writing (Matsumura et al., 2002). Research that explored written feedback given to students noted that instructors give mostly surface feedback (Matsumura et al., 2002; Lee, 2009). In contrast, the research by Lipnevich & Smith, 2009, noted that written feedback that referred to students’ work and was detailed and specific was strongly related to improved student work.

Another way to categorize feedback is as positive feedback or corrective feedback. Positive feedback gives praise or addresses what has been accomplished correctly. In contrast, corrective feedback addresses errors or work that has been completed incorrectly. Research findings from Lipnevich and Smith (2009) appear to link corrective feedback to students’ understanding of the discrepancy between the goal of the composition and what the student has composed. Lipnevich and Smith (2009) noted that detailed descriptive feedback, given alone
without grade or praise, was found to be the type of feedback most implemented. Hattie and Timperley (2007) proposed a feedback model to help students understand the discrepancy between their current level of work and the desired goal. According to the model, there are four levels of feedback that answer three questions: “Where am I going?”, “How am I going?”, and “Where to next?” The four levels include feedback at the task level, feedback at the process level, feedback about self-regulation, and feedback about the self as a person. Task-level feedback relates to a student’s understanding of a task. Feedback at the process level links to the processes a student would need to perform to complete a task. Feedback at the self-regulation level is important as it links to the student’s self-efficacy and the person’s ability to complete the task. Finally, feedback at the self-level was found to be the least helpful as it emphasizes personal attributes rather than strategies or effort (Hattie & Timperley, 2007). The challenge with the feedback levels is that they are not always clear. The definitions around the process and self-regulation level are similar and create challenges around defining into which category specific feedback falls. In the proposed study, we use the revision to the model proposed by Almendral (2012). In Almendral’s model, the process and self-regulation levels are combined because it is not always possible to identify the difference between the two levels. The current study investigated the type of feedback students provide to peers. Beyond looking at general feedback, many of the findings from the specific literature on peer feedback can be instructive when designing a peer feedback intervention

**Peer Feedback**

To effectively incorporate peer feedback into the classroom, instructors must be aware of the characteristics of effective peer feedback, as well as the theoretical implementation around peer feedback as an instructional intervention. To do so, it is important to review the history of
peer feedback as an instructional intervention in higher education. While peer feedback is not a new instructional technique, its application to student writing has, surprisingly, received less attention over the years (Cho & Cho, 2010; Strijbos, Narciss, & Dunnebier, 2010; Topping, 1998).

In 1988, DiPardo and Freedman investigated some of the existing pedagogical literature on peer feedback groups. The authors began by tracing the emergence of peer feedback groups in classrooms and the reasons instructors chose to use this type of intervention. They noted Hairston’s (1982) research around writing instruction, which described a shift from writing as a product to writing as a more recursive process, with instruction aimed at intervening in that process. According to DiPardo and Freedman, this shift suggested the appeal of peer feedback as an opportunity for intervening in the writing process. According to the authors, peer feedback offered opportunities for collective discovery of the writing process as well as collaborating with supportive others during the process. The collaborative opportunities available in a peer feedback intervention centered it in a social learning process framework.

The authors examined how a Vygotskian theory might be applied to peer feedback. They proposed that Vygotsky’s theories, which emphasize that learning is a result of social interaction, can provide a framework informing research around peer feedback interventions. This type of intervention took responsibility away from the teacher and gave it to the learners. Peers both received and gave advice, assuming the role of novice and expert, creating communities of “knowledgeable peers” who interact and reinforce one another’s ideas (DiPardo & Freedman, 1988).

DiPardo and Freedman (1988) reviewed four studies that focused on peer feedback in a college classroom. One study by Nystrand (1986) focused on 250 students in 13 college
classrooms. The study measured the difference in student work between classes that participated in peer feedback and classrooms that only received teacher feedback. The results found that students in the peer feedback group showed evidence of greater gains in their writing of personal essays than those in the teacher feedback group. In an extension of this work, Nystrand and Brant (1987) further investigated student revisions. The researchers collected drafts and revisions from students in the peer feedback group and the teacher feedback group. Trained raters found that students in the peer feedback group produced higher quality revisions and were more aware of their needs and accomplishments than those in the teacher feedback group.

Despite the above findings, other studies have not necessarily shown peer feedback to be as successful. In a study by Newkirk (1984), ten students at the University of New Hampshire were evaluated by ten teachers and peers on four different writing tasks. Newkirk noted striking differences between teacher and student feedback, with student feedback more tolerant of underdeveloped writing. However, student respondents were less able to put aside their own opinions, thus rejecting an idea rather than helping a peer better express it. A study by Berkenkotter (1984) yielded similar results. She examined three case studies in her freshman course and found that students resisted feedback from peers and often felt more confused than enlightened about the writing process after receiving feedback. Commenting on the contradiction between the studies, Dipardo and Freedman, (1988) recommended a stronger grounding in theoretical foundations that embrace the teaching-learning process and allow for a process-oriented, diverse learning community.

Topping (1998) also engaged in a review of peer assessment (defined in this paper as peer feedback) in higher education between the years of 1980 – 1996. Topping examined the theoretical underpinnings of peer feedback, the reliability and validity of peer feedback studies,
and the outcome of the studies. Topping considered peer feedback used in tests, grades, oral presentations, writing, group projects, and computer-assisted peer assessment. Of a total of 109 studies, 30 of the studies focused specifically on peer feedback with writing. Topping described a vast amount of literature on the peer feedback writing intervention but many of the studies were descriptive or purely anecdotal.

Topping (1998) noted that establishing a single overarching theory for peer feedback was difficult due to the origins of the literature in multiple subject specialties with different theoretical perspectives. In addition, Topping elaborated that the literature features many hypotheses about the ways in which peer feedback creates effects for student writing but tests of their validity are often not included in the studies. The 109 studies reviewed in Toppings’ work situated peer feedback in a variety of theoretical perspectives including: Vygotskian, cognitive, metacognitive, affect, social and transferable skills, and systematic benefits.

Reliability and validity were considered in 31 of the studies reviewed. Studies comparing teacher assessment to peer assessment or student draft to final revision were considered reliable when they reported correlation coefficients, percentage agreements, or measures of central tendency and variance (Catterall, 1995; Hughes & Large, 1993a, 1993b; Taylor, 1995). The majority of the studies suggested that peer assessment is reliable and valid in many different applications, and that it appeared more reliable than self-assessment.

Many of the studies in Toppings’ (1998) review that looked at peer feedback with writing interventions were in the context of an ESL classroom. In many of the studies reviewed by Topping (Brock, 1993; Chaudron, 1983; Devenney, 1989; Jacobs & Zhang, 1989), conditions showed improvement between first drafts to revisions. In research that compared self-editing and peer feedback intervention groups (Zhu, 1994, 1995; Graner, 1985), both groups improved
but the peer feedback group was associated with a better attitude toward writing in general. Overall, the studies that focused on using peer feedback with writing interventions had significant reliability and suggested that peer feedback is as good as, and sometimes better than, teacher feedback (Topping, 1998).

There is a small body of more recent empirical studies suggesting that peer feedback is an effective method for supporting students’ writing abilities. For instance, Cho and Cho (2010) found that the experience of providing feedback to a peer allows the reviewer to construct knowledge about the writing process, which could lead to improvement in the reviewer’s own writing skills. Moreover, Nelson and Schunn (2008) found that feedback focused on content rather than on writing mechanics was more likely to impact students’ writing. They also found that peer feedback associated with improved performance included clear, specific feedback that focused on content. Peer feedback also was reported to be most useful when it engaged the students with the criteria or standards for the assignment (Liu & Carless, 2006). Providing students with the criteria or rubric for the assignment enables both the author of the assignment and the peer reviewer to become familiar with the desired outcomes of the task, so that they enhance their knowledge by completing the task and completing the review. Diab (2011) noted that students who engaged in peer feedback improved their revisions over students who engaged in self-editing. In addition, Cho, Schunn, and Wilson (2006) found that the reliability and validity of ratings by college students who received modest training in the use of evaluation rubrics were considered comparable to expert ratings. Finally, Nelson and Schunn (2009) noted that peer feedback that provided guidance or suggestions was the type of feedback that was most often implemented in student revision (Nelson & Schunn, 2009). In the proposed study, content-based peer feedback is operationalized as peer assessments or comments that are substantive
rather than evaluative and refer to topics in the course curriculum.

In all, these findings indicate that both giving and receiving peer feedback have the potential to positively impact students’ writing (see Table 1), can increase student self-editing, and can be reliable and valid. However, two gaps in both the original studies as well as the more recent body of work involve looking at how writing abilities progress over time and the impact of the peer feedback intervention in college disciplinary course work (Cho & MacArthur, 2010). The current study aimed to help address this gap by measuring writing progress from draft to final edit and looking at these changes within college disciplinary work, specifically early childhood education majors.
### Table 1

**Characteristics of Empirical Peer Feedback Studies with Undergraduate Students**

<table>
<thead>
<tr>
<th>Authors</th>
<th>Focus</th>
<th>Findings</th>
</tr>
</thead>
</table>
| Llado et al. (2014)      | Examined student perception of peer assessment with pre and post test questionnaires | -Students perceive peer assessment as positive for learning at different levels  
                             |                                                                        | -Students expressed concern about peers abilities and the amount of responsibility required to engage in peer assessment. |
| Diab, N.M. (2011)        | Analyzed improvement from draft to revision with between self-editing and peer editing | -Peer-editing group improved their draft more than self-editors.  
                             |                                                                        | -Self-editing group revised errors more than the peer editing group  
                             |                                                                        | -The difference was attributed to peer interaction |
| Cho and Cho (2010)       | Analyzed how providing feedback affects reviewer’s own writing        | -Providing feedback allows reviewer to construct knowledge about the writing process  
                             |                                                                        | -Strength based feedback significantly improved student writing |
| Lundstrom and Baker (2009) | Compared impact of giving versus receiving feedback                     | -Students who gave feedback made more significant gains than those did not give feedback  
                             |                                                                        | -Students at the lower writing level had more significant gains |
| Nelson and Schunn (2009) | Analyzed how understanding and agreement with feedback mediated revision | -Feedback was more likely to be implemented when a summary of student work and solutions to issues were provided  
                             |                                                                        | -Concerns about the subjective nature of peer feedback,  
                             |                                                                        | -Concerns about student expertise,  
                             |                                                                        | -Concerns about perceived loss of power by having peers rate work,  
                             |                                                                        | -Concerns about time  
                             |                                                                        | -Three suggestions around using peer feedback: peers not participate in grading, clear assignment rubric, and instructor create a classroom climate |
| Lui and Carless (2006)   | Analyzed data to suggest why peer feedback may be underutilized         | -No tangible improvements for student writing  
                             |                                                                        | -Student evaluation of the intervention positive  
                             |                                                                        | -Majority of students accepted the advice from a peer reviewer. |
Key Design Elements for Peer Feedback Intervention

In addition to the characteristics of general feedback and peer feedback detailed above, key design elements have been recommended for a successful feedback intervention. Bitchener and Ferris (2012) explored the use of written corrective feedback (WCF) in composition writing for native English language speakers (L1 students) and the use of corrective feedback for Second Language Acquisition (SLA). The authors reviewed the key design components of empirical research that are necessary to test whether feedback can play an effective role. They further identified critical design flaws and execution shortcomings in some of the previous feedback and peer feedback studies.

Based on their findings, Bitchener and Ferris (2012) recommend that the general principles of research design should be implemented in feedback and peer feedback studies to evaluate instructional effectiveness. First, the authors highlight the need to establish the current performance level of the learner by means of using a pretest piece of writing, in whatever linguistic form or structure is to be investigated. Second, the use of a control group is necessary to allow a comparison between the performance accuracy of learners who receive written feedback and those who do not receive feedback. A third issue concerned the measurement of accuracy in the posttest writing pieces. Specifically, pieces are to be a valid measurement of improvement and comparable writing tasks need to be administered at each stage of the process.

Keeping in mind the general principles of research design and how these principles apply to peer feedback work, Bitchener and Ferris (2012) discussed details about the benefits of peer feedback. They describe the value of peer editing workshops in classrooms, if these workshops are carefully designed and implemented. They note that peer feedback workshops provide two distinct benefits for students. Applying careful reading skills to another student’s work can help
students develop the critical analysis and reading strategies they need to examine their own writing. Additionally, peer review activities can be utilized to help students apply and practice specific self-editing strategies. According to Bitchener and Ferris (2012), the key to realizing the benefits of peer editing lies in the structure and focus of activities. The peer-editing workshop should be clearly and narrowly focused and teachers should model the activity first with a sample student paper before students begin working on each other’s texts.

The design and implementation of the current study are guided by the abovementioned recommendations (Bitchener & Ferris, 2012). Beyond the study design elements, key theoretical elements around creating social relationships and communities of practice are implemented to focus on non-academic supports provided to students in this instructional intervention.

**Pilot Study**

Gilken (2016) implemented a small-scale exploratory pilot study that explored a Community of Practice (CoP) framework to implement a content-based peer feedback intervention. The goal of this work was to investigate the contribution of the peer feedback intervention to the improvement of the writing skills of 46 community college students in four classes; three classes received the peer feedback intervention and one class received a business-as-usual revision workshop. Specifically, this work investigated the impact of revision from students’ drafts to final writing piece, the types of revisions that students made after the experience of giving and receiving feedback, and the perceptions reported by students around the helpfulness of the peer feedback. The study utilized assignment rubrics, a student reflective questionnaire, and a peer feedback comment form to evaluate the impact of the peer feedback intervention. To examine change in the students’ final draft scores compared to their first draft scores, two individual raters were trained and scored each paper. A t-test was conducted to
compare the pretest and posttest drafts in all conditions and an ANCOVA was conducted, using the pretest drafts as a covariate, to compare the posttest drafts in all conditions. In all three sections of the peer feedback treatment group the posttest scores were higher than pretest scores. There were no significant differences between the pretest and posttest scores in the control group. The posttest scores in the peer-feedback condition were significantly higher than the posttest scores in the comparison condition. In addition, students made both surface and content revisions as a result of giving and receiving peer feedback with the majority of the revisions coded as content-based. While the results of these comparisons were in no way conclusive, they suggest that further exploration into impact of content-based peer feedback on improving student writing would be beneficial.

**Study Proposal**

The current research builds and expands upon Gilken’s (2016) pilot study. The current study increases the sample size, more clearly articulates the benefits of situating the content-based peer feedback instructional intervention within a CoP, and defines the construct of belongingness as an important outcome along with improvement in academic writing. In order to assess belongingness, a standardized measure was included.

This study consisted of 12 class sections per semester, over two semesters for a total of 24 class sections. Each semester, six class sections participated in the content-based peer feedback intervention and six class sections received a business-as-usual, editing workshop. All class sections completed a draft and a final piece on a specific writing assignment. The writing was analyzed using a pretest/posttest design to measure improvement from draft to final and the final writing pieces were compared across conditions. The same instructor-created rubric was used across classes to analyze drafts and final pieces. Students in the peer feedback condition
received the same peer feedback comment form to guide feedback. All students completed a demographic survey, which was used to compare classes, prior to engaging in the intervention. Finally, the work compared two types of feedback provided and implemented, surface and content. In addition, content feedback was further analyzed using the general feedback literature. Lastly, to investigate the impact of the content-based peer feedback on students’ feelings of belongingness, belongingness was measured with a pretest/posttest design using the Classroom Community Scale (Rovai, 2002), a standardized measure of belongingness and learning.

Methodology for the current study is discussed in detail in Chapter 3. The research questions and hypotheses for the current study follow.

**Research Questions and Hypotheses**

In the current study, three general research questions were addressed. The first question focused on the impact of a content-based peer feedback writing intervention on students’ academic writing. The second question addressed the impact of a content-based peer feedback writing intervention on students’ feelings of belongingness. The third set of research questions focused on feedback comments - the types of feedback comments that students make most frequently and the types of feedback comments that elicit content-based revisions.

I. Impact of a content-based peer feedback writing intervention

A. Research Questions

1) What is the impact of a content-based peer feedback writing intervention on community college students’ academic writing, as measured by an instructor-created rubric?
2) What is the impact of a content-based peer feedback writing intervention on community college students’ feelings of belongingness, as measured by the Classroom Community Survey (Rovai, 2002)?

B. Hypotheses

1) Students in the content-based peer feedback class section will have higher posttest scores than the students in the business as usual class sections.

2) Students in the content-based peer feedback class section will have stronger feelings of belongingness than the students in the business as usual class sections.

II. Types of feedback comments

A. Research Questions

3) What type of feedback comments, surface or content, do students make most frequently?

4) What type of content-based comments, task or process, do students make most frequently?

5) Do process-based feedback comments or task-based feedback comments elicit more content-based revisions from students?

B. Hypotheses

3) Student will make content-based comments more often to their peers.

4) Student will make task-comments more frequently to their peers

5) Process-based feedback comments will elicit more content-based revisions from students.
Chapter 3: Methodology

This chapter describes the methodology that was used to explore the abovementioned research questions about the content-based peer feedback intervention. This chapter will describe the participating sample, the measures that were used to collect data and then details the procedure used in the implementation of the study. Finally, this chapter specifies the data coding procedures and the statistical analyses that were used to evaluate each research question.

Participant Selection

After receiving approval from the Institutional Review Board, participants were recruited from the Borough of Manhattan Community College (BMCC) Early Childhood Education foundations courses. The study was considered an evaluation of a pedagogical approach and the IRB classified the intervention as exempt. To begin, course instructors were approached by the Principal Investigator (PI) to participate in the study. Instructors who agreed to participate signed a letter of informed consent indicating their agreement. The instructors were then randomly assigned to either the treatment or control condition. All instructors completed a Demographic Survey, described in the Measures section. The PI then visited each instructor’s class to recruit student participants.

All of the student participants were in their first year in the Associate in Science (A.S.) degree program in early childhood education (ECE), and were in either their first or second semester of education courses. The treatment group consisted of 12 class sections, seven sections of the Psychological Foundations in Education course, and five sections of the Social Foundations in Education course. The control group similarly consisted of 12 class sections, five sections of the Psychological Foundations in Education course, and seven sections of the Social Foundations in Education course. Students in both groups completed many of the same general
education requirements, including remedial requirements in reading and writing. The participants in each class completed a Demographic Survey, described in the Measures section.

All students participated in the intervention, as it is an integral component of the work for the class. However, students chose whether or not to consent to have their work included in the study dataset. All students received identical cover letters at the beginning of the semester, attached to the demographic survey.

The cover letter contained information about the research study, risks and benefits involved in the research and important contact information. The cover letter let students know that they had the opportunity to indicate whether they would like their work to be included in the data set. Students were informed that their participation in the study was entirely anonymous; all students were given a participation ID number assigned by the PI. The participation ID number was a random number assigned to the students from the PI. Each student was given their number during the first week of class from the PI. The PI kept the list of randomly generated student ID numbers locked in a file and no one other than the PI had access to it. All work submitted to the study by the students was only identified by the participation ID number. Students were asked to indicate their agreement to include their data in the study or their decision to opt their data out by checking a box at the end of the cover letter. No signatures were collected. See Appendix J for cover letter.

At the beginning of the study 18 instructors, teaching 36 class sections were originally recruited to complete the intervention. Due to issues with fidelity, 14 instructors, teaching 24 sections were included in the study; 10 of the instructors taught two class sections and four instructors taught one class section for a total of 24 class sections. There was an average of 25 students per class section and 346 students consented to have their work used in the study. Out of
the 346 students, 10 students were randomly selected from each class section to have their work included in the study using a random number generator. In this study participant is operationalized as class section. Class section is operationalized as the mean of the 10 students from each class section who were randomly selected to have their work included in the research. There were a total of 240 randomly selected students aggregated into twenty-four class sections or participants.

**Descriptive Statistics - Instructors.** The majority of the instructors were female 12, (85.7%). The instructors were fairly evenly distributed by years at BMCC: 4 (28.6%) 1 year, 4 (28.6%) two years, and 4 (28.6%) five or more years. The majority of the instructors were part-time, 10 (71.43%) and the majority of the instructors were Black/African American, 8 (57.7%). See Table 2.
Table 2

Instructor Demographic Information, Frequencies and Percentages

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Sub-Groups</th>
<th>Total Group</th>
<th>Control</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td>N (%</td>
<td></td>
<td>N (%)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>12 (85.7%)</td>
<td>6 (85.7%)</td>
<td>6 (85.7%)</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>2 (14.3%)</td>
<td>1 (14.3%)</td>
<td>1 (14.3%)</td>
</tr>
<tr>
<td>Rank</td>
<td>Lecturer</td>
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<td>2 (28.6%)</td>
<td>4 (57.1%)</td>
</tr>
<tr>
<td></td>
<td>Instructor</td>
<td>4 (28.6%)</td>
<td>3 (42.9%)</td>
<td>1 (14.3%)</td>
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<tr>
<td></td>
<td>Assistant</td>
<td>4 (28.6%)</td>
<td>2 (28.6%)</td>
<td>2 (28.6%)</td>
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<tr>
<td>Employment</td>
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<td>2 (28.6%)</td>
<td>2 (28.6%)</td>
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<td></td>
<td>Part-time</td>
<td>10 (71.4%)</td>
<td>5 (71.4%)</td>
<td>5 (71.4%)</td>
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<tr>
<td>Years at BMCC</td>
<td>1 or less</td>
<td>4 (28.6%)</td>
<td>2 (28.6%)</td>
<td>2 (28.6%)</td>
</tr>
<tr>
<td></td>
<td>2 years</td>
<td>4 (28.6%)</td>
<td>1 (14.3%)</td>
<td>3 (42.9%)</td>
</tr>
<tr>
<td></td>
<td>3 years</td>
<td>2 (14.3%)</td>
<td>1 (14.3%)</td>
<td>1 (14.3%)</td>
</tr>
<tr>
<td></td>
<td>5 or more years</td>
<td>4 (28.6%)</td>
<td>3 (42.9%)</td>
<td>1 (14.3%)</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>Black/African American</td>
<td>8 (57.1%)</td>
<td>5 (71.4%)</td>
<td>3 (42.9%)</td>
</tr>
<tr>
<td></td>
<td>European American</td>
<td>5 (35.7%)</td>
<td>2 (28.6%)</td>
<td>3 (42.9%)</td>
</tr>
<tr>
<td></td>
<td>Asian American</td>
<td>1 (7.1%)</td>
<td>0 (0%)</td>
<td>1 (14.3%)</td>
</tr>
</tbody>
</table>

N                                      14 (100%)  7 (100%)  7 (100%)  

Note. Numbers reflect percentages of the total sample. Percentage values may not total 100% because some participant responses fell into more than one category and not all participants answered each question.

Descriptive Statistics – Students. The majority of the students who participated in the study were female, 230 (95.8%) and had taken remedial course work in writing, 175 (72.9%). Additionally most students identified Latina, 101 (41.6%) and reported Spanish as their first language, 128 (53.3%). Participants were fairly evenly distributed around family experience with college, 126 (52.5%) first in family to attend as shown in Table 3.
Table 3

**Student Demographic Information, Frequencies and Percentages**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Sub-Groups</th>
<th>Total Group</th>
<th>Control</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (%)</td>
<td>N (%)</td>
<td>N (%)</td>
<td>N (%)</td>
</tr>
<tr>
<td><strong>Race/Ethnicity</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latino(a)</td>
<td>101 41.67%</td>
<td>48 (40%)</td>
<td>53 (44.2%)</td>
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</tr>
<tr>
<td>Black/African American</td>
<td>60 25.0%</td>
<td>35 (29.2%)</td>
<td>25 (20.8%)</td>
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<tr>
<td>European American</td>
<td>24 10.0%</td>
<td>13 (10.8%)</td>
<td>11 (9.2%)</td>
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</tr>
<tr>
<td>Asian American</td>
<td>19 7.9%</td>
<td>9 (7.5%)</td>
<td>10 (8.3%)</td>
<td></td>
</tr>
<tr>
<td>Latino(a)/Black</td>
<td>14 5.8%</td>
<td>5 (4.2%)</td>
<td>9 (7.5%)</td>
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<tr>
<td>Other</td>
<td>22 7.5%</td>
<td>10 (8.3%)</td>
<td>12 (10%)</td>
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</tr>
<tr>
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</tr>
<tr>
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<td></td>
</tr>
<tr>
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<td>10 4.2%</td>
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<tr>
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<td>128 53.3%</td>
<td>67 (55.8%)</td>
<td>61 (50.8%)</td>
<td></td>
</tr>
<tr>
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<td>38 (31.7%)</td>
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<td></td>
</tr>
<tr>
<td>Mandarin</td>
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<td>2 (1.7%)</td>
<td>5 (4.2%)</td>
<td></td>
</tr>
<tr>
<td>Cantonese</td>
<td>5 2.08%</td>
<td>4 (3.3%)</td>
<td>1 (.8%)</td>
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</tr>
<tr>
<td>Other</td>
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<td>8 (6.6%)</td>
<td>5 (4.2%)</td>
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</tr>
<tr>
<td><strong>Other family members attend college</strong></td>
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<tr>
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<tr>
<td>Yes</td>
<td>114 47.5%</td>
<td>61 (50.8%)</td>
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<tr>
<td>Reading</td>
<td>168 70.0%</td>
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<tr>
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<tr>
<td></td>
<td>N 240 (100%)</td>
<td>120 (100%)</td>
<td>120 (100%)</td>
<td></td>
</tr>
</tbody>
</table>

Note. Numbers reflect percentages of the total sample. Percentage values may not total 100% because some participant responses fell into more than one category and not all participants answered each question.
Measures

To address the research questions, the study implemented six measures: 1) Demographic Survey (Participant and Instructor), 2) Assignment Rubrics, 3) Student Reflective Questionnaires, 4) Peer Feedback Comment Form, 5) Classroom Community Survey (Rovai, 2002).

Demographic Survey - Participant. Each participant was asked to complete a demographic survey at the beginning of the semester. The 8-item Demographic Survey was used to collect background information about the participants in each of the classes. This included: the participants’ age, number of years enrolled at BMCC, previous college experience, number of remedial courses taken in reading and writing, race/ethnic background, language background, family experience with college and gender. This information was used to better describe the population sample. See Appendix A for the Participant Demographic Survey.

Demographic Survey – Instructor. Each instructor was also asked to complete a Demographic Survey prior to the beginning of the semester. The 8-item survey was used to collect background information about the instructors of each class, including: instructors’ rank, area of expertise, years teaching, race/ethnicity, and years at BMCC. See Appendix B for the Instructor Demographic Survey.

Assignment rubrics. There were two assignments included in the study, one assignment for the 16 Psychological Foundations class sections and one assignment for the 16 Social Foundations class sections. All participants completed a draft and final revision for their respective assignments. For each assignment, the instructors used a rubric, which was used across all the relevant classes (i.e., the rubric for the Psychological Foundations assignment was used with both the control and treatment sections). The rubrics outlined each assignment and
detailed how they were assessed. The rubrics measured the quality of five components of the written assignment: the students’ personal teaching philosophy, a discussion of class concepts, a comparison of the class concepts to students’ personal teaching philosophy, a description of how the personal philosophy fits with class concepts, and writing mechanics. The student could earn a total of fifteen points for the assignment. Each section in the rubric is worth three points. Students earned three points if they were able to meet the expectations of the section, two points if the expectations were emerging and one points if they did not meet expectations. The same rubric was to assess the draft and final versions of each writing assignment. See Appendix C and D for the Assignment Rubrics.

**Peer Feedback Comment Form.** The researcher-created Peer Feedback Comment form provided prompts and questions to guide the students in giving content feedback. The form has two open-ended questions in four sections that correspond to the content portion of the assignment rubric and four additional questions requiring students to make suggestions about revisions to their partner. The form has a total of twelve questions. (All of the questions are opened-ended and require more than one word to answer.) For example, two of the questions ask, “What made you feel as if your partner had a well defined teaching philosophy?” and “What was missing from the philosophy?” See Appendix E and F for the peer feedback comment form.

**Student Reflection Questionnaire.** The researcher-created, 8-item student questionnaire was used to explore the types of revisions that students reported making on their drafts in response to feedback from a peer, as well as revisions made after providing feedback to a peer. Students were asked two questions about the types of changes made based on feedback: one question about giving feedback and one about receiving feedback. Students were also asked about comments that were most helpful and the approximate number of changes they made
because of peer feedback. Students’ perceptions of helpfulness and the influence of the peer feedback process on their own work were also elicited. Students rated the helpfulness and influence of the feedback on a Likert-type scale ranging from 1-5, with 1 being least helpful/influential and 5 being most helpful/influential. See Appendix G for the Student Reflection Questionnaire.

**Classroom Community Survey (Rovai, 2002).** The survey was created by Rovai to measure sense of community and belongingness in a learning environment. Rovai’s (2002) research concluded that the Classroom Community Scale is a reliable measure of classroom community and the instrument yields two interpretable factors, belongingness and learning. Two internal consistency estimates of reliability were calculated: Cronbach’s coefficient for the full classroom community scale and the split half coefficient corrected by the Spearman-Brown prophecy formula. Cronbach’s coefficient was .93 and the equal-length split-half coefficient was .91 indicating excellent reliability (Rovai, 2002). A validity analysis was conducted and revealed that the procedures used to develop the Classroom Community Scale provide high confidence that the test instrument possesses high content and construct validities, including independent ratings of all twenty items as totally relevant to a sense of community in a classroom by three educational psychology professors. While the instrument was used to measure community within an online class it is not limited to use to a distance learning population (Rovai, 2002). In 2008 Dawson used the Classroom Community survey to study the relationship between student communication interactions and sense of community in a variety of content-based higher education hybrid classes. The Classroom Community survey is also recommended for use with populations that are similar to online communities, such as commuter schools (community colleges) (Rovai, 2004). In the current study, the survey was used to measure belongingness and
learning within the classroom community. The Classroom Community Survey is composed of 20 questions to be answered on a Likert-type scale: strongly agree, agree, neutral, disagree, strongly disagree. Participants completed the survey anonymously, first during week five and again during week eight, after the final draft of the writing assignment had been submitted. See Appendix H for the Classroom Community Survey.

**Procedure**

The current intervention was embedded within 24 ECE classes at BMCC. The peer feedback intervention and the implementation of the Classroom Community Survey took place in the treatment condition, which consisted of 12 of the class sections using a pretest/posttest design. The control condition, which consisted of 12 of the class sections, implemented a business as usual writing assignment and the Classroom Community Survey using a pretest/posttest design. A variety of instructors taught each of the ECE classes but each instructor was randomly assigned to only one condition, either the control or the treatment.

The intervention occurred as a regular classroom activity based upon the rationale that writing interventions across content areas are applicable and encouraged as tools in a community college setting. Each course instructor filled out a demographic questionnaire, and participated in the intervention training, detailed below.

The writing assignment for all sections, treatment and control, of the psychological foundations in education course was the same; and the writing assignment for all sections, treatment and control, of the social foundations in education course was the same. The assignments for both courses, psychological foundations and social foundations, involved utilizing class readings to create a teaching philosophy. The assignments for each course had a rubric that clearly outlined the dimensions of the assignment. During the first week of class
students were introduced to the assignment and the assignment rubric was reviewed. In both conditions, during week five the assignment was reviewed and students were given a self-edit checklist, which was reviewed by the instructor (see Appendix I). Students brought in a draft of the assignment to class during week six. In class, students either engaged in content-based peer feedback as directed by the instructor (treatment) or received instructor support using the self-editing checklist (control). The instructor reviewed the rubric in class, asking the students to evaluate their paper, making sure they include each component.

**Control Group.** The control group participated in a business as usual, self-edit revision process but not the peer feedback intervention. The control group used a self-edit checklist created by the primary investigator (PI). The PI used a numeric system to de-identify the drafts. Students brought draft one to class during week six. During class students worked independently using the self-edit checklist to edit their own paper. The instructor explained each item on the checklist and had students read through their own papers to try and identify errors. Students took home their own paper and edits. They had two weeks to make revisions and submit their final drafts during week eight. The first draft was not graded but it was handed in with the second draft. Students received five points toward their total grade by participating in the self-edit workshop and handing in their first draft with the final paper.

**Treatment Group.** The treatment group participated in content-based peer feedback, using anonymous peer feedback. The instructors used a numeric system to de-identify the drafts. Students handed in draft one using their number, during week six. Instructors collected and randomly redistributed drafts to peers to edit using the Peer Feedback Comment Form. Students provided feedback to peers on the form and the instructor collected and returned papers with the Peer Feedback Comment form. Students then had two weeks to make revisions and submit their
final drafts during Week eight. The first draft was not graded but it was handed in with the second draft. Students received five points toward their total grade by participating in the peer feedback workshop and handing in their first draft with their final paper. Students in the treatment condition also completed the Student Reflective Questionnaire. Table 4 details the timeline for the intervention and control groups.

Table 4

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Psychological Foundations Control N = 5</th>
<th>Sociological Foundations PF N = 5</th>
<th>Sociological Foundations Control N = 7</th>
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</thead>
<tbody>
<tr>
<td>Psych</td>
<td>Introduction to assignment rubric; demographic survey completed</td>
<td>Introduction to assignment rubric; demographic survey completed</td>
<td>Introduction to assignment rubric; demographic survey completed</td>
</tr>
<tr>
<td>ological</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foundations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td></td>
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<tr>
<td>N = 7</td>
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<table>
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<tr>
<th>Week 5</th>
<th>Psychological Foundations Control N = 5</th>
<th>Sociological Foundations PF N = 5</th>
<th>Sociological Foundations Control N = 7</th>
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</thead>
<tbody>
<tr>
<td>Assignment review; self-edit checklist distributed; Classroom Community Survey completed</td>
<td>Assignment review; self-edit checklist distributed; Classroom Community Survey completed</td>
<td>Assignment review; self-edit checklist distributed; Classroom Community Survey completed</td>
<td>Assignment review; self-edit checklist distributed; Classroom Community Survey completed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 6</th>
<th>Psychological Foundations Control N = 5</th>
<th>Sociological Foundations PF N = 5</th>
<th>Sociological Foundations Control N = 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Draft #1 due; in-class peer feedback using peer editing guideline forms</td>
<td>Draft #1 due; in-class self-edit check-list</td>
<td>Draft #1 due; in-class peer feedback using peer editing guideline forms</td>
<td>Draft #1 due; in-class self-edit check-list</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 8</th>
<th>Psychological Foundations Control N = 5</th>
<th>Sociological Foundations PF N = 5</th>
<th>Sociological Foundations Control N = 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final draft submitted to instructor; Classroom Community Survey completed; Student Reflective Questionnaire completed</td>
<td>Final draft submitted to instructor; Classroom Community Survey completed; Student Reflective Questionnaire</td>
<td>Final draft submitted to instructor; Classroom Community Survey completed; Student Reflective Questionnaire completed</td>
<td>Final draft submitted to instructor; Classroom Community Survey completed; Student Reflective Questionnaire completed</td>
</tr>
</tbody>
</table>

Note. N = the number of class sections.

**Instructor Training.** Prior to the start of the semester, the instructors were contacted via
email from the PI, briefly explaining the study and the intervention to be implemented in the course and requesting their participation in this study. The instructors who agreed to participate attended a training workshop run by the PI prior to the start of the semester. During the workshop, the PI introduced and trained instructors on the measures. Instructors were trained using a script on how to implement a peer feedback intervention during week 6, see Appendix L. The PI was available during the semester to answer any question about the interventions. During week five the PI emailed all the instructors a review of the intervention and provided an additional opportunity for instructors to ask questions. Fidelity checks were conducted by the PI during Week six to ensure that the instructors were following procedures. The fidelity checks involved the PI attending class to document the implementation of the content-based peer feedback intervention in the treatment groups or the self-editing intervention in the control group.

At the beginning of the study, 18 instructors, teaching 36 class sections were originally trained to complete the intervention. Due to issues with fidelity, 14 instructors, teaching 24 sections, are included in the study.

**Data Coding**

Data coding considered four components: 1) Quality of writing score from draft to final, as assessed with the assignment rubric, 2) Types of feedback comments, surface or content, that students make most frequently, 3) Types of content-based comments, task or process, that students make most frequently, 4) Type of feedback comments, task or process, that elicit more content based revisions from students.

**Rating Student Writing.** Students’ first drafts and final drafts were read and scored by four individual raters. The individual raters were faculty who teach in a community college
setting and are familiar with community college students and the use of rubrics to assess writing assignments. The raters were introduced to the assignment and trained by the PI on how to use the assignment rubric to score the students’ papers. (Each paper was worth a total of fifteen points, divided over five sections. A student could earn 3, 2 or 1 point for each of the five sections.) The drafts were de-identified and randomly scored by one of the four raters; all raters scored every tenth paper. A total of 240 student participants in 24 class sections had papers scored. Each participant had a draft and final paper scored for a total of 480 papers. For each of the 24 class sections, ten participants’ papers were randomly chosen to be scored. Intra-class correlation coefficient was used to determine inter-rater reliability. A high degree of reliability was found between all four raters’ measurements. The average measure of ICC was .867 with a 95% confidence interval from .735 to .936. F (23,72)=7.508, p<.001.

**Coding Peer Feedback.** A pair of independent raters was trained in the coding scheme based on the work of Cho and Cho (2011), which distinguishes between type of feedback, surface and content feedback. Feedback that refers to writing mechanics was labeled surface feedback and feedback that pertains to the substance of the writing was labeled content feedback. In the current study, each student response that was categorized as content-based feedback was further coded (based on the data), using the revision to Hattie and Timperley’s (2007) level of feedback model proposed by Almendral (2012). In Almendral’s model, the levels of process and self-regulation levels are combined (because it is not always possible to identity the difference between the two levels), thus creating a coding scheme that includes 3 levels: task, process and self. The rationale for combining process and self-regulation into one level allowed student responses to be explored while avoiding issues that would have arisen due to unclear boundaries between the two levels (Almedral, 2012; Hattie & Timperley, 2007). The content-based coding
scheme therefore contained three main levels: 1) Task, 2) Process/SR, and 3) Self.

The pair of raters coded two questions on the Peer Feedback Comment Form. Question 1) What are the most important things for your partner to remember when revising this draft? and Question 2) What will you do differently on your paper now that you have read your partner’s paper? Answers were coded either as surface feedback or content feedback (Cho & Cho, 2011). Answers that were coded as content feedback were further coded for level of feedback: 1) Task, 2) Process/Self-regulation, 3) Self, (Almedral, 2012; Hattie & Timperley, 2007). The raters then compared the answers from Peer Feedback Comment Forms to the final drafts to determine the types of feedback comments that elicit revisions from students. Cohen’s Kappa was used to determine inter-rater reliability. There was good agreement between the two raters’ scoring (k = .726, 95% CI, (.599, .853), p < .0005).

Additionally, the PI coded the Student Reflective Questionnaire for both the control and treatment conditions. For the control, the PI coded questions:

1) Which item on the Checklist was most helpful?

2) On a scale of 1-5 with 1 being not helpful and 5 being most helpful, rate the helpfulness of the Checklist.

4) Approximately how many revisions did you include in your final draft from the Self-Editing Checklist, on the Student Reflective Questionnaire?

For the treatment, the PI coded questions:

1) What comments were most helpful in editing your draft?

2) On a scale of 1-5 with 1 being not helpful and 5 being most helpful, rate the helpfulness of the feedback that you received.
4) Approximately how many revisions did you include in your final draft from the comments provided by your partner?

For each question, the PI entered student responses into a spreadsheet and calculated percentages and frequencies. The PI ran an independent samples t-test to determine which condition, treatment or control perceived the writing supports to be more helpful.

Statistical Analyses

Descriptive statistical analyses focused on the demographics of the classes and the instructors. Treatment and control groups were compared to determine whether there were significant differences between the groups in terms of age, gender, number of year at BMCC and amount of remedial coursework completed. Following this, analyses were directed towards the five core research questions, as detailed below.

Research Question 1. What is the impact of a peer feedback writing intervention on community college students’ academic writing, as measured by an instructor-created rubric?

To evaluate the treatment effects of content-based peer feedback intervention on student writing, gain scores (posttest – pretest) were computed and aggregated for all class sections in both the control and treatment condition. An independent samples t-test was performed by condition to compare aggregated class means.

Research Question 2. What is the impact of a peer feedback writing intervention on community college students’ feelings of belongingness, as measured by the Classroom Community Survey (Rovai, 2002)?

To evaluate the effects of classroom on students’ feelings of belongingness, students in each class section completed the Classroom Community Survey (Rovai, 2002) at week five in the semester as a pretest measure and again during week eight in the semester as a posttest
measure. The Classroom Community Survey (Rovai, 2002) is a 20-item survey that measures sense of community, or belongingness, on a Likert-type scale: strongly agree, agree, neutral, disagree, strongly disagree. Items number 1,2,3,6,7,11,13,15,16, and 19 follow: strongly agree = 4, agree = 3, neutral = 2, disagree = 1, strongly disagree = 0. Items number 4,5,8,9,10,12,14,17,18, and 20 follow a reverse coding pattern. Total raw scores range from a maximum of 80 to a minimum of 0. Participants completed the survey anonymously.

The PI calculated gain score (posttest – pretest) of each student response to the Classroom Community Survey (Rovai, 2002). Scores were then aggregated for each class section. An independent samples t-test was performed to compare aggregated class means for the purpose of examining the effects of condition.

**Research Question 3.** *In the peer feedback condition, what types of feedback comments, surface or content, do students make most frequently?*

Using the coding scheme based on the work of Cho and Cho (2011), two independent raters coded two questions on the Peer Feedback Comment Form for surface or content feedback:

1) *What are the most important things for your partner to remember when revising this draft?*

2) *What will you do differently on your paper now that you have read your partner’s paper?*

Question 1 analyzes the type revisions students suggest to their partners when giving peer feedback. The raters coded the suggestions as surface, content or both. Question 2 analyzes the types of revisions students suggest for themselves after giving peer feedback. The raters coded the suggestions as surface, content or both. Percentages and frequencies of surface and content
comments were calculated for both questions.

**Research Question 4.** *In the peer feedback condition, what types of content-based comments, task or process do students make most frequently?*

Two independent raters used the revision to Hattie and Timperley’s (2007) feedback model proposed by Almendral (2012) to further code content-responses on the Peer Feedback Comment Form for the questions:

1) *What are the most important things for your partner to remember when revising this draft?*

2) *What will you do differently on your paper now that you have read your partner’s paper?*

Question 1 analyzes the type of revisions students suggest to their partners when giving peer feedback. Question 2 analyzes the types of revisions students suggest for themselves after giving peer feedback. Answers for both questions were coded as: 1) Task, 2) Process/Self-regulation, 3) Self (Almedral, 2012; Hattie & Timperley, 2007). Percentages and frequencies were calculated for all three levels.

**Research Question 5.** *Do process-based feedback comments or task-based feedback comments elicit more content-based revisions from students?*

Two independent raters then coded the Peer Feedback Comment Forms using the revision to Hattie and Timperley’s (2007) feedback model proposed by Almendral (2012). After each peer feedback comment was coded as Task, Process, Self, the coders reviewed the final drafts to identify revisions linked to each peer feedback comment and coded them as either Process or Task. The number of revisions was calculated for both Process-based comments and Task-based
comments.

Question 1) *What are the most important things for your partner to remember when revising this draft?* – raters looked for changes made by the students after receiving peer feedback to this question.

Question 2) *What will you do differently on your paper now that you have read your partner’s paper?* – raters looked for changes made by the students after giving peer feedback. compared
Chapter 4: Results

This chapter describes the results of the analyses used to explore the abovementioned research questions about the content-based peer feedback intervention. The chapter begins with preliminary analyses of the demographic data. Following this, each research question was analyzed based on the statistical procedures described in chapter 3. Finally, the chapter discusses issues of reliability and validity.

Preliminary Analyses

Preliminary analyses were conducted to examine the demographic characteristics: race/ethnicity, gender, rank, full/part time status, and years at BMCC, reported by the instructors in the control and treatment conditions. Results of a one-way analysis of variance (ANOVA) revealed no statistical differences between the instructors in the treatment and control conditions.

Analyses also were conducted to examine the demographic characteristics of: race/ethnicity, gender, home language, other family with college experience, and number of remedial courses of the student participants in the control and treatment conditions. Similarly, results of a one-way analysis of variance (ANOVA) revealed no statistical differences between the classes in the treatment condition in terms of race/ethnicity, gender, home language, other family members with college experience, and number of remedial courses. When the classes in the treatment condition were combined and compared to the control condition, no statistical differences were found (Non-significant ANOVA results can be seen in Appendix K).

Impact of a Content-Based Peer Feedback Writing Intervention on Academic Writing

To begin to evaluate the impact of the peer feedback writing intervention on college students’ academic writing, the students’ first drafts and final drafts were read and scored by four individual raters, using the instructor-created rubric. A high degree of reliability was found
between all four raters’ ratings/scoring. The average measure of ICC was .867 with a 95% confidence interval from .735 to .936, $F(23,72)=7.508$, $p<.001$.

The PI then calculated gain scores (posttest-pretest) for all students and aggregated scores by class section. A $t$-test was conducted to compare the gain scores in the control and treatment condition. The gains in academic writing scores were significantly greater in the peer feedback intervention group ($M=2.550$, $SD=.438$) than in the self-editing control group ($M=.550$, $SD=.145$), a statistically significant difference of 2.00 (95% CI, -2.276 to -1.723), $t(22)=-15.021$, $p=.001$. In Figure 1, a graphical representation of the academic writing gain scores of the two groups, the differences between conditions are illustrated. The effect size for the treatment met Cohen’s convention for a large effect but this should be interpreted with caution. The analysis is based on aggregate means of class rather than on means of individual learners thus effect sizes are not comparable. The results suggest the differences in scores could be due to the impact of the peer feedback intervention. Specifically, these results suggest that a content-based peer feedback intervention may help improve student writing. See Table 5.

*Figure 1: Mean Gain Scores of Students’ Writing by Condition*
Table 5

<table>
<thead>
<tr>
<th>Condition</th>
<th>M</th>
<th>SD</th>
<th>T</th>
<th>p</th>
<th>Cohen’s d</th>
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</thead>
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<td>Control</td>
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<td>.145</td>
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<td></td>
</tr>
</tbody>
</table>

**Impact of a Content-based Peer Feedback Writing Intervention on Students’ Feelings of Belongingness**

The *Classroom Community Survey* (Rovai, 2002) was employed to measure students’ feelings of belongingness. The survey consisted of 20-items that measures sense of community, or belongingness, on a Likert-type scale: strongly agree, agree, neutral, disagree, strongly disagree. The scale had a high level of internal consistency, evidenced by Cronbach’s alpha of 0.879.

To evaluate the effects of classroom on students’ feelings of belongingness, the gain score (posttest – pretest) of each student response to the Classroom Community Survey (Rovai, 2002) was computed. Scores were then aggregated for each class section. An independent samples *t*-test was performed to compare aggregated class means for the purpose of examining the effects of condition.

Gains in students’ feelings of belongingness as measured by the Classroom Community Survey, (Rovai, 2002) were significantly greater in the peer feedback intervention group (*M* =7.8155, *SD* = 3.7743) than the self-editing control group (*M* =2.5338, *SD* = 3.419), a statistically significant difference of 5.282 (95% CI, -8.332 to -2.232), *t*(22) = -3.591, *p* = .002.

In Figure 2, a graphical representation of the Classroom Community Survey (Rovai, 2002) gain scores of the two groups, the difference between conditions are illustrated. The effect size for the treatment met Cohen’s convention for a large effect, but this should be interpreted with caution.
The analysis is based on aggregate means of class rather than on means of individual learners thus effect sizes are not comparable. See Table 6.

Figure 2: Mean Gain Scores of Students’ Feelings of Belongingness by Condition

Table 6

<table>
<thead>
<tr>
<th>Condition</th>
<th>M</th>
<th>SD</th>
<th>T</th>
<th>p</th>
<th>Cohen’s d</th>
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<td>7.815</td>
<td>3.777</td>
<td>3.591</td>
<td>.002*</td>
<td>1.442</td>
</tr>
<tr>
<td>Control</td>
<td>2.534</td>
<td>3.419</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Impact of a Content-Based Peer Feedback Writing Intervention on Types of Feedback

Comments

A pair of independent raters was trained in the coding scheme based on the work of Cho and Cho (2011), which distinguishes between surface and content feedback. In the current study, feedback that refers to writing mechanics was labeled surface feedback and feedback that pertains to the substance of the writing was labeled content feedback. Additionally, the raters were trained to code content-based feedback using the revision to Hattie and Timperley’s (2007) feedback model proposed by Almendral (2012). Cohen’s Kappa was used to determine inter-rater reliability. There was good agreement between the two raters’ scoring (k=.726, 95% CI,
(.599, .853), p < .005).

There were 120 student participants in the treatment group who were exposed to the peer feedback writing intervention. Out of the 120 students, 84 peer feedback comment forms were coded. Twenty-one of the forms were not returned to the PI after the intervention. Fifteen of the forms were not codable for reasons such as not answering the questions or answering the questions with comments that fell outside of the definition of surface or content feedback. For example, four students answered, “I don’t know” to the question: *What are the most important things for your partner to remember when revising this draft?*

Using the coding scheme based on the work of Cho and Cho (2011), two independent raters coded Questions on the Peer Feedback Comment Form as surface feedback, content feedback or both surface and content feedback. Raters coded the questions: 1) *What are the most important things for your partner to remember when revising this draft?* and 2) *What will you do differently on your paper now that you have read your partner’s paper?*. In response to Question 1) *What are the most important things for your partner to remember when revising this draft*, 30% (25) of the students provided surface feedback, 57% (48) of the students provided content feedback to their partner, and 13% (11) of the students provided both surface and content feedback to their partners.

In response to Question 2) *What will you do differently on your paper now that you have read your partner’s paper?*, 17.8% (15) of the students reported that they would make surface changes, 65.5% (55) of the students reported that they would make content changes, and 16.7% (14) of the students reported that they would make both content and surface changes to their paper after giving feedback to their partner. See Table 7 for percentage and frequencies of feedback comments.
Two independent raters used the revision to Hattie and Timperley’s (2007) feedback model proposed by Almendral (2012) to further code responses labeled as content feedback for Questions 1) What are the most important things for your partner to remember when revising this draft? and 2) What will you do differently on your paper now that you have read your partner’s paper?

Question 1 analyzed the type of revisions students suggest to their partners when giving peer feedback. Question 2 analyzed the types of revisions students suggest to themselves after giving peer feedback. Answers for both questions were coded as: 1) Task, 2) Process/Self-regulation, 3) Self 4) Task and Process/SR (Almedral, 2012; Hattie & Timperley, 2007).

Percentages and frequencies were calculated for all three levels.

### Impact of a Content-Based Peer Feedback Writing Intervention on Types of Content Feedback Comments

**Table 7**

**Percentage and Frequencies of Surface and Content Comments**

<table>
<thead>
<tr>
<th>Type of revisions</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface</td>
<td>25</td>
<td>30%</td>
<td>15</td>
<td>17.8%</td>
</tr>
<tr>
<td>Content</td>
<td>48</td>
<td>57%</td>
<td>55</td>
<td>65.5%</td>
</tr>
<tr>
<td>Content and Surface-based comments</td>
<td>11</td>
<td>13%</td>
<td>14</td>
<td>16.7%</td>
</tr>
</tbody>
</table>

N: 84 100.00%

84 100.00%
For question 1, 48 responses were coded as content and 11 responses were coded as content and surface for a total of 59 responses that were categorized as content. Of these 59 responses, 54.2% (32) were coded as Task-based, 25.4% (15) were coded as Process/SR-based, 8.5% (5) were coded as Self, 11.9% (7) were coded as both Task and Process/SR-based.

For question 2, 55 responses were coded as content and 14 responses were coded as content and surface for a total of 69 responses that were categorized as content. Of these 69 responses, 55.1% (38) were coded as Task-based, 26.1% (18) were coded as Process/SR-based, 18.8% (13) were coded as Task and Process/SR-based. See Table 8 for examples of surface and content student comments.
### Table 8

**Examples of Student Responses from the Peer Feedback Comment Form**

<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-Category</th>
<th>Exemplar</th>
<th>Exemplar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface-Based</td>
<td>Mechanical/Superficial</td>
<td>Find all of your grammatical errors</td>
<td>I will use the computer to check my spelling</td>
</tr>
<tr>
<td>Revisions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content-Based</td>
<td>Task-Level</td>
<td>Add more details about the theorists</td>
<td>I will include more details about the theorists I chose, like my partner did</td>
</tr>
<tr>
<td>Revisions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Process/SR-Level</td>
<td>Redo your conclusion so it flows</td>
<td>I will reread my paper for flow and to make sure it makes sense</td>
</tr>
<tr>
<td></td>
<td>Self-Level</td>
<td>She did a great job</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Task and Process/SR-Level</td>
<td>Reread your paper to make sure it fits with the rubric</td>
<td>I will rewrite so that I am comparing my experience in education between my two countries</td>
</tr>
</tbody>
</table>

**Peer Feedback Comment Form**

**Question 1) What are the most important things for your partner to remember when revising this draft?**

**Question 2) What will you do differently on your paper now that you have read your partner’s paper?**
Impact of a Content-Based Peer Feedback Writing Intervention on Revisions made by Students

Two independent raters then coded the Peer Feedback Comment Forms using the revision to Hattie and Timperley’s (2007) feedback model proposed by Almendral (2012). After each peer feedback comment was coded as Task, Process/SR, Self, or Task and Process/SR, the coders reviewed the final drafts to identify revisions linked to each peer feedback comment and coded them as either Process or Task. The number of revisions was calculated for both Task-based, Process/SR-based and Task and Process/SR-based changes.

Question 1) What are the most important things for your partner to remember when revising this draft? Raters looked for revisions made by the students after receiving peer feedback to this question. A total of 51 students made revisions after receiving peer feedback. Figure 3 is a graphical representation of the types of revisions students made to their papers after receiving peer feedback.

Figure 3: Revisions Made After Receiving Peer Feedback

0=No Change, 1=Task, 2=Process/SR, 3=Task & Process/SR

Question 2) What will you do differently on your paper now that you have read your partner’s paper? Raters looked for revisions made by the students after giving peer feedback to a
partner. A total of 62 students made revisions after giving peer feedback. Figure 4 is a graphical representation of the types of revisions students made to their papers after giving peer feedback. See Table 9 for percentages and frequencies of revisions made from receiving and giving feedback.

Figure 4: Revisions Made After Giving Peer Feedback

![Revisions Made After Giving Peer Feedback](image)

0=No Change, 1=Task, 2=Process/SR, 3=Task & Process/SR

<table>
<thead>
<tr>
<th>Type of revisions</th>
<th>Frequency Revisions after receiving PF</th>
<th>Percentage Revisions after receiving PF</th>
<th>Frequency Revisions after giving PF</th>
<th>Percentage Revisions after giving PF</th>
</tr>
</thead>
<tbody>
<tr>
<td>No changes</td>
<td>3</td>
<td>5.5%</td>
<td>7</td>
<td>10.1%</td>
</tr>
<tr>
<td>Task-Based</td>
<td>32</td>
<td>59.3%</td>
<td>49</td>
<td>71.1%</td>
</tr>
<tr>
<td>Process/SR- Based</td>
<td>19</td>
<td>29.6%</td>
<td>11</td>
<td>15.9%</td>
</tr>
<tr>
<td>Task and Process/SR - Based</td>
<td>3</td>
<td>5.6%</td>
<td>2</td>
<td>2.9%</td>
</tr>
<tr>
<td>N</td>
<td>57</td>
<td>100.00%</td>
<td>69</td>
<td>100.00%</td>
</tr>
</tbody>
</table>
Impact of a Content-Based Peer Feedback Writing Intervention On Student Perceptions

Students in both the treatment and control condition completed a Student Reflective Questionnaire during week 8, after the final draft was submitted. This researcher-created student questionnaire was used to explore students’ perceptions of helpfulness and influence of the writing support (self-editing checklist for control condition, peer feedback for treatment condition) that they received.

Students in the control condition answered two questions about the business as usual, Self-Editing Checklist:

1) On a scale of 1-5 with 1 being not helpful and 5 being most helpful, rate the helpfulness of the Checklist.

2) Approximately how many revisions did you include in your final draft from the Self-Editing Checklist?

The PI coded and then calculated percentages and frequencies of responses to these questions (see Table 10).

Students in the treatment conditioned answered two questions about the content-based peer feedback writing support that they received:

1) On a scale of 1-5 with 1 being not helpful and 5 being most helpful, rate the helpfulness of the feedback that you received and

2) Approximately how many revisions did you include in your final draft from the comments provided by your partner?

The PI coded and then calculated percentages and frequencies of responses to these questions (see Table 10).
Table 10

<table>
<thead>
<tr>
<th></th>
<th>Control Group, Self-Editing Checklist</th>
<th>Treatment Group, Peer Feedback Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Reflective Questionnaire-</td>
<td>N=42</td>
<td>N=61</td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On a scale of 1 – 5 with 1 being</td>
<td>Helpfulness rating of 2.381</td>
<td>Helpfulness rating of 3.581</td>
</tr>
<tr>
<td>not helpful and 5 being most</td>
<td></td>
<td></td>
</tr>
<tr>
<td>helpful, rate the helpfulness of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>the Checklist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approximately how many revisions</td>
<td>.994 revisions</td>
<td>1.779 revisions</td>
</tr>
<tr>
<td>you include in your final draft</td>
<td></td>
<td></td>
</tr>
<tr>
<td>from the Self-Editing Checklist?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. N = number of student responses.

**Student Perceptions of the Self-Editing Checklist.** In the control group, 32% (42) of students completed the Student Reflective Questionnaire. Students reported making an average of 1 (.94) revision in their final papers after using the self-edit checklist. On the helpfulness scale, 7.1% (3) students rated the Checklist as a 4, 40.5% (17) students rated the checklist as 3, 35.7% (15) students rated the checklist as a 2, and 16.7% (7) students rated the checklist as a 1. The mean rating was 2.38 on a scale of 1-5, with 1 being not helpful and 5 being most helpful.

**Student Perceptions of Feedback.** In the treatment group, 50.83% (61) of students completed the Student Reflection Questionnaire. Overall, the ratings of helpfulness of Peer Feedback were more positive than those of the helpfulness of the Checklist. Students reported making an average of 2 (1.78) revisions in their final papers after receiving feedback from a peer; on the helpfulness scale, 29.0% (18) students rated the peer feedback as a 5, 29.0% (18) students rated the peer feedback as a 4, 22.6% (14) students rated the checklist as 3, 9.7% (6)
students rated the checklist as a 2, and 9.7% (6) students rated the checklist as a 1. The mean rating was 3.58 on a scale of 1-5, with 1 being not helpful and 5 being most helpful.

An independent samples t-test was run to determine if there were differences in students’ perceptions of helpfulness between the treatment and control conditions. Figure 5 is a graphical representation of the differences in student perceptions by condition. Peer feedback ($M = 3.58$, $SD = 1.28$) was perceived as more helpful then the Self-Editing Checklist ($M = 2.38$, $SD = .85$), a statistically significant difference, $M = 1.20$ 95% CI $[1.61, .79]$, $t(101.99) = 5.75$, $p = .001$. See Table 11.

Table 11

<table>
<thead>
<tr>
<th>Condition</th>
<th>M</th>
<th>SD</th>
<th>T</th>
<th>p</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>3.58</td>
<td>1.27</td>
<td>5.748</td>
<td>.001*</td>
<td>1.106</td>
</tr>
<tr>
<td>Control</td>
<td>2.38</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 5: Helpfulness of Writing Activities
Chapter 5: Discussion

The current study examined the two key ways a content-based peer feedback intervention contributed to improvement in community college students’ academic writing. Specifically, the study examined the impact of a content-based peer feedback intervention on improvement in academic writing, and on students’ feelings of belongingness in the classroom. In addition, a more fine-grained analysis of the peer feedback process was utilized, examining students’ use of surface vs. content comments, the breakdown of different types of content comments, as well as the frequency with which each type elicited revisions. Findings are discussed in relation to the research questions that guided this study. Limitations and implications are also considered. Table 12 presents an overview of the research questions, hypotheses, and findings.
### Research Questions, Hypotheses, and Findings

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Hypothesis</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is the impact of a content-based peer feedback writing intervention on community college students’ academic writing, as measured by an instructor-created rubric?</td>
<td>1. Students in the content-based peer feedback class sections will have higher posttest scores than the students in the business as usual class sections.</td>
<td>Supported</td>
</tr>
<tr>
<td>2. What is the impact of a content-based peer feedback writing intervention on community college students’ feelings of belongingness, as measured by the Classroom Community Survey (Rovai, 2002)?</td>
<td>2. Students in the content-based peer feedback class sections will have higher posttest scores on the Classroom Community Survey (Rovai, 2002) than the students in the business as usual class sections.</td>
<td>Supported</td>
</tr>
<tr>
<td>3. What type of feedback comments, surface or content, do students make most frequently?</td>
<td>3. Student will make content-based comments more often to their peers.</td>
<td>Supported</td>
</tr>
<tr>
<td>4. What type of content-based comments, task or process, do students make most frequently?</td>
<td>4. Student will make task-comments more frequently to their peers</td>
<td>Supported</td>
</tr>
<tr>
<td>5. Do process-based feedback comments or task-based feedback comments elicit more content-based revisions from students.</td>
<td>5. Process-based feedback comments will elicit more content-based revisions from students.</td>
<td>Not Supported</td>
</tr>
</tbody>
</table>
The study reported here used a CoP framework to implement a peer feedback intervention with a diverse population of community college teacher education students. The participants in this study engaged in either an instructor guided self-editing or a scaffolded peer feedback intervention with the teaching philosophy assignment. The peer feedback intervention was focused on content-specific feedback. The goal of this work was to investigate the influence of the peer feedback intervention on students’ academic writing and feelings of belongingness.

Situating this project in a CoP framework allowed students to mutually engage in the pursuit of academic writing as a joint enterprise (Wenger 1998). Through participation in this CoP, feelings of connectedness (belongingness) in the classroom were developed, as students produced a *shared repertoire of communal resources* around academic writing (Lave & Wenger, 1991; Summers and Svinicki, 2007). Developing the peer feedback intervention around content within the students’ major (early childhood education) created a more meaningful intervention that helped foster the idea that writing is a recursive process used to communicate with an authentic audience.

**Peer Feedback and Academic Writing**

Results showed changes over time in students’ writing scores were statistically significant in the content-based peer feedback treatment condition, but not in the business as usual, self-editing control condition. This finding suggests that the peer feedback intervention may have influenced students’ writing.

This study also analyzed the type or level of surface-based or content-based changes that the students made based on giving and receiving peer feedback. The majority of students, 57%, made content-based changes at the task level, followed by content-based changes at the process/self-regulation level. This is important because corrections made based on task-level
feedback can support task accomplishment and correctness (Hattie & Timperley, 2007). Students making changes at the task-level are making changes based on developing more knowledge about the task. Changes made from this type of feedback may also help students by supporting their developing strategy information about a task, in this case, writing for academic purpose.

The current study attempted to address the gap in the literature around how students’ writing abilities progress over time using a content-based assignment. Situating this work within a framework of CoP allowed students to engage in legitimate peripheral participation. Legitimate peripheral participation, as explained by Lave and Wenger (1991), concerns the process by which newcomers (novice) become part of a community of practice by engaging in an activity (content-based peer feedback); learning takes place through the process of participating in the sociocultural practice. Students who are newcomers to academic writing were able to participate in the academic community by providing content-based feedback to a peer. After reviewing the student responses from the Peer Feedback comment form, the PI reported that the students in this study appeared to engage in legitimate peripheral participation, for example, students made suggestions to their partners “add more details about educational theorists to their paper” and reflected on revisions that they were going to implement on their own papers, “I will rewrite so that I am comparing my experience in education between my two countries”. These novice writers participated both as authors and editors; giving suggestions to support improvement and requesting support. For example, one student suggested that their partner “reread your paper to make sure it fits with the rubric”. Additionally, instructors reported that some students informally requested that their partner do “a good job” and shared some of their own concerns like, “English is my second language so make sure it makes sense”. Students were able to
participate meaningfully in the intervention because the peer feedback was based on the course content. The focus on course content ensured that students had a clear base of information. Additionally, using course content addressed differences in background knowledge, by ensuring all students had equal access to the information. Using the content of the course supported student’s ideas in both feedback and their revisions. Moreover, using the course content allowed academic writing to became a process in which students collectively engaged, regardless of their skill level, and worked to improve.

Peer Feedback and Belongingness

The findings support the study hypothesis that students in the content-based peer feedback treatment condition would have higher posttest scores on the Classroom Community Survey (Rovai, 2002) than students in the business-as-usual, self-editing control condition. Changes in students’ feelings of belongingness were statistically significant in the content-based peer feedback treatment condition over time, but not in the control condition. The effect size for the treatment met Cohen’s convention for a large effect. The results suggest that the content-based peer feedback intervention had an impact on students’ feelings of belongingness.

To date, much of the research around belongingness has been operationalized in passive terms (Summers & Svinicki, 2007; Hougaard, 2013), identifying themes such as “satisfying connections with others in one’s social milieu” (Deci et al., 1991, p.332), or the influence of classroom belonging on academic motivation (Goodeenow, 1993). These approaches ignore the connection between “doing” and “being” (Wenger, 1998). In this study, belongingness is operationalized as a feeling of connectedness to a classroom community through an academic intervention and peer interactions. This work connected the “doing”, participating in the peer
feedback intervention, with the “being”, becoming both an author and an editor. It is through engaging in the activity of the peer feedback intervention that the individual is changed.

Similarly, research around student retention exploring the construct of belongingness also fails to make a connection between ‘doing’ and ‘being’. For example, Tinto’s Student Integration Model (1975) situates the responsibility for feelings of belongingness in student ability to acculturate into systems. In the same way, in work by Johnson et al. (2007), belongingness is measured by an individual’s sense of inclusion into the college classroom (Johnson et al., 2007). The current study was based on the premise that belongingness is better fostered by instructional interventions within content-based classes in which students contribute actively to the construction of knowledge, and in doing so, move from being novice to a more knowledgeable peer.

The current study adds to the literature on belongingness because through participation in the content-based peer feedback writing intervention, students combined ‘doing’ with ‘being’ (Wenger, 1998). For example, the students in the treatment condition used the peer feedback comment forms to provide feedback to their partner. Providing this feedback supports both their partners’ writing and their own writing. The ‘doing’, participating in the peer feedback intervention created the ‘being’, a more experienced writer (Wenger, 1998). Additionally, this framework supported legitimate peripheral participation, allowing novice writers to develop experience within a community of practice. The students, engaged in a shared understanding of the course content, came together as co-participants in the intervention, serving as both authors and editors.

Results from the current study are consistent with Karp’s (2010) findings that student feelings of belongingness develop with activities that lead to both academic and social
relatedness. Karp labels these types of activities as information networks. Additionally, the current study supports Karp’s (2011) findings that utilizing academic activities that develop strong relationships between students appears to make students feel like they belong in higher education classrooms.

**Academic Writing and Belongingness**

Students who participated in the content-based peer feedback intervention worked together in class, using a Peer Feedback Comment Form, to provide feedback to their partner about their paper. The students read their partner’s paper closely, using the prompts on the form to make content-based suggestions. During the peer feedback time in class, instructors reported that students asked questions like, “She needs to add more info, can I write a few suggestions?” and students also asked about correct grammar and spelling, as well as making content edits in Spanish. Although the peer feedback intervention was only one assignment in the course, assignments that foster discourse around course content, including instructional interventions around peer tutoring, impact students’ learning positively and support social integration or belongingness (Kuh et al, 2006; Karp et al. 2010).

In a small body of research around belongingness, academic achievement (defined as progressing towards a degree and graduation) is linked to an individual students’ feeling of belongingness and contribution in the classroom (Summer & Svinicki, 2007; Johnson et al, 2007). Situating the content-based peer feedback intervention within a CoP allowed students to create information networks, “social ties that facilitate the transfer of knowledge and procedures” (Karp et al., 2010). The information networks created by the content-based peer feedback intervention provided opportunities for classroom contributions from all students. For example, each student used the Peer Feedback Comment form to provide edits and suggestions to their
partner, contributing to the improvement of their partners’ paper by facilitating the sharing of course content knowledge. In this study, situating the peer feedback intervention within a CoP and using course content may have helped support students’ feelings of belongingness and supported the creation of information networks around academic writing.

**Student Perceptions**

Additionally, students in this study indicated that the experience of engaging in peer feedback was helpful. Students in the content-based peer feedback condition made almost twice as many revisions from draft to final as the students in the business-as-usual, self-editing condition. After giving feedback to peers, two-thirds of the students in this study reported wanting to make revisions in their own work. While many students (59.3%) made revisions after receiving peer feedback, 71.1% reported making revisions after giving peer feedback. These findings indicate that the value of peer feedback is multidirectional and that students benefit from receiving and giving feedback. This finding is similar to the work of Lundstrom and Baker (2009), who found that students’ writing benefited from giving feedback to a peer and that students with lower level skills had more significant gains. The findings from the current study suggest that content-based peer feedback may be valuable as support for novice students’ improvement in writing for academic purpose.

**Limitations and Future Directions**

The current study contributes to the literature on peer feedback interventions, particularly at the community college level. However, a number of limitations exist relating to the methodology of the study. The first limitation relates to the self-selected convenience sample. Students were able to anonymously choose whether or not their work was used in this study, which likely skewed the interpretations and findings towards favoring more successful students.
Students who may not have attended class during in-person recruitment or during the peer feedback class session, feel less comfortable participating, and less integrated into the college classroom community may not have been included in the sample. Additionally, the current study design allowed for one sampling of students writing. Going forward, utilizing a research approach that allows for opportunities to collect follow up data will be important. One future goal would be to understand if a single peer feedback intervention could support sustained improvement in academic writing as well as sustained feelings of belongingness for students.

A second limitation relates to the attrition of instructors due to lack of fidelity with the protocol. Originally eighteen instructors were trained; ten instructors participated in the training for the treatment and eight participated in the training for the control. Due to issues with fidelity three instructors were dropped from the treatment and one instructor was dropped from the control. This attrition may impact the study results as the attrition may be attributed to weaker instructors, thus leaving the stronger instructors in the study and improvement in writing and belongingness may be influenced by teacher skill.

The third limitation relates to the instructor-created rubric used for rating students writing. Although there was strong agreement between raters, differentiation between item 3 (comparison of the theorists with your philosophy) and item 4 (discussion of how educational theorists impacted teaching philosophy) was not robust and required additional discussion to reach agreement. Future research should focus on developing stronger, more precise language within the rubric used for evaluation.

A fourth limitation takes the Peer Feedback Comment Form into consideration. The instructor-created form is geared toward content-feedback. This may have influenced the type of feedback that some students gave to their peers.
Furthermore, the Classroom Community Survey (Rovai, 2002) was distributed at week 5 and again at week 8, leaving only three weeks between pretest and posttest. Although this was done purposefully, to minimize the impact of the study on classroom time, it was not ideal and may have skewed results because of “instrument reactivity”. Going forward, use of a longitudinal design would allow more time between the pretest and posttest.

Finally, results should be considered in light of the current sample and related to the demographic information presented. Overgeneralizations should be avoided as the participants in this research consist of a self-selected convenience sample of students engaging in one content-based peer feedback intervention within their declared major. The findings cannot necessarily be generalized to all community college classrooms.

**Educational Implications and Future Research**

The implications from this work are important to consider. Participation in communities of practice is significant for community college students who are newly entering the academy. Belongingness is developed through this active participation; students are co-constructing knowledge of academic writing through the peer feedback intervention. As students actively participate in a CoP, they are combining ‘doing’ with ‘being,’ which has an impact on the students’ identity (Wenger, 1998). Moreover, the focus on academic writing within the content-based peer feedback intervention engages students in practicing and refining their use of the language of the academy, a further support for their emerging academic identity (Tapp, 2013; Wenger, 1999). Using an instructional intervention like content-based peer feedback, students are able to engage with each other creating information networks that bring their content-knowledge forward while supporting one another.

Given the current trend of moving away from remedial course work that is already taking
place in the California Public Higher Education system and that CUNY is actively investigating, providing instructors who teach content-based courses with research-based interventions to support academic writing may help mitigate some of the challenges associated with the model of remedial course work. Additionally, this model of content-based peer feedback might also develop a community of practice that helps support the development of students’ academic identity through legitimate peripheral participation.

Conclusions

The purpose of the current dissertation was to examine the impact of a content-based peer feedback intervention designed to improve students’ academic writing and feelings of belongingness in the community college classroom. There is significant evidence that the current system of remedial course work does not support improvement in students’ academic writing, and in fact, continues to marginalize already under-resourced community college students, contributing to feelings of “being an outsider” within the academic community. Although there is a plethora of literature around peer feedback, there are not many studies that explore the impact of peer feedback within a content-based community college classroom. Additionally, the research around belongingness in higher education has been operationalized with some variability in the literature. The current study sought to contribute to the literature using an intervention embedded within a CoP, designed to support academic writing.

In summary, the current study found that the students’ academic writing scores and feelings of belongingness in the classroom improved after participating in the content-based peer feedback intervention. Moreover, it was noted that students tended to make the most changes after receiving and giving task-based feedback. This is important because students making changes at the task-level are making changes based on developing more knowledge about the
task. Changes made from this type of feedback may also help students by supporting their
developing strategy information in a task, in this case, writing for academic purpose.
Additionally, situating the peer feedback intervention within a CoP and using course content may
have helped support students’ feelings of belongingness thus supported the creation of
information networks around academic writing.

While more longitudinal research needs to be conducted to refine the content-based peer
feedback intervention, validate the measures and explore peer feedback within content-based
coursework, this study provides future researchers with a lens through which to examine
students’ academic writing development.
Appendix A

Demographic Survey for Participants

1. What is your age?________________

2. How many years have you attended BMCC?____________________

3. Please describe your gender._______________________________

4. Please describe your racial /ethnic background.___________________

5. What is your home/native language?

6. Has anyone else in your family attended college or completed a college degree?

7. What remedial course work did you complete (please circle all that apply)?
   ARC 094     ARC 095     ESL 049     ESL 054     ESL 062
   ESL 094     ESL 095

8. Do you think your writing ability is adequate for college courses?
   ___My writing ability is more than adequate for college courses
   ___My writing ability is adequate for college courses
   ___My writing ability is not adequate for college courses
Appendix B

Demographic Survey for Instructors

1. What is your rank (Lecturer, Instructor, Assistant Professor, Associate Professor, Professor)?

2. Are you full-time or adjunct faculty?

3. How many years have you taught at BMCC?

4. How many years have you taught at the post-secondary level?

5. Please describe your racial /ethnic background.

6. Please describe your gender.

7. What is your area of expertise?

8. Have you ever used peer feedback as a writing intervention in your class prior to this semester?
Appendix C
Psychological Foundations

Teaching Philosophy—20 points (*5 points peer editing)
In this course we have been introduced to several developmental theories that have had an impact on early childhood education. You will write a 3-4 page teaching philosophy to go into your e-portfolio. This philosophy will reflect what you believe is important as an early childhood teacher and the influence of the developmental theories we have studied. Please include information from class readings about the theories of development.

1. To begin define your philosophy early childhood education.
2. Discuss at least three of the theories of development we have read about in class.
3. Compare your philosophy with the developmental theories we have discussed in class.
4. Describe how your personal philosophy fits with one (or more) of the theories discussed in class and provide three reasons for the fit.

<table>
<thead>
<tr>
<th>Points</th>
<th>Teaching philosophy</th>
<th>Discussion of 3 developmental theories</th>
<th>Comparison of the theories with your philosophy</th>
<th>Description of how teaching philosophy fits with developmental theories</th>
<th>Mechanics</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>You have a well defined and detailed philosophy of early childhood education</td>
<td>You have included an in-depth discussion of at least three theories that have influenced early childhood education</td>
<td>You engage in a full comparison of many parts of your philosophy with the three theories you discuss</td>
<td>You describe in detail three reasons why your philosophy fits with one or more of the theories discussed in your paper</td>
<td>There are very few mechanical errors</td>
</tr>
<tr>
<td>2</td>
<td>You have the beginning of a philosophy of early childhood education</td>
<td>You have included a partial discussion of one or two theories that have influenced early childhood education</td>
<td>You compare part of your philosophy with one or two of the theories.</td>
<td>You describe in detail less than three reasons why your philosophy fits with one or more of the theories discussed in your paper</td>
<td>The paper contains four or more mechanical errors</td>
</tr>
<tr>
<td>1</td>
<td>You did not include or articulate your philosophy of early childhood education</td>
<td>You did not include a discussion about the theories of development or the influence on early childhood education.</td>
<td>You do not compare your philosophy to any of the theories.</td>
<td>You do not include any reason of why your philosophy fits with one or more of the theories discussed in your paper</td>
<td>There is no evidence of proof reading and many mechanical errors</td>
</tr>
</tbody>
</table>
Appendix D
Social Foundations

Educational theorist paper – **20 points (*5 points peer editing)**
In the course we have been introduced to the theory and philosophy of several seminal thinkers in the field of early childhood education. You will write a 3-4 page paper about an educational theorist that has influenced your teaching philosophy to go into your e-portfolio.

1. To begin discuss your personal teaching philosophy
2. Discuss two or more educational theorists that have influenced your own life and educational experience.
3. Compare aspects of your philosophy with the educational theorists you have identified.
4. Discuss how the educational theorists have influenced/impacted your teaching philosophy

<table>
<thead>
<tr>
<th>Points</th>
<th>Teaching philosophy</th>
<th>Discuss two or more educational theorists</th>
<th>Comparison of the theorists with your philosophy</th>
<th>Discussion of how educational theorists impacted teaching philosophy</th>
<th>Mechanics</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>You have a detailed and descriptive teaching philosophy that includes a discussion of your educational values</td>
<td>You have included a full and in-depth discussion of at least two theorists with examples about how they have influenced your educational experience</td>
<td>You engage in a full comparison of many parts of your philosophy with at least two theorists</td>
<td>You describe in detail three ways that your philosophy has been impacted by the educational theorists we studied</td>
<td>There are very few mechanical errors</td>
</tr>
<tr>
<td>2</td>
<td>You have the beginning of a teaching philosophy with some details or descriptions including educational values</td>
<td>You have included a partial discussion of two theorists and attempted to include examples of how they have influenced your educational experience</td>
<td>You compare part of your philosophy with one or two of the theorists.</td>
<td>You describe in detail less than three reasons why your philosophy has been impacted by the educational theorists we studied</td>
<td>The paper contains four or more mechanical errors</td>
</tr>
<tr>
<td>1</td>
<td>You did not include or articulate your teaching philosophy well and the details around educational values are sparse</td>
<td>You did not include a full discussion of educational theorists and did not provide examples</td>
<td>You do not compare your philosophy to any of the theorists.</td>
<td>You do not include any reason of why your philosophy has been impacted by the educational theorists</td>
<td>There is no evidence of proof reading and many mechanical errors</td>
</tr>
</tbody>
</table>
Appendix E

Psychological Foundations
Commenting on Your Partner’s Draft

Please answer the following for your partner. Be sure to give your partner a copy of your comments in addition to submitting it to me. If your partner’s paper is missing any of these sections or is not using the readings, please note that for your partner so he or she can correct that.

- Teaching philosophy: What made you feel as if your partner had a well defined teaching philosophy?
  _____________________________________________________________
  _____________________________________________________________
  _____________________________________________________________

- What was missing?
  _____________________________________________________________
  _____________________________________________________________
  _____________________________________________________________

- Discussion of theories of development: What did you find particularly interesting about your partners discussion?
  _____________________________________________________________
  _____________________________________________________________
  _____________________________________________________________

- What could your partner add to make it more complete?
  _____________________________________________________________
  _____________________________________________________________
  _____________________________________________________________

- Comparison of partner’s philosophy to developmental theories: What did you find particularly interesting about you partners comparison of their philosophy of early childhood education to the developmental theories?
  _____________________________________________________________
  _____________________________________________________________
  _____________________________________________________________

- What was missing from this discussion?
  _____________________________________________________________
  _____________________________________________________________
  _____________________________________________________________
- Description of how teaching philosophy fits developmental theories: What helped you see how your partners teaching philosophy fits with the developmental theories discussed?

- What would help you see that better?

- Did your partner refer to the articles or textbook?

- What do you think your partner should work on first?

- What are the most important things for your partner to remember when revising this draft?

- What will you do differently on your paper now that you have read your partner’s paper?

  - Did you go through the whole paper to see what your partner did well and what she or he needs to work on?
  - Are you giving specific positive feedback?
  - Are you making concrete recommendations?
  - Did you submit your comments in time for your partner to use them?
  - Did you say what you will do differently as a result of reading this paper.
Appendix F
Social Foundations
Commenting on Your Partner's Draft

Please answer the following for your partner. Be sure to give your partner a copy of your comments in addition to submitting it to me. If your partner's paper is missing any of these sections or is not using the readings, please note that for your partner so he or she can correct that.

- Teaching philosophy: What made you feel as if your partner had a well defined teaching philosophy?

- What was missing?

- Discussion of educational theorists: What did you find particularly interesting about your partner's discussion?

- What could your partner add to make it more complete?

- Comparison of partner's philosophy to educational theorists: What did you find particularly interesting about your partner's comparison of their philosophy of early childhood education to the developmental theories?

- What was missing from this discussion?
- Description of how educational theorists impacted your teaching philosophy: What helped you see how your partners teaching philosophy fits with the developmental theories discussed?

___________________________________________________________________________

___________________________________________________________________________

___________________________________________________________________________

- What would help you see that better?__________________________________________

___________________________________________________________________________

- Did your partner refer to the articles or textbook?

___________________________________________________________________________

- What do you think your partner should work on first?

___________________________________________________________________________

- What are the most important things for your partner to remember when revising this draft?

___________________________________________________________________________

- What will you do differently on your paper now that you have read your partner’s paper?

___________________________________________________________________________

- Did you go through the whole paper to see what your partner did well and what she or he needs to work on?

- Are you giving specific positive feedback?

- Are you making concrete recommendations?

- Did you submit your comments in time for your partner to use them?

- Did you say what you will do differently as a result of reading this paper.
Appendix G
Student Reflection Questionnaire – Treatment

This is an opportunity to think and reflect on the feedback that you received from your partner. Please take some time to think about the comments or information that you found helpful in the revision of your work.

1. What comments were most helpful in editing your draft?
   __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________

2. On a scale of 1 -5, with 1 being not helpful at all and 5 being the most helpful, please rate the helpfulness of the feedback you received.
   1   2   3   4   5

3. What changes did you make in your paper because of the feedback you received from your partner?
   __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________

4. Approximately how many revisions did you include in your final draft from the comments provided by your partner? ____________________________

5. What changes did you make in your paper because of the feedback you gave to your partner?
   __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________

6. On a scale of 1-5, with 1 being no influence and 5 being the most influence, how much did providing the feedback for a peer influence revisions in your own work?
   1   2   3   4   5
Appendix H

Student Reflection Questionnaire- Control

This is an opportunity to think and reflect on the self-editing process. Please take some time to think about the comments or information that you found helpful in the revision of your work.

1. Which items on the self-editing checklist were most helpful in editing your draft?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

2. On a scale of 1-5, with 1 being not helpful at all and 5 being the most helpful, please rate the helpfulness of the checklist.

1 2 3 4 5

3. What changes did you make in your paper because of the checklist?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

4. Approximately how many revisions did you include in your final draft from self-editing checklist?

_____________________________________________
## Appendix I

Classroom Community Survey (Rovai, 2002)

**Directions:** Below, you will see a series of statements concerning the course you are presently taking. Read each statement carefully and place an X in the parentheses to the right of the statement that comes closest to indicate how you feel about the course or program. You may use a pencil or pen. There are no correct or incorrect responses. If you neither agree nor disagree with a statement or are uncertain, place an X in the neutral (N) area. Do not spend too much time on any one statement, but give the response that seems to describe how you feel. *Please respond to all items.*

| 1. I feel that students in this course care about each other | Strongly agree (SA) (SA) | Agree (A) (A) | Neutral (N) (N) | Disagree (D) (D) | Strongly disagree (SD) (SD) |
| 2. I feel that I am encouraged to ask questions | (SA) | (A) | (N) | (D) | (SD) |
| 3. I feel connected to others in this course | (SA) | (A) | (N) | (D) | (SD) |
| 4. I feel that it is hard to get help when I have a question | (SA) | (A) | (N) | (D) | (SD) |
| 5. I do not feel a spirit of community | (SA) | (A) | (N) | (D) | (SD) |
| 6. I feel that I receive timely feedback | (SA) | (A) | (N) | (D) | (SD) |
| 7. I feel that this course is like a family | (SA) | (A) | (N) | (D) | (SD) |
| 8. I feel uneasy exposing gaps in my understanding | (SA) | (A) | (N) | (D) | (SD) |
| 9. I feel isolated in this course | (SA) | (A) | (N) | (D) | (SD) |
| 10. I feel reluctant to speak openly | (SA) | (A) | (N) | (D) | (SD) |
| 11. I trust others in this course | (SA) | (A) | (N) | (D) | (SD) |
| 12. I feel that this course results in only modest learning | (SA) | (A) | (N) | (D) | (SD) |
| 13. I feel that I can rely on others in this course | (SA) | (A) | (N) | (D) | (SD) |
| 14. I feel that other students do not help me learn | (SA) | (A) | (N) | (D) | (SD) |
| 15. I feel that members of this course depend on me | (SA) | (A) | (N) | (D) | (SD) |
| 16. I feel that I am given ample opportunities to learn | (SA) | (A) | (N) | (D) | (SD) |
| 17. I feel uncertain about others in this course | (SA) | (A) | (N) | (D) | (SD) |
| 18. I feel that my educational needs are not being met | (SA) | (A) | (N) | (D) | (SD) |
| 19. I feel confident that others will support me | (SA) | (A) | (N) | (D) | (SD) |
| 20. I feel that this course does not promote a desire to learn | (SA) | (A) | (N) | (D) | (SD) |
Appendix J

Self-editing checklist:

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did you check the organization and mechanics?</td>
<td></td>
</tr>
<tr>
<td>Did you check your usage of words that are commonly mixed up (there and their, affect and effect etc.)</td>
<td></td>
</tr>
<tr>
<td>Do you have verb tense agreement?</td>
<td></td>
</tr>
<tr>
<td>Did you include professional language?</td>
<td></td>
</tr>
<tr>
<td>Did you use the professional language correctly?</td>
<td></td>
</tr>
<tr>
<td>Did you use quotes if necessary?</td>
<td></td>
</tr>
<tr>
<td>Is your paper organized?</td>
<td></td>
</tr>
<tr>
<td>Does the organization make sense or flow?</td>
<td></td>
</tr>
<tr>
<td>Did you check for spelling errors?</td>
<td></td>
</tr>
<tr>
<td>Did you check for punctuation?</td>
<td></td>
</tr>
<tr>
<td>Did you refer to the textbook?</td>
<td></td>
</tr>
<tr>
<td>Did you refer to articles?</td>
<td></td>
</tr>
<tr>
<td>Did you cite your sources?</td>
<td></td>
</tr>
</tbody>
</table>
## Appendix K

### Non-Significant Differences of Self-Reported Characteristics for Student Participants

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Control</th>
<th>SD</th>
<th>Treatment</th>
<th>SD</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>23.925</td>
<td>7.748</td>
<td>22.817</td>
<td>7.342</td>
<td>1.294</td>
<td>.256</td>
</tr>
<tr>
<td>Years attended BMCC</td>
<td>1.467</td>
<td>.785</td>
<td>1.354</td>
<td>.880</td>
<td>1.092</td>
<td>.297</td>
</tr>
<tr>
<td>Gender</td>
<td>1.025</td>
<td>.157</td>
<td>1.058</td>
<td>.235</td>
<td>1.667</td>
<td>.198</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>2.800</td>
<td>1.363</td>
<td>2.933</td>
<td>1.510</td>
<td>.515</td>
<td>.474</td>
</tr>
<tr>
<td>Home</td>
<td>2.101</td>
<td>1.553</td>
<td>2.076</td>
<td>1.883</td>
<td>.013</td>
<td>.910</td>
</tr>
<tr>
<td>Language</td>
<td>1.492</td>
<td>.502</td>
<td>1.558</td>
<td>.499</td>
<td>1.065</td>
<td>.303</td>
</tr>
<tr>
<td>Other family members attended college</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taken remedial coursework</td>
<td>1.258</td>
<td>1.247</td>
<td>1.225</td>
<td>1.156</td>
<td>.046</td>
<td>.830</td>
</tr>
<tr>
<td>College writing ability</td>
<td>2.067</td>
<td>.383</td>
<td>2.067</td>
<td>.404</td>
<td>.001</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note. *p<.05

### Non-Significant Differences of Self-Reported Characteristics for Instructors

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Control</th>
<th>SD</th>
<th>Treatment</th>
<th>SD</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>1.714</td>
<td>.951</td>
<td>2.00</td>
<td>.817</td>
<td>.364</td>
<td>.558</td>
</tr>
<tr>
<td>Full/Part time</td>
<td>1.714</td>
<td>.488</td>
<td>1.714</td>
<td>.488</td>
<td>.000</td>
<td>1.00</td>
</tr>
<tr>
<td>Years at BMCC</td>
<td>2.7143</td>
<td>1.704</td>
<td>2.7143</td>
<td>1.704</td>
<td>.000</td>
<td>1.00</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>2.142</td>
<td>1.069</td>
<td>2.571</td>
<td>1.134</td>
<td>.529</td>
<td>.481</td>
</tr>
<tr>
<td>Gender</td>
<td>1.143</td>
<td>.378</td>
<td>1.143</td>
<td>.378</td>
<td>.000</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note. *p<.05
Hi, Thank you for agreeing to have your class participate in my study. The purpose of this research study is to investigate whether a content-based peer feedback writing intervention helps to improve students’ academic writing skills and feelings of belongingness in the classroom community. The study is expected to increase our understanding of the ways to support students’ writing.

The goal of the training today is to:
Set up communication
Understand the schedule of the intervention
Learn about the measures being used in the study
Learn about confidentiality and data transfer
Understand the coding system

To begin: You can contact me either by phone or email at any point during the study with questions or for clarification. My email is jgilken@bmcc.cuny.edu my number is 212.220.8000 ext 7985. Please let me know the best method to contact you? (I will record this information). I will follow up with you a week from today in case you have any questions after this training.

The schedule for me to contact you or come to your class is as follows:

- Class meeting #2 - I will come into your class for 30 minutes to talk with your class about the study and ask for consent
- Week 5 – I will contact you to see if you have any questions about the peer feedback intervention
- Week 6 - I will come to your class to observe the peer feedback intervention for purposes of fidelity
- Week 9- We will meet at your convenience so you can transfer the surveys, Student Reflective Questionnaires, Peer Feedback Comment Forms and first /final drafts of student assignments
Please feel free to contact me at anytime throughout the study.

The measures are used for the study are:

**Demographic Survey - Participant.** Each participant will be asked to complete a demographic survey at the beginning of the semester. The 8-item Demographic Survey will be used to collect background information about the participants in each of the classes. This includes: participants’ age, number of years enrolled at BMCC, previous college experience, number of remedial courses taken in reading and writing, race/ethnic background, language background, family experience with college and gender. This information will be used to better describe the population sample.

**Demographic Survey – Instructor.** Each instructor will also be asked to complete a Demographic Survey prior to the beginning of the semester. The 8-item survey will be used to collect background information about the instructors of each class, including: instructors’ rank, area of expertise, years teaching, race/ethnicity, and years at BMCC.

**Assignment rubrics.** There will be two assignments included in the study, one assignment for the 16 Psychological Foundations class sections and one assignment for the 16 Social Foundations class sections. All participants will complete a draft and final revision for their respective assignments. For each assignment, the instructors will use a rubric, which will be used across all the relevant classes (i.e., the rubric for the Psychological Foundations assignment will be used with both the control and treatment sections). The rubrics will outline each assignment and detail how they will be assessed. The rubrics will measure the quality of five components of the written assignment: the students’ personal teaching philosophy, a discussion of class concepts, a comparison of the class concepts to students’ personal teaching philosophy, a description of how the personal philosophy fits with class concepts, and writing mechanics. The student can earn a total of ten points for the assignment. Each section in the rubric will be worth three points. Students earn three points if they are able to meet the expectations of the section, two point if the expectations are emerging and one points if they do not meet expectations. The same rubric will be to assess the draft and final versions of each writing assignment.

**Peer feedback comment form.** The researcher-created Peer Feedback Comment form will provide prompts and questions to guide the students in giving content feedback. The form has two open-ended questions in four sections that correspond to the content portion of the assignment rubric and four additional questions requiring students to make suggestions about revisions to their partner. The form has a total of twelve questions. (All of the questions are opened-ended and require more than one word to answer.) For example, two of the questions ask, “What made you feel as if your partner had a well defined teaching philosophy?” and “What was missing from the philosophy?”.

**Student Reflection Questionnaire.** The researcher-created, 8-item student questionnaire will be used to explore the types of revisions that students report making on their drafts in response to feedback from a peer, as well as revisions made after providing feedback to a peer. Students will be asked two questions about the types of changes made based on feedback: one question about giving feedback and one about receiving feedback. Students will also be asked about comments that are most helpful and the approximate number of changes they made because of peer feedback. Students’ perceptions of helpfulness and the influence of the peer feedback process on their own work will also be elicited. Students will rate the helpfulness and influence of the feedback on a Likert-type scale ranging from 1-5, with 1 being least helpful/influential and 5 being most helpful/influential.
**Classroom Community Survey (Rovai, 2002).** This survey was created by Rovai to measure sense of community and belongingness in a learning environment. Rovai’s (2002) research concluded that the Classroom Community Scale is a reliable measure of classroom community and the instrument yields two interpretable factors, belongingness and learning. Two internal consistency estimates of reliability were calculated: Cronbach’s coefficient for the full classroom community scale and the split half coefficient corrected by the Spearman-Brown prophecy formula. Cronbach’s coefficient was .93 and the equal-length split-half coefficient was .91 indicating excellent reliability (Rovai, 2002). A validity analysis was conducted and revealed that the procedures used to develop the Classroom Community Scale provide high confidence that the test instrument possesses high content and construct validities, including independent ratings of all twenty items as totally relevant to a sense of community in a classroom by three educational psychology professors. While the instrument was used to measure community within an online class it is not limited to use to a distance learning population (Rovai, 2002). The Classroom Community survey is also recommended for use with populations that are similar to online communities, such as commuter schools (community colleges) (Rovai, 2004). In the study, the survey will be used to measure belongingness and learning within the classroom community. The Classroom Community Survey is composed of 20 questions to be answered on a Likert-type scale: strongly agree, agree, neutral, disagree, strongly disagree. Participants will complete the survey anonymously, after the final draft of the writing assignment has been submitted.

The Procedures for implementing the measures are as follows:

- Today you will complete a demographic survey.
  - The survey consists of 8-item survey will be used to collect background information about the instructors of each class, including: instructors’ rank, area of expertise, years teaching, race/ethnicity, and years at BMCC.
  - The survey will be completed at BMCC after the instructor training and will take about 5 minutes. The purpose of the survey is to determine if there are any significant differences between instructors.

During class meeting number 2, students who volunteer to participate in the study will:
- Complete a Student-demographic survey in-class during the second class meeting
  - The survey consists of 6 questions asking about: years at BMCC, gender, racial/ethnic background, home language, family history of college, and remedial course work completed
  - The survey will take about 5 minutes and will be completed in class during the second class session
- Complete a Classroom Community survey in-class during the fifth week of class
  - This survey consists of 20 statements concerning the course you are taking. You will either strongly agree, agree, neutral, disagree or strongly disagree with each statement. The survey will take about 15 minutes.
  - The survey asks questions like: I feel connect to others in this course, I do not feel a spirit of community, I feel isolated in this course, I feel that other students help me learn, etc.
- The survey will take about 10 minutes and will be completed in class during the fifth week
- Use the assignment rubric to create written assignment
  - At home students will complete the written assignment, following the assignment rubric
  - Students will bring written assignment to class.
- Engage in peer feedback of a classmate’s assigned paper and have your assigned paper reviewed by a peer, using a Peer Feedback Comment Form
  - The peer feedback activity will take the entire class period. It will be completed in-class and will happen during week 6 of the class
  - You will have the students pair up by assigning each student a partner
  - Students will exchange papers, read each other papers and fill in the Peer Feedback Comment form
  - Students can ask each other questions for clarification
  - The instructor will facilitate these interactions
- Complete a Student Reflective Questionnaire about your participation in the peer feedback process.
  - This questionnaire contains 6 questions asking you about the type of comment that you received that were helpful to your writing, changes that you made in your paper because of receiving and giving peer feedback, the approximate number of revisions in your final draft from your first draft, and the level of helpfulness of peer feedback.
  - This questionnaire will be completed in class during week 8 and will take about 15 minutes
- Complete a Classroom Community survey in-class again during the 8th week
  - This survey consists of 20 statements concerning the course you are taking. You will either strongly agree, agree, neutral, disagree or strongly disagree with each statement. The survey will take about 15 minutes.
  - The survey asks questions like: I feel connect to others in this course, I do not feel a spirit of community, I feel isolated in this course, I feel that other students help me learn, etc.
- In total the intervention takes 3 classes session of no more than 20 minutes to fill out surveys/questionnaires and 1 full class session to complete the intervention with an already existing assignment.

The study poses minimal to no risks.
Students may refuse to answer any questions that they do not want to answer and still remain in the study.

While the activities in this study are in-class activities, if students choose not to participate, their work will not be included in the study. As a CUNY student, their willingness to participate in this research study, or their request to withdraw from the research study, will not affect their grades or academic standing within CUNY.
I will make my best efforts to maintain confidentiality of any information that is collected during this research study, and that can identify instructors or students. I will disclose this information only with permission or as required by law.

I will protect confidentiality by using a coding system to identify your information to protect identities. Any identifying data will be kept in a locked file cabinet in my office at BMCC S616G, and destroyed after 3 years. Information will not be shared with anyone other than the Primary Investigator.

The research team, authorized CUNY staff, and government agencies that oversee this type of research may have access to research data and records in order to monitor the research. Research records provided to authorized, non-CUNY individuals will not contain identifiable information. Publications and/or presentations that result from this study will not identify individuals or organizations by name.

Coding-I will assign all students a numeric code to be used on all materials. When students are given the surveys they will use the numeric code they are given. Students receive the code in writing and via email. I will also have the master sheet with names and numbers in a locked file cabinet. If a student cannot remember their numeric code, they can access through their email. I will be available all semester to provide support and answer all questions.

Your participation in this research is voluntary. If you have any questions, you can contact me, Jennifer Gilken at jgilken@bmcc.cuny.edu or 212.220.8000 ext. 7985. If you have any questions about rights as a research participant or if you would like to talk to someone other than the researchers, you can contact CUNY Research Compliance Administrator at 646-664-8918.
References


doi:10.1016/j.learninginstruc.2009.08.008


Tapp, J., (2013). *Being and becoming a student: an investigation into how a pedagogic approach built on collaborative participation in academic literacy practices supports students’ academic practice, knowledge and identity* (Doctoral dissertation, University of Nottingham).


